

AMBULATORY SURGERY

International Journal covering Surgery,
Anaesthesiology, Nursing and
Management Issues in Day Surgery



**IAAS 11th International
Congress on
Ambulatory Surgery
9-12 May 2015
Barcelona, Spain**

Abstracts

The Official Clinical Journal of the
INTERNATIONAL ASSOCIATION
FOR AMBULATORY SURGERY

AMBULATORY SURGERY

VOLUME 21.2

Editorial

Mark Skues

31

IAAS 11th International Congress on Ambulatory Surgery

5–8 May 2013, Barcelona, Spain: **Abstracts**

33–101

11th International Congress International Association For Ambulatory Surgery

The International Association for Ambulatory Surgery held its 11th International Congress in Barcelona, Spain on May 9–12 2015, led by IAAS President, Ian Jackson. This was a unique venture, as it coincided with the 12th ASECMA National Congress and the 4th Iberian Congress of CMA, and was ably co-ordinated by Miquel Prats, the President of ASECMA, together with the Scientific and Organising Committees, in association with Carlos Magalhaes the APCA President, and Mohamed Gamal Eldin, the President Elect of IAAS. Our thanks go to them all for the exceptional scientific programme that was delivered, together with the outstanding social events.

As in previous years, this edition of *Ambulatory Surgery* contains abstracts from the International expert speakers who convened from across the world to share their practical experience in the delivery of best quality ambulatory surgery care, and were able to submit details of their insight for subsequent publication in this Journal. Free papers and posters submitted by Congress participants that made the meeting such an enjoyable and stimulating event will be published in *Ambulatory Surgery Journal* 21.3.

I hope you enjoy them.

Mark Skues
Editor-in-Chief

Australian Nurse Teaching

Wendy Adams

Registered Nurse (Member Australian College of Nurses), Executive, Australian Day Surgery Council, Past President Australian Day Surgery Nurses Association

Education of nursing has evolved over the years. Nursing education was first formalized by Florence Nightingale in the 1860s when she set up the first nursing school at St Thomas' Hospital, London and as the point that nursing was being taken seriously by the world. In 1885, Japan opened the first nursing institute and the United States opened their first one in the following year. Gradually, other countries around the world began to regulate the training of nurses.

Historically, nursing education in Australia was public hospital based, with an apprenticeship style system whereby the students were paid under conditions which included full board and lodging. Gradually, regulatory bodies for nursing were established in each state and territory. This resulted in the introduction of minimum standards for both the theory and clinical components of nurse training and the accreditation of schools for general nursing education. These agencies or authorities also maintained a register of those who had met the required standards and were eligible to practice as registered nurses. Admittance to the register was controlled by state-based examination.

The 1980s had seen a rapid increase of technology in the health sector and this in turn placed demands on all health professionals to expand their scope of practice. It was agreed by the majority of stakeholders that the delivery of a contemporary curriculum reflective of the changes in the health system could only be delivered in the tertiary education sector.

At present the qualifications and skill level required for the registration or enrolment as a nurse reflect the various types of work and level of responsibility in the workplace.

For registered nurses, a 3-year bachelor or postgraduate degree in nursing (or the equivalent) is usually required. This degree includes both theoretical and clinical aspects.

Enrolled nurses usually work with registered nurses to provide patients with basic nursing care, doing less complex procedures than registered nurses. Enrolled nurses must have completed an appropriate vocational education and training (VET) course or equivalent, lasting between 1 and 2 years, providing a theoretical base as well as supervised clinical experience.

Nurse practitioners also train as registered nurses but undergo additional tertiary education at Master's degree level and training in nursing at an advanced level, in line with their additional responsibilities. Working autonomously in an advanced and extended clinical role, authorised nurse practitioners may perform some specified functions traditionally done by a medical practitioner, such as prescribing some medications, ordering diagnostic tests and making referrals when operating within approved guidelines. Nurse practitioners are currently a small group, with 731 registered in Australia in 2012, according to the Australian Health Practitioner Regulation Agency.

Today, nursing has become a major industry with many areas of specializations, of which ambulatory surgery is a major one. This presentation will explore how Australia has dealt with teaching nurses to be day surgery nurses in order to assist with the round table discussion for teaching in Ambulatory Surgery.

Reference

Australian Government Department of Health <http://www.health.gov.au/internet/publications/publishing.nsf/Content/work-review-australian-government-health-workforce-programs-toc~appendices~appendix-iv-history-commonwealth-involvement-nursing-midwifery-workforce>

Standards and Recommendations that Enhance the Quality of Ambulatory Surgery

Wendy Adams

Registered Nurse (Member Australian College of Nurses), Executive, Australian Day Surgery Council, Past President Australian Day Surgery Nurses Association

As costs rise around the world for healthcare, while expectations for affordable and accessible health care continue to increase, there is a risk that ambulatory surgery may be promoted just because it is cheaper and more efficient. I believe that safety and quality in ambulatory surgery can be summarized as “the Right patient having the Right procedure in the Right facility with the Right anaesthetic going home to the Right environment”. Therefore, it is very important there are standards and guidelines to ensure this occurs.

In 1981, the Australian Day Surgery Committee commenced as a working party to prepare the first guidelines in Australia for day surgery. As day surgery expanded, the activities of the working party increased and in 1988 its name was changed to the National Day Surgery Committee. Day Surgery rapidly expanded over the following 10 years, and in 1996 it became the Australian Day Surgery Council, which at one stage had representatives from 23 health care organisations. A very important part of this work was the establishment of standards and the accreditation of day surgery facilities. One of the many achievements was the publication of “Day Surgery in Australia: Report and Recommendations of the Australian Day Surgery Council” (2004). In addition, the ADSC were involved with the development of the Australian Council on Healthcare Standards (ACHS) Clinical Indicators which have since been adopted by the IAAS. These include Cancellation of booked procedures, Failure to attend the day surgery centre/unit, Unplanned return to the operation room on the same day and Unplanned return of the patient to an ambulatory surgery unit or hospital. These indicators have since been reviewed and expanded to include preadmission assessment, post discharge follow up and discharge without an escort.

The Australian Day Surgery Nurses Association was formed in 1996 and they too have contributed to standards and recommendations with the development of the Australian Best Practice Guidelines for Day Surgery which were first developed by ADSNA in 2002. The guidelines have been updated every 3-4 years since, with new publications in 2006, 2009 and most recently in 2013. These include The Preadmission and Admission of Adult Patients, Patient Education, The Paediatric Patient, The Care of the Heavy Patient, Pain Management, Discharge, Staffing and Writing Competencies.

The Australian and New Zealand College of Anaesthetists developed a Position Statement called the Recommendations for the Perioperative Care for patients selected for Day Care Surgery. This was revised in 2010 and includes patient selection as well as discharge criteria.

However, the most dramatic change has been the introduction of the National Safety and Quality Health Service (NSQHS) Standards, effective January 1st, 2013. This includes 10 standards which includes Governance, Consumer partnership, Infection prevention and control, Medication safety, Patient Identification, Clinical Handover, Prevention and management of pressure injuries, Blood and blood products, Clinical Deterioration and Prevention and management of falls.

This presentation will explore how standards and recommendations in Australia have contributed to the safety and quality management in Ambulatory Surgery Nursing and promote round table discussion about how this can, and does occur around the world.

References

- 1) Australian Day Surgery Council: <http://www.adsc.org.au/history/>
- 2) Australian Day Surgery Nurses Association: <http://adsna.info/history/>
- 3) International Association for Ambulatory Surgery: <http://www.iaas-med.com/index.php/iaas-recommendations/clinical-indicators>
- 4) Australian and New Zealand College of Anaesthetists: <http://www.anzca.edu.au/resources/professional-documents>
- 5) Australian Commission on Safety and Quality in Healthcare <http://www.safetyandquality.gov.au/our-work/accreditation-and-the-nsqhs-standards/>

Day Surgery Unit: Management, Quality and Safety in Ambulatory Surgery

Dr. Juan Blazquez, Dr Josep Planell, Dr. Oscar Colomer
Spain

This is an international course on organizational models and best practices of day surgery. Course content will draw on the experience of leading different models of Day Surgery units, and Day Services with the aim to viable solutions adaptable to the different local situations.

The principle goal, therefore, is to provide participants with basic knowledge and information on both the improvement in performance of existing Day Surgery and for the design and organization of new centers in countries that are just beginning their activity. Moreover, ample space will be given to discussion on health systems and policies and their impact on the development of Day Surgery and Day Services.

In our case we will present our unit dependent on the main hospital but separated from the main building with certain autonomy ("Satellite unit") we will discuss the advantages. Our unit covers an area of 400.000 inhabitants, we have 4 operating theatres and we perform over 7000 surgical procedures per year in almost all the surgical specialties.

We will show the unit figures the circuits and types of surgeries we perform regarding the management, quality and Safety.

Better Safe Than Sorry

Marja Brakxhoofde
Netherlands

Patient safety is one of the most important issues within hospitals in the Netherlands. To secure and improve patient safety, most Dutch hospitals implemented an accredited or certified safety management system (VMS) as well as ten substantive themes. This safety management system VMS is an embedment of patient safety in practice and acts as the system with which hospitals continuously identify risks, implement improvements and secure, evaluate and adapt policies.

Myriam Berben works as a supervisor at the surgical day treatment department at an academic hospital and Marja Brakxhoofde is the supervisor of a general day treatment department at an top clinical hospital.

The following themes regarding VMS have been implemented within the day treatment department:

1. Early recognition and treatment of vitally threatened patients.
2. Medication verification with intake and release
3. Prevention of exchange at and with patients
4. Prevention of unnecessary suffering of patients caused by pain
5. High Risk Medication: preparing and administering parenteralia

During our presentation we will discuss these themes, where additional attention is necessary the implement themes and which results are achieved at the day treatment department. Also we will focus on the questions: what influence does VMS have on the management of the working place and how big is his/her circle of influence?

Our goal is to demonstrate how we use the VMS themes to safely guiding a patient through the day treatment process and properly coach the employees... **to make a significant impact on health care.**

Quality Assessment of AS by Indicators and Patient Questionnaires. 15 Years Experience

Jost Brökelmann, Klaus Bäcker
Germany

Introduction

An instrument for quality assessment AQS1 has existed since 2000 that uses 17 indicators to prospectively monitor process quality and safety of medical and organisational measures in ambulatory surgery (AS).

Methods

Quality assessment is analysed by 3 questionnaires – by surgeon, anaesthetist and patient. Until now, the questionnaires of 1.293.613 doctors and 557.966 patients out of more than 500 surgical units were evaluated. The return rate over 15 years was 44 %. Patient questionnaires are anonymous, filled out 2 weeks after surgery, and then sent to medicaltex institute. The costs for processing one case are 1.49 € per case.

Results

The following clinical indicators were most helpful:

- Unplanned hospitalization within 14 days
- OR blocking time (from arrival of patient in the OR until leaving)
- Time period in the recovery area
- Inability to work (in days) after surgery
- Intensity of wound pain on the 1. postoperative day
- Intensity of nausea on the 1. postoperative day
- Possibility to reach the surgeon or anaesthetist at any time
- Necessity after discharge to see another doctor as an emergency case
- Sufficient pain medication on the day of surgery (pain scale)
- Complication “wound infection” requiring treatment
- Complication “postoperative bleeding” requiring treatment
- Patient satisfaction with this ambulatory procedure

98 % of the answering patients are satisfied with AS and would again choose AS. Complication rates for frequent surgical procedures are quite low and can be investigated on www.patientenallee.de. It could be shown that different types of anaesthesia (local or general) correlate with a) time until discharge from surgical unit and b) time out of work.

Discussion

In a recent publication postoperative patient satisfaction is significantly related to preoperative information / informed consent by surgeon and anaesthetist. Thus the preoperative information is the most important indicator for overall quality outcome.

Safe Practice in Australia

Anne Crouch

Australia

Safe Practice in Australia is driven by our Accreditation system and the Australian Commission for Safety and Quality in Healthcare.

The National Safety and Quality Health Service (NSQHS) Standards were developed by the Commission to drive the implementation of safety and quality systems and improve the quality of health care in Australia. The 10 NSQHS Standards provide a nationally consistent statement about the level of care consumers can expect from health service organisations.

These standards were implemented in 2013 and results in meeting the standards for Day Hospitals are evident on the graphs presented.

2015 to 2017 sees the evaluation of the standards and answers the question of have these standards made a difference, if so which ones have had the greater impact.

The potential changes for the next version include leadership, a new standard about providing care, partnerships with patients and Health literacy.

What is Health Literacy and why the national focus moving forward?

Almost 60% of Australians have a low level of individual health literacy. This is important to the safety, quality and effectiveness of health care, according to the *National Statement on Health Literacy* (national statement) released by the Australian Commission on Safety and Quality in Health Care (the Commission).

Low levels of individual health literacy contribute to poorer health outcomes, increased risk of an adverse event and higher healthcare costs. People with low levels of health literacy may not understand their medication instructions, be able to interpret nutrition labels on food, or be able to understand the risks associated with different treatment options enough to make an informed choice.

The Commission has been working with healthcare professionals, consumers, policy makers and researchers to explore the role that health literacy plays in safe and high-quality care and to develop a national approach as a basis for coordinated and collaborative action.

The *National Statement on Health Literacy* proposes a coordinated approach to health literacy based on:

- embedding health literacy into systems
- ensuring effective communication
- integrating health literacy into education.

According to Professor Willis Marshall, Chair of the Commission, addressing health literacy is critical to effective partnerships with consumers. Improving health literacy contributes to a greater sense of empowerment, better quality of care and can also lead to improved outcomes for people and their families.

“This National Statement highlights that there are lots of ways that we can make it easier for people to understand the health system and their health choices. Healthcare providers, managers, policy makers and consumers can all take action to address health literacy.”

References

Australian Commission for Safety and Quality in Health care- ACSQHC

<http://www.safetyandquality.gov.au/publications/health-literacy-national-statement>

<http://www.safetyandquality.gov.au/publications/health-literacy-taking-action-to-improve-safety-and-quality>

Acknowledgement: Dr Nicola Dunbar, Director Strategy & Development ACSQHC.

The Economic Impact of the Ambulatory Patient

Diana Batista Da Silva

Portugal

Forty years ago, all surgery was performed in the hospital. All patients waited the weekend or months for surgery and spent many days in hospitals and weeks out of work. Since then, Ambulatory surgery has had an impressive growth.

Many are the advantages of day surgery, for example: Improved surgery scheduling; Reducing waiting list; Shorter hospital stays; Reduction in staff; Reducing hospital cost; Reduced disruption of daily routines; Less absence from work (patient or caregiver); Better use of high-cost operating room. During these years, many studies in all the world investigated the economic impact of ambulatory patients.

In 2010, a Portuguese study showed the impact of reducing preoperative tests in 1590 ophthalmologic patients, ASA I or II and all the procedures with local anesthesia.

These preoperative tests are electrocardiogram, chest X-ray and analytical study. Between September and December 2010 the cost saving was 50 066,40€ / \$53,245.62.

This Study also showed the potential cost saving in a year 150 000€ / \$159,525.

In the USA, Dr. Brent Fulton and Dr. Sue Kim demonstrated how much Medicare can save with ASCs (Ambulatory Surgery Centers) compared with HOPDs (Hospital Outpatient Departments). USA has more than 5,300 ASCs certified, and between 2008-2011, ASCs saved the Medicare program and its beneficiaries \$7.5 billion. \$6 billion of these savings were realized by the federal Medicare program. Dr. Brent Fulton and Dr. Sue Kim estimate the potential to save another \$57.6 billion over the next decade (2013-2022).

Even without results in 2014, we can safely estimate greater economic gains with the increase of surgeries performed on an outpatient basis.

Introduction

Outpatient surgery, also known as ambulatory surgery, same-day surgery, day case, or day surgery, is surgery that does not require an overnight hospital stay. The term "outpatient" arises from the fact that surgery patients may go home and do not need an overnight hospital bed.

However, in complex surgeries, it may be necessary for extended recovery (23 hours). The purpose of outpatient surgery is saving the patient time and keep hospital costs down, especially in times of crisis.

According to World Health Organization and the European Observatory on Health Systems and Policies, the current crises reopen the debate about the financial sustainability of health systems in Europe. Previous experience of crisis shows that economic shocks pose a threat to health and health system performance.

The crisis in Europe did not affect all countries equally and as a result of the crisis, many households faced growing financial pressure and insecurity. Because of the crisis, many people in

Europe may be more vulnerable to economic shocks in the future. The countries most affected by sustained declines in GDP (gross domestic product) three or more years of negative growth between 2008 and 2013 are Croatia, Cyprus, the Czech Republic, Greece, Italy, Portugal, Slovenia and Spain (Eurostat, 2014).

Governments in Cyprus, Greece, Ireland, Portugal and Spain were forced to seek international financial assistance. In all except Spain, this assistance was accompanied by EU-IMF-determined economic adjustment programs (EAPs) requiring substantial reductions in public spending" (World Health Organization, 2014).

In response to fiscal pressure, policy-makers may attempt to limit public spending through cuts to the health budget. However, health systems generally need more, not fewer, resources in an economic crisis (Velényi & Smitz, 2014).

Almost all of the countries make changes in response to the crisis, trying to enhance efficiency by selectively discouraging the use of non-cost-effective services and mobilizing public revenue for health to maintaining health system performance.

Increasing the number of outpatient surgeries can control costs. But all these gains are possible only with advances in medicine from the last two decades. These advances include improvements in anesthesia, which enable patients to regain consciousness more quickly with fewer after effects, and better analgesics for relief of pain. Also, minimally invasive and noninvasive procedures (laser surgery, laparoscopy, and endoscopy) have been developed and are being used with increasing frequency.

Summary

Many are the advantages of day surgery, for example:

- Improved surgery scheduling;
- Reducing waiting list;
- Shorter hospital stays;
- Reduction in staff, as overnight staffing is usually not necessary;
- Reducing hospital cost;
- Reduced disruption of daily routines;
- Less absence from work (patient or caregiver);
- Better use of high-cost operating room, apparatus and supplies.

The growing economic concern, crisis, and the need to manage and mobilize state budgets are increasing the number of studies on the economic impact of ambulatory patients and respective cost savings.

In 2010, a Portuguese study showed the impact of reducing preoperative tests in 1590 ophthalmologic patient, ASA I or II and all the procedures with local anesthesia.

The preoperative evaluation protocol of Ophthalmology patients appeared in Ambulatory Surgery Unit (UCA) of the Braga Hospital (HB) because of a huge increase of surgeries, especially after the beginning of Project One day surgery in January 2010. This protocol consists of two forms, contraindications for Ophthalmic

Surgery under local anesthesia and preoperative evaluation for Ophthalmology in outpatient.

Before the implementation of this protocol, ophthalmologists ordered an analytical study (complete blood count, ionogram, renal function and blood glucose) to all patients regardless of sex and age, an electrocardiogram (men over 50 and women over 55 years of age or younger with a previous history of heart disease), and a chest X-ray (all patients older than 50 years of age or younger if with lung disease). With the protocol that if the patient is ASA I or II and the procedure can be done with local anesthesia, the ophthalmologists don't order pre-operative routines.

Scientific evidence has shown that some of these pre-operative routines do not add any clinical benefit for most patients. These preoperative test and cost saving are: electrocardiogram 10 500 € / \$11,121.6 ; X-ray chest (15 641,6 € / \$16,567.58) and analytical study (23 924,80€ / \$25,341.15). Between September and December 2010 the cost saving was 50 066,40 € / \$53,245.62. This Study, also show the potential cost saving during a year 150 000 € / \$ 159,525.

In the USA, Dr. Brent Fulton and Dr. Sue Kim demonstrated how much the Medicare program can save with ASCs compared with HOPDs. USA has more than 5,300 ASCs certified (2008-2011), able to perform surgeries much more efficiently than HOPDs.

To estimate the savings generated by ASCs from 2008 to 2011, the analysts calculated the differences in reimbursement rates for each of the 120 most frequent procedures, then multiplied those differences by the number of procedures performed at ASCs each year.

ASCs saved Medicare and its beneficiaries \$7.5 / 6.97€billion where \$6/ 5.58€billion of these savings were realized by the federal Medicare program. Medicare beneficiaries also save money by choosing ASCs because they pay a smaller coinsurance.

For a cataract surgery, the beneficiary saved \$148/137, 6€ by electing ASC instead of a hospital, and Medicare saved \$740/ 687, 8€. In only 2011, the cost savings for cataract surgeries was \$829 /770, 5 € millions.

Another important conclusion is that Medicare currently reimburses ASCs at 58 percent of the HOPD rate for the same procedures.

Dr. Brent Fulton and Dr. Sue Kim estimate the potential to save \$57.6 /53, 5€ billion more over the next decade (2013-2022). However, this depends on market trends, demographic factors and how policymakers encourage the use of ASCs within the Medicare program.

An aging population, along with inflation in health care costs, means that the government's expenditures through the health program are projected to increase substantially in the coming years. Consequently, policymakers in all the world are exploring potential ways to reduce projected health outlays and extend the program's solvency. Many studies offer an important contribution to that discussion and all show the economic impact of the ambulatory patient.

Bibliography

B.Anjos, João;&Vieira,Vicente et al. (2011).Avaliação pré-operatória para Oftalmologia em regime de Ambulatório. Hospital de Braga. Prémio Mais Valor

Brent, Fulton & Kim, Sue. (2013). Medicare cost savings tied to Ambulatory Surgery Centers. Berkeley University of California. ASCA. Available at: <http://ascassociation.org/MedicareSavingsStudy>.

Eurostat (2014) Statistics database, available at: <http://epp.eurostat.ec.europa.eu/portal/page/portal/eurostat/home/>

Thomson, Sarah & Figueras, Josep et al. (2014)- Economic crisis, health systems and health in Europe: impact and implications for policy.WHO Regional Office for Europe

Velényi EV & Smitz MF. (2014). Cyclical patterns in government health expenditures between 1995 and 2010: are countries graduating from the procyclical trap or falling back? HNP Discussion Paper. Washington DC: The World Bank.

WHO (2014) Global health expenditure database, available at: <http://www.who.int/health-accounts/ghed/en/>.

Role of the anesthesiologist in running and organizing a Day Care Center

Jan H Eshuis MD, Anaesthesiologist

Medical Director Day Care Centre, Academic Medical Centre AMC, University of Amsterdam, The Netherlands

Day surgery today is largely carried out in one of four organizational models, as follows, with different levels of required management.

Hospital-based facility – dedicated day-surgery beds in an inpatient facility, common operating theatres, recovery facilities, and medical and nursing personnel with the inpatient department.

Self-contained unit in hospital – operating theatres and ward dedicated exclusively to day-case surgery and separate from the inpatient areas of the hospital. Nurses and administrative personnel dedicated to the day unit. Many surgical specialties working in the same unit share facilities and nonmedical personnel.

Free-standing self-contained unit – apart from hospital site. Possibly more cost-effective than self-contained units on hospital sites. Free-standing units have the potential to provide day surgery near to where the patient lives. They need a back-up connection with a hospital.

Office-based unit – small, self-contained surgical office in surgeon's consulting rooms.

The ideal day surgery service on a hospital site is a self-contained day unit which is functionally and structurally not mixed with the inpatient unit, having its own operating theatres, ward areas, entrance, reception, staff and management structure. Being a part of the clinical hospital it opens possibilities to perform more major surgery and take profit of more advanced clinical feedback if necessary.

With regard to Leadership: Each DSU should have a Medical Director who has a specific interest in day case surgery and who leads the development of local policies, guidelines, contacts within the hospital, reports with other specialists and Clinical Governance in this area. A consultant anaesthetist with management experience is ideally suitable to such a post.

Not a single medical specialist has a similar constant attendance in the logistic chain of Day Surgery. Not a single medical specialist is interacting with so many other doctors, supportive personnel in the OR, and is used to manage a list as the consultant anaesthesiologist. It is the leadership and management as well as staff members, and not the physical structure or the quality of the equipment, that determine the success of a day-surgery service. Success requires the implementation of policies that extend all of the advantages of day surgery to the patient, the health care professional and the community at large. Leadership is needed at all levels of the day-surgery unit. Leaders create a pathway for hospital administrators, physicians, nurse managers and staff in the coordination of their efforts to develop and maintain a day-surgery programme.

The most effective organizational structure for a day-surgery unit involves the creation of a distinct service, led by an experienced manager, who has the day-to-day responsibility for providing efficient, effective and high-quality day-surgery services. Practically this means often a managing principal nurse together with a

medical director, ideally an anesthesiologist. A critical success factor seems to be the maintenance of motivated colleagues, a high level of communication between this managing medical team and the health professionals working in the facility. Day-surgery units tend to achieve maximum efficiency and effectiveness when management and staff are specific to that service, goal-oriented and innovative, enjoy the fast-paced environment and continually striving for perfection.

Within this framework the whole team has to have a coherent goal directed spirit. Day surgery requires a multidisciplinary approach. For a successful outcome it requires active participation all day long by all players – managers, nurses, surgeons, anesthesiologists. There is a need for flexibility, with regular re-evaluation of practice to provide a level of care that reflects individual patient needs.

How much staff is needed? Practical seems 2 ward nurses per 1000 procedures and 2 operating assistants per 1000 procedures. Ward nurses also take the PACU (Recovery) on their behalf on rotation. This gives the nurses variety in their work. Some facilities even extend this to multiskilled nurses who work also in the OR as assistant or with the anesthesiologist.

Administrative staff (planning and administration) takes 1,5-2 FTE. Because all are dedicated to the process of Day Surgery, there is a strong sense of solidarity, which has to be cultivated by common sessions and courses or periodically relaxing events (team building).

Day Surgery means largely logistics. It is vital that the patient has had a thorough pre-assessment well before, with short lines between the DSU and the outpatient preassessment department, and to communicate well in advance with patients (what is expected, about soberness, time of arrival, accompanying persons, travel, stay at home, medication). This is done by oral and written information and two contacts by phone, one day before and after the procedure.

In order to have efficient lists there should be a clear 4-week's schedule and transparent planning program, accessible for surgical specialisms. On the day of surgery two first patients per OR should be there in due time, prepared and brought to the OR. The second patient can be prepared and provided with an iv in the holding so that the interval time is virtually zero. So you can have high rates of net utilization time of the OR, early starting hours, minimal intervals.

Success in Day Surgery largely depends on the anesthetic technique used.

No sedative premedication is advised; only analgesics like acetaminophen and a NSAID. Short acting, rapid cleared agents like Propofol, Sevoflurane, Desflurane, Remifentanyl or other short acting opioids, regional anesthesia like spinal anesthesia and ultrasound guided peripheral nerve blocks should be regular practice. Extra anti PONV treatment is permitted for the sake

of successful discharge, as is aggressive analgesic treatment; peroperative Morphine given well before the end of surgery is no problem.

So the role of an anesthesiologist is both managing and professional and is directed to working well ahead during the day in Day Surgery, being vital for the success of Day Surgery practice.

Thoracic Interfacial Blocks for Breast Surgery in Out Patients

Mario Fajardo
Spain

In the last few years, new ultrasound-guided blocking techniques have been described for breast surgery analgesia however, the evidence supporting the use of these ultrasound-guided blocks is limited and there are no randomized or other controlled trials published from which to base clinical care. The main objective of these novel blocks is to provide a reliable, yet safer and easier alternative to the thoracic paravertebral block (TPVB).

The TPVB in breast surgery is well described and has increased in popularity. Despite the low complication rate of the TPVB, it is an advanced nerve block technique, and it is more challenging to teach and to master. For these reasons, many novice physicians are not comfortable performing it.

Just as surgical techniques for breast surgery have undergone significant changes in last years, analgesia for patients now includes drugs that stimulate rapid recovery with a high degree of postoperative comfort. Accompanying pharmacological advances, the evolution of ultrasonography as an adjunct tool has contributed to the development of new techniques for peripheral nerve blockade. Nerve blockade provides optimal analgesia for many breast procedures, which can minimize the need for opiates and decrease their adverse effects.

Ultrasound-guided blockade of pectoral nerves has generated interest and appears to be particularly useful for patients undergoing breast expanders placed or subpectoral prostheses during reconstructive breast cancer surgery

In searching for optimal analgesic conditions for outpatient breast surgery (high intra- and postoperative analgesia), an ultrasound-guided block has been tested with administration of local anesthetic in the interfascial plane between the anterior serratus and intercostal muscles. With this method, the branches of the intercostal nerves are blocked at the mid-axillary line (BRILMA, that is, blocking the branches of Intercostal nerves in the middle axillary line). The block was first reported in January 2013.

The Brilma Ultrasound-Guided Block Technique

With the patient in the supine position, a linear probe is positioned below the external third of the clavicle to identify, in the surface plane, the pectoralis muscles, the toracho-achromial artery and the cephalic vein that lie between them. In the deep plane, the SAM is identified, resting on the ribs. The needle is then introduced in-plane from medial to lateral, and its tip is placed between the SAM and the External Intercostal muscle at level of second rib. Twenty mL of Levobupivacaine 0.25% were injected under direct ultrasound visualization in real time, fragmenting the total volumen, aspirating every 3 ml to reduce the risk of intravascular injection and minimizing the patient discomfort on hydrodissection

Breast surgery can range from a small lumpectomy to total mastectomy, and these surgeries can be severely painful, require significant amount of opioids, and result in significant morbidity and extended recovery times. Because of a number of comparative advantages, the promising techniques proposed here could become alternatives to the TPVB, thoracic epidurals and intercostal nerve

blocks in patients undergoing NRBS with axillary clearance. BRILMA is an easy technique and relatively quick to perform, because they are superficial, sonographically easy to understand, and they have reproducible sonoanatomy in the vast majority of patients. These factors would help experienced physicians to provide analgesia to more patients, and they would also provide additional options when circumstances are unfavorable to perform a TPVB (such as coagulopathy, intolerance of sympathectomy, or inability to position a patient properly). In addition, BRILMA can be targeted to unilateral or segmental surgery and can cover several dermatomes and maybe the axilla with one injection. They can also very easily be performed as continuous peripheral nerve blocks when extended analgesia is required.

From discussions with our surgeons, these blocks do not interfere with the surgical field because the LA is placed between interfascial planes, and the LA has high absorption between tissues. In the axilla the surgeons may observe more liquid than normal but it is no additional problem for dissection. The needle trajectory and the LA injection do not interfere with dissection and the surgical site. These blocks may open new doors to investigation regarding the recurrence of breast cancer and the incidence of chronic pain after breast surgery. Today we do not have clinical data to compare to other techniques used in patients undergoing breast surgery or in patients with pain from ribs fractures or sternotomy. This may lend them to a greater utility for additional breast procedures such as mammography, breast brachytherapy, breast biopsies, needle wire placement, and treatment of the chronic pain after breast surgery (intercostal branch territories) and intercostal neuromas. Other areas where they could provide effective analgesia include: rib fractures, blunt chest trauma, chest tube placement and sternotomy. This technique can be used for patients with coagulopathies when neuroaxial techniques should be avoided or when patient positioning becomes a barrier.

Acknowledgments

The authors express their gratitude to the families who participated in the donation program of the "Universidad Autónoma de Madrid". We also would like to thank the Department of Anatomy of the "Universidad Autónoma de Madrid", especially Dr. Francisco Clascá Cabré, Professor of Anatomy and Human Embryology and Andrés Olaya Céspedes, Anatomy Technician, for their technical assistance during dissections. And the members of our Thoracic analgesia & anesthesia group investigation Dr. Servando López, Dra. Paula Dieguez, Dra. Patricia Alfaro.

Advantages and Disadvantages in Each Type of Ambulatory Surgery

Hanne Fons

Germany

This session examines some general international highlights in day surgery.

At the moment, there are evidence for performing approximately forty general procedures in day surgery. The question is: Do we exploit the full potential of day surgery or can we increase the number of advanced procedures?

Furthermore, we will discuss some of the benefits both for the organization and not least for the patient.

Evolution, Developments and Improvements in MAC Units: Management Function

P. Sánchez Fornelino

Spain

What was established in the beginnings of MAC (Major ambulatory surgery), based on voluntarism of reduced surgical specialists, in a few years has consolidated a reality widely accepted by many professionals. In the beginning there was a lack of general perception, because of these healthcare expenses are supported by the general budgets. The patient was not aware of that at the hospital big amounts of money are spent and that resources are limited in healthcare, healthcare spending remains a responsibility that falls to everyone.

It was therefore necessary to create a culture in which the user feels the system is something that you own and that resources must be used efficiently and fairly.

Today, the reality is that at least for certain types of upper middle class, is the user who demands that his processes to be performed as outpatients and thus practitioners and the system must be capable of supporting to the owner, i.e. the citizen.

At present our healthcare system is immersed in a world shaped by budget cuts and reduced costs, and where you should bet strongly for efficiency, which ultimately means doing more with less. In this context, Major ambulatory surgery (MAC) can play a significant role.

If we analyze the evolution of Ambulatory Surgery, we see that if the objective in 1998 was quality, the goal in 2015 is to reduce time in the surgical waiting list. But we need to reflect and work on the quality we offer and perceived by the patient, especially in current times when their decision-making is almost complete and is also further promoted by institutions.

In our units, the cost of each outpatient surgical procedure meant and means a significant saving in relation to the cost of the same procedure as traditional, considering the decrease in the average hospital stay.

This today nobody doubts the benefits of this surgical procedure:

Benefits for the patient:

- shortening waiting list
- Reduction of time in hospital
- Reduced risk of nosocomial infections
- Active participation
- Lower cost of procedures
- Decreased surgical occupation of hospital beds.

Since its beginning, the implementation of quality criteria has been a constant focus for proper selection and scheduling of patients, the suitability of the surgical and anesthetic procedure, and adequacy of the immediate and late results resulting in a low incidence of complications.

For all these reasons, since the beginning of the century, researchers have been trying to find new formulas able to increase management efficiency and quality of health care. One of them was clinical management, which aims to decentralize decision-making and autonomy to provide care units.

The strategic lines developed in what concerns the management have been important in our units, and in this paper we will extend its evolution for the different indicators related to:

- Management regarding our activity
- Management related to our patients
- Quality Management
- Professionals Management
- Resource Management
- Knowledge Management

Conclusions

It would be wrong to conceptualize the MAC only as a system that allows us to operate many patients. Gradually we have improved and we have become a well-organized system, doing all phases of the process with such quality that the patient can go home a few hours in complete safety. The more patients we can operate with these conditions the better.

The current health crisis and its importance in the economic and non-economic world should bring back the look of healthcare officials to manage and develop formulas that may be able to reduce costs by processing and encouraging the motivation of professionals, and regarding this subject, the commitment for the maximum development of the MAC is unquestionable and certainly is the best assistance strategy for the future in surgical patients.

The self-management model, based on objectives and incentives, is a strategy applicable to our units and that improves daily.

It was a challenge that we have been able to face and carry forward. We have changed the mentality of professionals and users, and this maturation has invited us to be involved in decision making.

We have proved its great advantages:

- Performance: decrease surgical waiting lists
- Early Recovery
- Low morbidity
- Economic profitability
- Degree of high patient satisfaction: a high percentage of the patients who would been operated in the same way indicates that the system works properly and inspire enough confidence

We should continue to insist on one aspect: who works in ambulatory surgery must "believe" in it, and this is because issues such as willingness, commitment and dedication of the staff working in MAC units are the pillars of its proper operation.

Laparoscopic incisional/ventral hernia repair in Ambulatory Surgery

Dr. Juan Manuel Suárez Grau

Spain

Laparoscopic hernia surgery in the context of ambulatory surgery is a technique that is still under constant discussion. Despite its minimally invasive approach, postoperative pain is usually the great disadvantage that impedes progress towards ambulatory procedure.

Currently we dispose of excellent technical developments, and highly experienced surgeons for performing advanced laparoscopic surgery in ambulatory surgery units. But there are certain factors that impede this wide development of the ventral hernia laparoscopic approach in ambulatory surgery.

We have already commented postoperative pain (probably the most important factor), we must also highlight the cost of the procedure (requires laparoscopic equipment, meshes designed to contact viscera and fixing methods), and performing the procedure under general anesthesia (this factor has almost no importance).

Although unremarkable, we must also consider the learning curve required for the laparoscopic procedure, not only in the intervention, but patient selection and care for anesthesia and nursing.

There are many positive factors: the good results of the technique (low recurrence rates and very low rates of infection versus open surgery), does not require extraordinary drains or postoperative care (not requiring cures by nurses), improved aesthetics, and when the learning curve culminates surgical times are really comparable to open surgery. **Figure 1**

Technical factors that can be identified with great relevance to implement the use of technology in ambulatory surgery (discussing the advances in the field of surgery laparoscopic ventral hernia and its consequences in relation to the possibilities of including the procedure in Ambulatory Surgery):

1. Correct identification of the type of hernia: The right choice to include in ambulatory surgery is often the primary or recurrent hernia of 3–5 cm in the midline, periumbilical area and upper abdomen area (epigastric and subxiphoid hernias), Spiegel hernias and post-trocar hernias.
2. Correct Patient Selection: ambulatory process candidate, acceptance of the technique.
3. Selection of the technique: transabdominal preperitoneal technique performed in small hernias with self-attached or self-adhesive materials, allow ambulatory process. Primary closure of the defect is a technique that is extensively used and emerging but unfortunately increases postoperative pain in most cases, being a factor against the ambulatory procedure. **Figure 2**
4. Selection of fixation: the new self-gripping self adhesive meshes used in preperitoneal laparoscopic techniques. Alternating absorbable tackers with metal tackers or using glues (fibrin glue or cyanoacrylate) allow spacing tackers and

therefore decreasing the pain. **Figure 3**

5. Choosing the mesh: meshes usually have quite similar behavior in reference to ambulatory procedure, but elastic meshes with large pores and small quantity of material are preferred.
6. Protocolization of analgesia: guidelines for analgesia and intensive prevention of postoperative vomiting intensively to achieve a great improvement within a few hours after surgery.

In our working group we have started using local anesthetic catheters infusers to improve postoperative pain, which is the key to enhance the ambulatory procedure. Our experience has been very favorable. There is a clear reduction in postoperative and discharge pain in cases of hernias larger than 5 cm with primary closure of the defect and almost null in cases of hernias under 5 cm. **Figure 4**

We have not found (clinically and using CT) increased postoperative seroma in those cases we have been involved with this technique.

In summary, laparoscopic hernia surgery is a reality that is looking for its correct location in ambulatory surgery. There are factors, as mentioned, that impedes and promotes their development. Practically all these factors trying to improve postoperative pain leaving on the sidelines other factors that attempt to avoid complications (adhesions, bleeding, infection, seroma) and that have already been obtained extensively in the current laparoscopic surgery. When we can attain an appreciable improvement in the control of pain and immediate postoperative comfort at home, then certainly laparoscopic ventral hernia repair will become a standard procedure in Ambulatory Surgery units.

References

1. Suárez Grau, Juan Manuel, Bellido Luque, Juan Antonio. *Advances in Laparoscopy of the Abdominal Wall Hernia*. Springer (London) 2014. ISBN 978-1-4471-4700-8
2. Moreno-Egea A, Cartagena J, Vicente JP, Carrillo A, Aguayo JL. Laparoscopic incisional hernia repair as a day surgery procedure: audit of 127 consecutive cases in a university hospital. *Surg Laparosc Endosc Percutan Tech* 2008;18(3):267–71.
3. Abdel-Lah O, García-Moreno FJ, Gutiérrez-Romero JR, Calderón F. Initial experience in the laparoscopic repair of incisional/ventral hernias in an outpatient-short stay surgery unit. *Cir Esp*. 2005;77(3):153–8.
4. Moreno-Egea A, Castillo Bustos JA, Aguayo JL. Day surgery for laparoscopic repair of abdominal wall hernias. Our experience in 300 patients. *Hernia* 2002;6(1):215.
5. Bajwa A, Khaira H. Laparoscopic Incisional Hernia Repair reduces length of In-Hospital Stay. *Ambulatory Surgery* 17.4 April 2012.

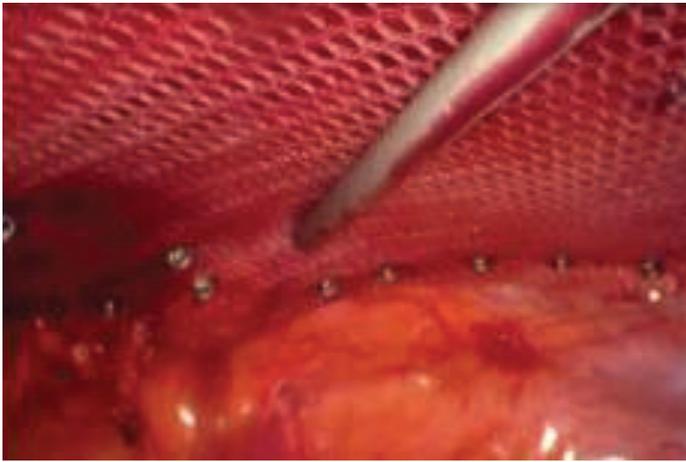


Figure 1: Laparoscopic ventral hernia repair (intrabdominal mesh fixed with tackers).



Figure 3: Inner crown in Laparoscopic Ventral hernia repair using Double Crown Technique, alternating absorbable and metallic tackers.



Figure 2: Primary laparoscopic closure of the defect before placing the mesh. V-lock (barbed) continues suture.



Figure 4: Anesthesia Catheter infuser between the mesh and the defect. The proper placement is around the inner crown.

Raafat S. Hannallah MD

Washington DC, USA

Anesthesia for pediatric ambulatory surgery is safe. Mortality is extremely low in young children; slightly higher in infants and toddlers. Anesthesia-related morbidity varies depending on the physical condition of the child (less than 4/10,000 anesthetics in PS-1 patients) and the type of the surgical procedure. Reasons for improved outcome include the use of safer anesthetic agents, better monitoring, recognition of the special needs of the pediatric patient, better trained pediatric anesthesiologists and better understanding of the high risk patients.

Recently there has been a lot of animal studies and retrospective cohort human reports suggesting a link between exposure to anesthesia and surgery in early childhood and subsequent neurobehavioral outcome. Considerable debate led by the SmartTots project and the FDA in the US continues to examine the question of whether these effects are the result of the anesthetic agents used, or the impairment of the physiological parameters due to inadequate anesthesia management resulting in unrecognized or unreported episodes of intraoperative hypotension or hypoxemia that may give rise to subtle neurological morbidity. It is not clear how frequent these occurrences are since they are not always reported, investigated or even disclosed to parents.

Improving safety of ambulatory surgery requires a recognition that children are not small adults. Children managed by inexperienced practitioners in poorly equipped facilities have higher perioperative morbidity than those managed in specialized centers by properly trained physicians and support staff.

A new Safe Anesthesia for Every Tot initiative (www.safetots.org) was developed to focus on the safe conduct of anesthesia and investigate the impact of such subtle factors as perioperative hypotension, low cardiac output, hypocapnia, hyponatremia and hypoxemia on brain injury and neurodevelopment in infants and small children undergoing ambulatory surgery.

Further Reading

1. Rappaport BA, et al. Anesthetic neurotoxicity-Clinical implications of animal models. *N Eng J Med* 2015;372:796–7.
2. Weiss M, et al. Safe anesthesia for every tot- The SAFETOTS initiative. *Curr Opin Anesthesiol* 2015;28:302–7.

The OSAS Obese Child for Adenotonsillectomy

Raafat S. Hannallah MD

Washington DC, USA

Performance of adenotonsillectomy (T&A) as an outpatient procedure is fairly common in most countries. Most surgeons believe that outpatient adenotonsillectomy is safe and cost-effective and that there is little benefit in keeping these patients in the facility more than a few hours after surgery to ensure control of pain and vomiting; adequate hydration and absence of bleeding.

Recently, however, there have been reports of postoperative apnea and/or airway obstruction in some children after tonsillectomy. Most of those patients are young (less than 3 yr.) and have a documented history of preoperative obstructive sleep apnea syndrome (OSA) or other obstructive phenomena during sleep. Other risk factors include obesity and syndromic children.

Today the majority of children who are scheduled for adenotonsillectomy have symptoms of obstructive breathing, yet only 55% with clinical criteria suggestive of OSA subsequently meet sleep laboratory criteria for OSA. A diagnosis of OSA doubles the likelihood of respiratory complications after adenotonsillectomy from 10% in otherwise healthy children to 20% in those with OSA. These patients have a diminished ventilatory response to CO₂ rebreathing and are at increased risk for developing severe perioperative respiratory complications, possibly including death, after adenotonsillectomy. In extreme cases the airway obstruction can result in pulmonary hypertension and cor pulmonale.

The severity of OSA is assessed by the frequency and severity of the obstructive respiratory events during sleep. Both vary with sleep stage and occur most often during active rapid eye movement (REM) sleep. The presence of sleep disordered breathing is suspected from the history. Less than 20% of children scheduled for ambulatory T&A have their symptoms documented by polysomnography and quantitated by the frequency of obstructive events and by desaturation indices.

Most children with severe OSA continue to suffer from the same, or even worse symptoms in the immediate postoperative period. It is therefore very important that the indication for tonsillectomy (repeated infections versus obstructive symptoms) be carefully reviewed, especially in young or extremely obese patients. For children with severe OSA, the severity of the nocturnal desaturation correlates with the sensitivity to exogenously administered opioids. The severity of OSA predicts the nature of peri-operative respiratory complications and the need for postoperative monitoring in an inpatient setting.

It is concluded that *whereas children undergoing adenotonsillectomy for repeated infections or obstructive breathing without apnea may undergo ambulatory surgery, those with severe OSA should not.* Postoperative observation in a 23-hr. recovery facility is appropriate for patients with mild obstructive symptoms. Inpatient care or even ICU admission for airway support may be required in those with documented severe OSAS.

Preparing the Patients for Ambulatory Surgery

Helle Hartvig

Denmark

“How to prepare the patient to feel secure through the daysurgery pathway.”

The point is to focus in safe discharge from hospital in the first meeting with the patient when it is decided that the patient needs surgery.

The lecture is pinpointing some of the important issues to achieve satisfyingly cooperation and compliance in the day surgery pathway

Ambulatory Surgery in the World – Worldwide Scenario

Dr Ian Jackson

UK

The IAAS has traditionally attempted to gain day surgery activity information for a standard set of procedures. It has been difficult to gain information on ambulatory surgery activity from member countries and in the last survey only 6 countries (which included both Scotland and England reporting separately) provided information [1]. This is a challenge that the IAAS believes needs addressing as measurement of improvement over time would provide us with valuable information on where to focus our resources in helping countries improve their performance.

We know that the overall amount of money invested in Health and percentage of Gross Domestic Product spent on Healthcare has dropped in many countries and growth in Healthcare spending has fallen in all OECD countries. [2,3] This is particularly true in Europe where health spending continued to fall in 2012 in Greece, Italy, Portugal, Spain, Hungary and the Czech Republic. In contrast Chile, Mexico and Korea have continued to grow at rates of between 6-8% and the United States as seen growth of around 2%.

This information is important when linked to ambulatory surgery performance as we know we can help countries become more efficient by reducing lengths of stay and increasing ambulatory surgery rates. We are now looking to work with the OECD to see if we can get further yearly information on ambulatory surgery performance across their member countries. The IAAS has also been running Train the Trainers courses for many countries that currently have low ambulatory surgery rates across Europe. We must now look to work further with these countries to help them introduce high quality ambulatory surgery.

References

1. Survey on incidence of surgical procedures and percentage of ambulatory surgery in 6 European countries. Brökelmann JD, Toftgaard C. *Ambulatory Surgery* **19.4** November 2013.
2. OECD health Indicators at a Glance 2013. <http://www.oecd.org/els/health-systems/Health-at-a-Glance-2013.pdf>
3. OECD Health Statistics 2014. <http://www.oecd.org/els/health-systems/>

Human Factors in Patient Safety

Dr Ian Jackson
UK

Patient safety is critical to the running of an efficient high quality ambulatory surgery service. It is important that we recognise that we can all make mistakes and that there are certain situations that make this more likely to occur. Human Factors encompass all those factors that can influence people and their behaviour. In a work context, human factors are the environmental, organisational and job factors and individual characteristics which influence behaviour at work.

Consider 2 main points to put this in context

1. The extent of the problem
2. The mistakes you make outside of work

The extent of the problem

In the UK it has been calculated that around 10% (around 900,000) of our patients admitted to hospital experience a 'harm event'. Many of these will be minor (e.g. missed non-essential drug) however these incidents are major contributors to the death of around 72,000 patients per year [1]. There is evidence that this is similar in the United States and all other countries.

The mistakes you make outside work

- Have you ever
- Put the wrong fuel in the car?
- Sent an email to the wrong person by mistake?
- Sent an email without the desired attachment?
- Deleted the wrong document?
- Locked yourself out (house or car)?
- Left the house and forgotten to lock the door?

If you consider this list honestly I am certain you will have done at least one of these.

Human Factors considers the situations that increase the likelihood of us making mistakes and understanding this helps us put in place checks that help us and our colleagues do the right thing every time. It also looks to break down barriers to communication – it is a sad fact that in many medical mishaps there were people in the room at the time that knew a mistake was being made or knew what needed to be done to save the situation. However they felt too junior or 'insignificant' to speak up.

We also know that mistakes are more likely in the following situations

- You are suffering from fatigue
- Stress, anxiety, fear
- Competing demands
- Environmental conditions
- Clutter, motion, poor lighting, noise
- Too many handoffs
- Shift work

I suggest that ambulatory surgery has many of the above issues and so we must look to design out systems to protect our patients and also protect our staff. Excellent information on how to consider this further within your unit can be found on the UK based Patient Safety First website [2].

References

1. Department of Health (2000). Organisation with a memory. The Stationery Office, London.
2. Patient Safety First. <http://www.patientsafetyfirst.nhs.uk/Content.aspx?path=/interventions/humanfactors/>

New Activities to the IAAS Basket

Dr Ian Jackson
UK

The IAAS basket of procedures was first introduced by Claus Toftgaard in 1998 [1] and the IAAS has attempted to run an international audit of ambulatory surgery using this basket every 2 years. The last audit was completed by Jost Brökelmann [2] and only 6 out of 22 member countries were able to report information (5 if we combine England and Scotland). We have therefore started to look at how we can work with other organisations to establish data on ambulatory surgery performance.

Dr Jackson will present the latest information in our quest to get useful information on ambulatory surgery performance including

potentially working with the Organisation for economic Co-operation and Development (OECD) and with the London School of Economics.

References

1. Day Surgery Activities 2009. International Survey on Ambulatory Surgery conducted 2011. Toftgaard, Claus. *Ambulatory Surgery* 17.3, January 2012.

Survey on incidence of surgical procedures and percentage of ambulatory surgery in 6 European countries. Brökelmann JD, Toftgaard C. *Ambulatory Surgery* 19.4 November 2013.

The Adult Obese Patient With OSA: Selection Criteria

Girish P. Joshi MBBS, MD, FFARCSI

Professor of Anesthesiology and Pain Management, University of Texas Southwestern Medical Center, Dallas, Texas, USA

The prevalence of obesity and obstructive sleep apnea (OSA) is increasing exponentially worldwide. Obesity and OSA are of particular concern to anesthesiologists, as they are associated with increased perioperative complications. There is an uncertainty amongst anesthesiologists, who must determine suitability for ambulatory surgery in this patient population. This article discusses the approach to determining suitability of obese and OSA patients scheduled for day surgery.

The prevalence of obesity is increasing exponentially worldwide. Pathophysiological changes associated with obesity influence multiple organs and increase the risk of comorbidities [1, 2]. With increase in the prevalence of obesity, there is a parallel increase in the prevalence of obstructive sleep apnea (OSA) [3]. Obesity and OSA are of particular concern to anesthesiologists, as they are associated with increased perioperative complications [4, 5]. Nevertheless, obese and OSA patients are increasingly being scheduled to undergo day surgery. For day surgery to be safe and efficient, careful selection of patients and procedures is crucial. However, there is an uncertainty amongst anesthesiologists, who must determine patient suitability for ambulatory surgery. This article discusses the approach to determining suitability of obese and OSA patients scheduled for day surgery.

Discussion

Clearly, identifying suitability for an day surgery is a dynamic process that depends on a complex interplay between surgical procedure, patient characteristics, expected anesthetic technique (e.g., local/regional vs. general anesthesia), and social factors, as well as the ambulatory facility setting based upon the availabilities of personnel and equipment. Although it may be difficult to quantify, appropriateness of patient selection may also depend on the experience and skill of the surgeon and the anesthesiologist. Therefore, attempts to address individual factors without consideration of others is fraught with flaws.

The literature on optimal patient selection for ambulatory surgery is sparse and of limited quality. Most studies have used the incidence of morbidity and mortality, cancelation of surgery, delayed surgical start, delayed recovery and discharge home, unplanned admission, and readmission after discharge home to determine appropriate patient selection. Several studies have identified obesity, which is associated with an increased prevalence of comorbidities, as a risk factor for perioperative complications after ambulatory surgery [6, 7]. Thus, one of the clinical questions posed with respect to selection of obese patients for ambulatory surgery is: Is there a weight (or BMI) limit above which ambulatory surgery is not appropriate?

A systematic review revealed that BMI alone did not influence perioperative complications or unplanned admission after ambulatory surgery [8]. Although all the studies included in this systematic review were observational, they were representative of broad clinical practice and included both bariatric and non-bariatric surgical procedures. This systematic review revealed

that there was a conservative approach to patient selection for non-bariatric surgical procedures, as the average BMI was only 30 kg/m². In contrast the patients undergoing bariatric surgery had a BMI of around 40 kg/m², which is known to have a higher burden of comorbid conditions including obstructive sleep apnea (OSA). However, the bariatric surgical population had rigorous preoperative evaluation and optimization of comorbid conditions.

Although weight or BMI should not be the sole determinant of patient selection for ambulatory surgery, patients with BMI of less than 40 kg/m² may be suitable for ambulatory surgery assuming that their comorbid conditions, if any, are optimized [8]. Also, it is necessary to consider the presence of sleep disordered breathing (i.e., OSA and obesity-related hypoventilation syndrome), as it has been associated with increased perioperative complications [9]. The super obese (i.e., BMI >50 kg/m²) should be chosen carefully as they have higher incidence of perioperative complications. For patients with BMI between 40 and 50 kg/m², thorough preoperative assessment is necessary to identify obesity-related comorbid conditions (e.g., OSA, obesity-related hypoventilation syndrome, and pulmonary hypertension, as well as resistant hypertension, coronary artery disease, and cardiac failure).

Similar to obesity, suitability of ambulatory surgery in patients with known or suspected OSA remains controversial. The ASA recently published updated guidelines regarding perioperative management of OSA patients, including selection for ambulatory surgery [10]. Of note, the previous recommendation that ambulatory surgery is not recommended in OSA patients undergoing airway surgery or upper abdominal surgery has been eliminated [10]. The ASA guidelines also propose a scoring system, based on the severity of OSA, the invasiveness of the surgery, the type of anesthetic technique, and the need for postoperative opioids, that may be used to estimate whether an OSA patient is at increased risk of perioperative complications, and thus determine the suitability for ambulatory surgery. However, clinical utility of this scoring system is questionable, as it has not yet been validated.

A systematic review of published literature assessing perioperative complications in patients with OSA undergoing ambulatory surgery revealed that OSA patients with inadequately treated co-morbid conditions are not suitable for ambulatory surgery [9]. Based upon this systematic review, the Society for Ambulatory Anesthesia (SAMBA) consensus statement recommends that patients with a known diagnosis of OSA, who are typically prescribed positive airway pressure [PAP] therapy, may be considered for ambulatory surgery if their comorbid medical conditions are optimized and they are able to use a PAP device in the postoperative period. It appears that postoperative PAP therapy may be protective against opioid-induced respiratory complications. On the other hand, patients who are unable or unwilling to use PAP device after discharge may not be appropriate for ambulatory surgery. Patients with a presumed diagnosis of OSA, based on screening tools such as the STOP-Bang questionnaire, can be considered for ambulatory surgery if their comorbid conditions are optimized

and if postoperative pain relief can be provided predominantly with non-opioid analgesic techniques. It is also recommended that a screening tool be incorporated in a routine preoperative evaluation. The STOP-Bang questionnaire is simple to use; however, it is recommended that a higher 'cut-off' (e.g., ≥ 5 or 6 positive indicators) should be used to determine presumption of OSA, rather than the original suggestion of a 'cut-off' of ≥ 3 [9].

Of note, the SAMBA consensus statement did not provide any guidance for OSA patients undergoing upper airway surgery due to limited evidence [9]. However, there is some recent evidence suggesting that airway surgery in this patient population can be performed in an ambulatory setting with complication rates similar to the inpatient population [11, 12]. A recent systematic review of 18 publications with 2160 patients assessed postoperative complication rates after OSA surgery performed on same day basis [12]. There were no deaths or major catastrophic events. The overall incidence of any adverse event was 5.3%, with the respiratory-related events rate of less than 1.5%. Most of the respiratory events were related to oxygen desaturations, which were not clinically significant. Exclusion of oxygen desaturation significantly reduced the overall adverse event rates. All the adverse events were related to the surgical procedure and not specifically to OSA. The re-admission rate was only 0.4%. The author concluded that OSA surgery performed on outpatient basis is generally safe and routine hospital admission is not necessary, except for patients undergoing tongue base surgery, those with a higher preoperative apnea/hypopnea index, or those with high postoperative opioid requirements. Other studies have also reported that most serious airway complications occur early after surgery (i.e., within 2 to 3 hours postoperatively) [13]. Potential postoperative complications include airway obstruction, post-obstructive pulmonary edema, and cardiac arrhythmia.

Conclusion

In summary, obese patients, particularly those with OSA, are at a high risk of perioperative complications that might last for several days after surgery. Because undiagnosed OSA is common and failure to recognize OSA preoperatively is one of the major causes of perioperative complications, preoperative evaluation should include assessment for OSA. Finally, developing and implementing protocols (clinical pathways) is the best way to avoid adverse events and improve postoperative outcome.

References

1. Cullen A, Ferguson A: Perioperative management of the severely obese patient: a selective pathophysiological review. *Can J Anaesth* 2012;**59**:974–96.
2. Chau EH, et al: Obesity hypoventilation syndrome. A review of epidemiology, pathophysiology, and perioperative consideration. *Anesthesiology* 2012;**117**:1–18.
3. Peppard PE, et al: Increased prevalence of sleep-disordered breathing in adults. *Am J Epidemiol* 2013;**177**:1006–14.
4. Joshi GP: Patients with obstructive sleep apnea for ambulatory surgery: challenges and management. *Curr Anesthesiol Rep* 2014;**4**:284–9.
5. Adesanya AO, et al: Perioperative management of obstructive sleep apnea. *Chest* 2010;**138**:1489–98.
6. Mathis MR, et al: Patient selection for day case-eligible surgery: identifying those at high risk for major complications. *Anesthesiology* 2013;**119**:1310–21.
7. Whippley A, et al: Predictors of unanticipated admission following ambulatory surgery: a retrospective case-control study. *Can J Anaesth* 2013;**60**:675–83.
8. Joshi GP, et al: Selection of patients with obesity undergoing ambulatory surgery: a systematic review of the literature. *Anesth Analg* 2013;**117**:1082–91.
9. Joshi GP, et al: Society for Ambulatory Anesthesia (SAMBA) consensus statement on preoperative selection of patients with obstructive sleep apnea scheduled for ambulatory surgery. *Anesth Analg* 2012;**115**:1060–8.
10. Gross JB, et al: Practice guidelines for the perioperative management of patients with obstructive sleep apnea. An updated report by the American Society of Anesthesiologists task force on perioperative management of Patients with obstructive sleep apnea. *Anesthesiology* 2014;**120**:268–86.
11. Mahboubi H, Verma SP: Ambulatory laryngopharyngeal surgery: evaluation of the National Survey of Ambulatory Surgery. *JAMA Otolaryngol Head Neck Surg* 2013;**139**:28–31.
12. Rotenberg B: Early perioperative outcomes after surgery for sleep apnea: a current review of the literature. *Curr Anesthesiol Rep* 2014;**4**:10–8.
13. Spiegel JH, Raval TH: Overnight hospital stay is not always necessary after uvulopalatopharyngoplasty. *Laryngoscope* 2005;**115**:167–71.

CO₂ Laser in ENT Ambulatory Surgery

Juan Chamizo Jurado, Enrique Gonzales, Ana Vilas Melero, Josep. Ibanez Romagosa, Josep. Fuentes Cabrera, Juan Fernando, Casamitjana Claramunt, Josep Francesc (Spain)

The purpose is to explain the advantages of CO₂ laser in ENT outpatient surgeries, especially in the area of the pharynx and larynx and including surgical oncology.

The meaning of laser is "Light Amplification by Stimulated Emission of Radiation". The scientific basis is known thanks to the work of Albert Einstein, although the first laser prototype was created in 1960 by Maser. A few years later, in 1963, the CO₂ laser, the most important but not the only one used in ENT is built. After a few years, in 1972, it is first reported a transoral laser surgery for glottic cancer treatment.

To produce a laser beam, a specific material in a cavity is required, and reflective coating with a small hole. Energy is applied to stimulate electrons of that material and thus photons are produced.

There are several differences compared to the normal light. First, since it is a monochromatic light, certain type of material will absorb energy produced better or worse. Second, it is a collimated light, which allows for greater range of light produced. Third, it is consistent, so the absence of dispersion can form a laser beam.

The type of laser depends on the material, with almost infinite possibilities. Lasers used in medicine are those in visible and infrared light, and the most common ENT lasers are the KTP, pulsed dye, CO₂ and diode laser.

We divide the indications by the area to be treated.

The use of CO₂ laser in surgery of the ear is very limited in outpatient treatment. In the salivary glands there isn't benefit in the literature by using CO₂ laser, either.

In nasal surgery, you can use the CO₂ laser but the biggest advantage is with the diode laser. Turbinectomy can be done ambulatory, both CO₂ laser and diode laser. Endonasal dacryocystorhinostomy with diode laser is a technique that can be performed even under local anaesthesia, ideal for outpatient procedures.

The pharynx and larynx are where the CO₂ laser is most useful. Pharynx and oral cavity benign lesions can be vaporized even under local anaesthesia. In OSAHS adult surgery, laser allows uvullectomy. In the tonsillar hypertrophy, however, is where the CO₂ laser has the highest utility. It allows to safely treating upper obstruction with much less pain and with a very low risk of bleeding, making it in the technique of choice.

In the larynx, the CO₂ laser is used to remove benign lesions as well as to treat small carcinomas (T1), rescue or revision surgeries and outpatient procedures.

The advantages are less operative bleeding, less damage than electrocautery or radiotherapy in nearby tissues, and the chance of intraoral closed laryngeal surgery. The disadvantages are the low haemostatic power for large vessels, a strict security protocol and the learning step. Images of lesions of the oral cavity, pharynx and larynx and surgical videos are displayed.

Results in our Hospital

Partial tonsillectomy for OSA is the most often ENT surgery in our outpatient procedures.

In our centre there is an experience of 5 years (since January 2009), with an improvement in symptoms and sleep apnea higher than 90%, a rate of postoperative bleeding less than 1%, readmission rate of 0% and reoperations (by regrowing of tonsil left) below 1%. After learning step surgical time decreases from 50 to 20 minutes. The transoral laser CO₂ surgery for glottic cancer in early stages (T1-T2) is the technique of choice. Fewer complications compared to electrocautery, and the cost is less than radiotherapy. Control of the disease in T1 stage is between 85 to 100% (in our centre above than 90%).

Conclusions

The CO₂ laser is a very effective therapeutic tool in the ENT area that gives more security and less postoperative pain. It is particularly useful in ambulatory surgery in the oral cavity, pharynx and larynx in benign processes, treatment of OSAHS by tonsillar hypertrophy and laryngeal neoplasms in initial stages.

References

1. Maiman, T.H. Stimulated optical radiation in ruby. *Nature* 1960; **187** (4736):493-4
2. Altuna Mariezkurrena XI, Henríquez Alarcón M, Camacho Arrioga JJ, Algaba Guimerá J. Laser cordectomy without hospitalization. Is it a safe intervention? *Acta Otorrinolaringol Esp* 2003; **54**(9):635-41.
3. Kujath M et al. Functional outcomes and laryngectomy-free survival after transoral CO₂ laser microsurgery for stage 1 and 2 glottic carcinoma. *J Otolaryngol Head Neck Surg* 2011; **40** Suppl 1:S49-58.
4. Krespi YP, Ling EH. Laser-assisted serial tonsillectomy. *J Otolaryngol*. 1994; **23**(5):325-7.
5. Rathfoot CJ, Coleman JA. Laser utilization in the oral pharynx. *Otolaryngol Clin North Am* 1996; **29**(6):963-72.
6. Unkel C, Lehnerdt G, Schmitz KJ, Jahnke K. Laser-tonsillotomy for treatment of obstructive tonsillar hyperplasia in early childhood: a retrospective review. *Int J Pediatr Otorhinolaryngol* 2005; **69**(12):1615-20.
7. Coromina Isern Jordi, Esteller Moré Eduard. Técnicas actuales de cirugía adenoamigdalares en los trastornos respiratorios del sueño de los niños. *Acta Otorrinolaringol Esp* 2010; **61** (Supl 1):60-8.

Preparing the Patients for Ambulatory Surgery from Finland

Siik Kirsti

Vice-chair, Finnish Association of Day Surgery

Day surgery has increased since the change of millennium in Finland. In 2013 approximately 45% of elective surgery was done on a day-case basis. However, there is wide variation between the hospital districts in the number of day surgeries. The share of day surgery at central and university hospitals varied between 38% and 65%.

This presentation is based on the answers collected from five Finnish hospitals. Ambulatory surgery is organized differently in each one of them. There might be many nurses, from many departments, taking part in the ambulatory surgery process. Due to differences in the functions, structures, and traditions, the role of the nurses varies between the hospitals. The nurse plays a major part in ensuring that the day surgery process is successful and safe. The most important elements in the role of the nurse are to conduct a thorough preoperative assessment, make appropriate patient selection and to provide complete preoperative and postoperative instructions. In addition the nurse has a big responsibility coordinating the patient's care, and to give the support the patient needs. The nurse does all this during the ambulatory process. On the operating day and in the operating room the nurse has also many roles. The nurse takes care of the patient safety by identifying the patient and the site of surgery. As a member of the operating team, the nurse takes care of the patient during the operation.

There are many important areas in the patient education before the operation. First of all, the patient needs to know what it means to be a day surgery patient. The patient needs to know the date, time and place where to arrive for operation. They are not allowed to smoke for at least for 12 hours and alcohol use is denied for 24 hours before the surgery. The patient is not allowed to eat or drink after midnight before the surgery. This is done to prevent possible nausea and vomiting after the surgery and troubles during the surgery. The nurse must provide clear guidelines for any changes to patient's current medication schedule or dosing. They are not allowed to take any aspirin

or blood thinners for a week before the surgery. During the intermission there might be a bridging therapy. The patients should bring all their medication that they use with them to the hospital. The patient needs to take a shower on the evening before the surgery. The surgery area should be washed well and the skin should be in good condition. There should not be any wounds, cuts or rashes on the surgery area or near it. The patients are advised to remove their nail polish and artificial nails are not recommended. All jewelry should be left home. If the patient has a cough, flu, fever or any other factor affecting their health, they are advised to be in contact with the hospital.

After the surgery the patients are not allowed to drive a car or take public transportation. There must be an adult person with the patient during the first day and night. To prepare the patient for the discharge, it is important to spend time with them to ensure they understand their home care instructions and that they feel confident and ready to manage their care at home. All home care instructions are given both verbally and in writing. The instructions include a brief explanation of the procedure that was done and why the procedure is usually carried out. They include wound care, when the dressings may be removed and how the dressing should be replaced after the dressing has been removed. The patients should receive a plan for their pain medication. They are informed how to look for any complications i.e. wound infections, and where to seek help when needed.

References

1. Rainio J & Rätty T.. 2015. Somaattinen erikoissairaanhoido 2013. Tilastoraportti. PDF. http://www.julkari.fi/bitstream/handle/10024/125551/Tr01_15_raportti_fi_sv_en.pdf?sequence=4
2. Nurses from Day Surgery Units from Vantaa, Espoo, Vaasa, Tampere and Valkeakoski.

Nursing Competencies in Ambulatory Surgery: A New Zealand View

Maria Cruz Ruiz Laconcepción

Charge Nurse Operating Rooms, ADHB, New Zealand

Introduction

It is the level of competency of the staff members and not the physical structure or the quality of the equipment that is what will determine the success of a day-surgery service (Castoro et al., 2007). Nurses play an important role in maintaining the health and wellbeing of patients in day surgery. Providing quality care in a safe manner is a priority in nursing. Quality and safety are the cornerstones of best practice for ensuring that patients receive the care and treatment necessary to maintain or improve their health status. Patients have a right to be cared for by appropriately qualified and experienced staff in safe environments.

Ensuring that nurses have the right skills and experience is fundamental to the delivery of care. For that reason competencies that describe the skills and knowledge expected of nurses have been developed. Setting up standards and ensuring that nurses are competent to practice protects the health and safety of the public.

Summary

In our ambulatory surgical units, nurses have a greater responsibility to improve the health of the patients that we serve. Nurses are important in sustaining quality and a safe healthcare environment. To practise safely, nurses are expected to meet the competencies that the Nursing Council has developed. These competencies describe the skills and knowledge expected of nurses registered in each scope of practice.

Nurses are expected to practise in a manner that the health consumer determines as being culturally safe regardless of age or generation; gender; sexual orientation; occupation and socioeconomic status; ethnic origin or migrant experience; religious or spiritual belief; and disability. New Zealand is a bicultural country where Maori, who are the indigenous people of New Zealand, and non-Maori people live together. Two cultures are living side by side, respecting and embracing each other's beliefs, identity, culture and traditions. Nurses are required to work in partnership with Maori, protecting them and participating in the many aspects of their health and well-being.

Nurses are expected to reflect each year on whether they meet these competencies, at the time when they make their annual declaration. They will be assessed against these competencies at least every three years. The role of the New Zealand Nursing Council is to protect the health and safety of the public by setting standards and ensuring that nurses are competent to practice.

The Council and the public expect that all nurses will continue to learn and to maintain their competencies to be able to provide quality and safe care. It is the professional responsibility of all practicing nurses to maintain their competence to be able to practice. As a nurse you are professionally responsible for meeting those competencies.

References

- Auckland District Health Board (2014) *Bicultural policy*
- Auckland District Health Board (2013) *Tikanga Best Practice*
- Auckland District Health Board (2012) *Treaty of Waitangi*
- Castoro, C., Baccoglioni, U., Drace, C. & McKee, M. (2007) *Policy Brief: Day Surgery: Making it Happen*. World Health Organisation European Centre for Health Policy. Brussels
- Health Quality and Safety Commission New Zealand (2012) *Describing the quality of New Zealand's health and disability services. Developing our Health Quality and Safety Indicators*
- Ministry of Health and Consumer Affairs Spanish National Health System (2008) *Day surgery Unit: Standards and Recommendations*
- Nursing Council of New Zealand (2012) *Code of conduct for nurses*
- Nursing Council of New Zealand (2012) *Competencies for registered nurses: Regulating nursing practice to protect public safety*
- Nursing Council of New Zealand (2013) *Framework for the approval of professional development and recognition programmes to meet the continuing competence requirements for nurses*
- Nursing Council of New Zealand (2011) *Guideline: Expanded practice for Registered Nurses Regulating nursing practice to protect public safety*
- Nursing Council of New Zealand (2009) *Guidelines for Cultural Safety, the Treaty of Waitangi and Maori Health in Nursing Education and Practice*

Organizational Structure in a Day Surgical Unit: A New Zealand Perspective

Maria Cruz Ruiz Laconcepción

Charge Nurse Operating Rooms, ADHB, New Zealand

Introduction

The efficient and effective management and leadership of a day surgery unit is critical to the delivery of a high standard of quality of care. A good understanding of the roles, functions and responsibilities of all of the members in the multidisciplinary team will make the unit function smoothly and as intended. Members of the surgical team, functions, processes, etc vary between units and countries. This presentation will give you some insight into the structure of the day surgical unit in New Zealand.

Summary

It is the leadership and management as well as staff members that determine the success of a day-surgery service (Castoro et al., 2007). Success requires the implementation of policies that extend all of the advantages of day surgery to the patient, the health care professional and the community at large.

Leadership is needed at all levels of the day-surgery unit. Strong management of day surgery is vital at both the clinical and managerial levels. Day surgery needs a rigorous management structure, including a clinical director a theatre manager and an operational group. A critical success factor seems to be the maintenance of a high level of communication between the manager and the health professionals working in the facility (Castoro et al., 2007).

Day surgery requires a multidisciplinary approach. For a positive outcome it requires active participation by all players. Apart from surgeons and anaesthetists, personnel include: Nurses, anaesthetic technicians, healthcare assistants, team administrator, receptionists and schedulers. The reporting lines of all day surgery staff members should be clearly defined. Nurses, healthcare assistants and anaesthetic technicians report to their respective supervisors from the senior team. The senior team consists of charge nurses, nurse co-ordinator, charge anaesthetic technician and nurse educator. This team provides clinical leadership to the staff and support to the clinical director and manager.

A full understanding of each other roles and responsibilities is fundamental for good team work. In addition to the clinical roles, staffing takes into account the essential non-clinical roles that keep the department running effectively, for example infection control, health and safety and some projects being carried out in the unit.

New staff need to become familiar with and socialised to their new area. During the initial supernumerary period new staff are provided with a structured support and guidance with preceptors to ensure that they develop and demonstrate the necessary skills and competencies to meet patient care needs in a safe, competent and culturally responsive manner.

The introduction of new graduate programmes has been an important step towards ensuring support for new graduates in their transition to clinical practice. The new graduate programme is designed to build on a sound knowledge base in order to support

a smooth transition into team roles and clinical practice. (Auckland District Health Board, 2009). The support to the ongoing development of the accounting staff ensures they are professionally up-to-date and make a fuller contribution to the service.

Therefore, the efficient and effective leadership and management structure of day surgery is crucial for success. A good understanding of each other roles and having well supported staff is equally important for the delivery of the best quality of care.

References

1. Auckland District Health Board (2009) *Nurses Clinical Workload Sharing & Orientation for Nurses & Midwives*
2. Auckland District Health Board (2010) *Nursing Familiarisation & Clinical Skills Workbook*
3. Auckland District Health Board (2009) *Welcome to Nurse Entry to Practice Programme (NETP) & NETP Expansion*
4. Castoro, C., Baccoglini, U., Drace C. & McKee, M. (2007) *Policy Brief: Day Surgery: Making it Happen. World Health Organisation European Centre for Health Policy. Brussels*
5. Committee of Inquiry (2006) *Report of the Safe Staffing/ Healthy Workplaces*
6. The British Association of Day Surgery (2011) *Day Case and Short Stay Surgery*
7. Department of Health (2002) *Day surgery: Operational Guide. Waiting, Booking and Choice*
8. Perioperative Care Collaborative (2007) *Optimising the Contribution of the Perioperative Support Worker*

Sutureless Small Incision Extracapsular Cataract Surgery in Outpatient Surgery

M. Lecumberri, C. Moser, R. Gosalvez, M. Ferran, M. Garat

Spain

Introduction

Cataract is defined as the opacification of the crystalline lens of the eye which prevents clear vision. Nowadays, 33% of visual impairment in the world is due to cataract. Cataract remains the leading cause of blindness in low income countries: 51% of world blindness, which represents about 20 million people. Cataract is the leading cause of avoidable blindness in the world.

Summary

Nowadays we have three main different approaches to perform cataract surgery: Phacoemulsification, Extracapsular extraction and Sutureless small incision extracapsular extraction (SSIEE).

In developed countries, phacoemulsification with intraocular lens implantation is the most widely used technique. However, we still find a small group of patients with very advanced or mature cataracts in which phacoemulsification would not be indicated. In this group of patients we usually perform SSIEE.

This technique (SSIEE) is also the most widely used in the underdeveloped world, where there is a high prevalence of blinding mature cataracts, with excellent outcomes in terms of restoration of vision and low cost.

We present the complete pathway from the moment the patient arrives to our outpatient clinic where we evaluate and diagnose his mature cataract, throughout the preoperative workup, surgical procedure and postoperative follow-up until the patient is discharged with vision restored. We also show the surgical technique.

References

1. Hennig A, Kumar J, Yorston D, Foster A. Sutureless cataract surgery with nucleus extraction: outcome of a prospective study in Nepal. *Br J Ophthalmol* 2003;**87**:266–70.
2. Hennig A et al. World Sight Day and cataract blindness. *Br J Ophthalmol* 2002;**86**:830–1.
3. Ruit SPG, Gurung R, Tabin G, Moran D, Brian G. An innovation in developing world cataract surgery. *Clin Exp Ophthalmol* 2000;**28**:274–279.
4. Ng JQ, Morlet N, Bulsara MK, JB Semmens. Reducing the risk for endophthalmitis after cataract surgery: population-based nested case-control study: endophthalmitis population study of western Australia sixth report. *J Cataract Refract Surg* 2007;**33**(2):269–80.
5. Kamalrajah S, Ling R, Silvestri G, Sharma NK, Cole MD, Cran G, RM Best. Presumed infectious endophthalmitis following cataract surgery in the UK: a case-control study of risk factors. *Eye* 2007;**21**(5):580–6.
6. Garat M, Moser CL, Alonso-Tarrés C, Martín-Baranera M, Alberdi A. Intracameral cefazolin to prevent endophthalmitis in cataract surgery: 3-year retrospective study. *J Cataract Refract Surg*. 2005;**31**(11):2230–4.
7. Garat M, Moser CL, Martín-Baranera M, Alonso-Tarrés C, Alvarez-Rubio L. Prophylactic intracameral cefazolin after cataract surgery: endophthalmitis risk reduction and safety results in a 6-year study. *J Cataract Refract Surg*. 2009;**35**(4):637–42. doi: 10.1016/j.jcrs.2008.12.023.
8. Schroeder B. Sutureless cataract extraction: complications and management; learning curves. *Comm Eye Health J* 2003;**16**(48):58–60.

Quality Monitoring Based on Clinical Data: Clinical Indicators for Ambulatory Surgery

Paulo Lemos MD

Clinical Chief of Anaesthesiology at Centro Hospitalar do Porto, Porto, Portugal, President of the Portuguese College of Anaesthesiology, Past-President of the Portuguese Association for Ambulatory Surgery (APCA), Past-President of the International Association for Ambulatory Surgery (IAAS)

Clinical indicators are norms, criteria, standards and other direct qualitative and quantitative measures used in determining the quality of healthcare. They attempt to describe the effects of care on the health status of patients and populations. They should be easy to define and analyse, be valid and reliable, and the indicator measured should occur with some frequency and reflect an important aspect of quality.

To have an overall overview of quality issues, the Day Surgery Data Project (DSDP), the European project financed by the European Union, identified different dimensions of performance on AS, such as, Input, Patients Characteristics, Access, Process, Output, Outcome, Safety, Satisfaction / Responsiveness and Cost / Productivity. The related indicators trying to evaluate AS services in an unit level, where divided in a list of essential (Table 1) and ideal indicators (Table 2).

These indicators were based on the definitions proposed by IAAS for Ambulatory Surgery / Day Surgery, Office Based Surgery and Short Stay Surgery and the list of basket procedures that should be considered when reporting at international level (Table 3).

DSU Day Surgery Unit

Table 3: DSDP list of basket procedures based on the OECD Surgical Procedures

Finally, DSDP has developed Essential (Table 4) and Ideal (Table 5) sets of Indicators for National / Regional Level, as well, with the special purpose to allow comparisons of performance across countries.

Further Reading

Day Surgery Data Project. Final Report, 2012. (<http://www.dsdp.eu>)

Lemos P, Barros F (2011). Outcome measures. In: *Day Case Surgery*, Smith I, McWhinnie D, Jackson I (eds), Oxford University Press (OUP), United Kingdom. Chap 16.

Lemos P, Regalado AM (2006). Patient Outcomes and clinical indicators for ambulatory surgery. In: Lemos P, Jarrett P, Philip B, eds. *Day Surgery, Development and Practice*, International Association for Ambulatory Surgery, Porto. Chap 12.

Australasian Clinical Indicator Report 2006-2013, 15th Edition (<http://www.achs.org.au>)

Table 1: Essential set of AS indicators at a DSU Level.

| | |
|---|---|
| Access | Median waiting time for overall list of basket procedures and for each basket procedure |
| Process | % of patients who have received a pre-anaesthesia assessment before AS |
| Output | Number (and % for non-freestanding units) of elective surgery performed as AS for the overall list of elective basket procedures and each elective basket procedure |
| Outcome | Case fatality ratio within 30 days for patients undergoing any of elective basket procedure % unplanned overnight admission % unplanned re-admission to hospital or acute care facility within 7 days |
| Safety | % of AS admissions who experienced wrong site, wrong side, wrong patient, wrong procedure, or wrong implant % of surgical wound infection |
| Patient' Satisfaction and Responsiveness | % of patients overall satisfied |
| Cost and Productivity | % cancellations of surgical procedures without notification by the patient ("failed to arrive" or "did not attend") % cancellations of the booked procedure after arrival at DSU |

DSU Day Surgery Unit

Table 3: DSDP list of basket procedures based on the OECD Surgical Procedures.

| | |
|--------------------|--|
| 13.1 – 13.7 | Cataract surgery |
| 28.2 – 28.3 | Tonsilectomy with or without adenoidectomy |
| 38.5 | Ligation / stripping of varicose veins |
| 51.23 | Laparoscopic cholecystectomy |
| 53.0 – 53.1 | Inguinal and femoral hernia |
| 60.2 | Prostatectomy (transurethral) |
| 68.51 | Hysterectomy (vaginal only) |
| 85.21 | Breast conserving surgery |
| 85.4 | Mastectomy |
| 80.26 | Knee arthroscopy |

Finally, DSDP has developed Essential (Table 4) and Ideal (Table 5) sets of Indicators for National / Regional Level, as well, with the special purpose to allow comparisons of performance across countries.

Table 2: Ideal set of AS indicators at a DSU Level.

| | |
|--|---|
| Input | Number and % of AS beds / total surgery beds (for non-freestanding units) |
| Access | Median waiting time for each basket procedure in DSU |
| Process | % of patients with standardized preoperative evaluation and tests % of patients who have received a pre-anaesthesia assessment before AS |
| Output | Number of interventions per each basket procedure and overall basket procedures per year % of elective surgery performed as AS by each basket procedure and overall basket procedures (for non-freestanding units) |
| Outcome | Case fatality ratio within 30 days for patients undergoing any of elective basket procedure % unplanned overnight admission by cause: surgical anaesthetic / medical social / administrative % unplanned returns to the operating room within 24 hours % unplanned re-admission to hospital or acute care facility: within 24 hours within 7 days |
| Safety | Surgical and anaesthesiological adverse events in percentages: postoperative bleeding requiring treatment within 2h and 24h unplanned transfusion cardiopulmonary arrest nausea not controlled within 2h and 24h pain not controlled within 2h and 24h % of DSU admissions who experienced wrong site, wrong side, wrong patient, wrong procedure, or wrong implant % of DSU admissions experiencing fall within the confines of the DSU % of surgical wound infection % of postoperative sepsis % of medication errors |
| Patient' Satisfaction and Responsiveness | % discharges with written complaints by cause: clinical providers' manners organisational |
| Cost and Productivity | % cancellations of surgical procedures without notification by the patient ("failed to arrive" or "did not attend") |
| % utilized theatre sessions over weekly planned theatre sessions | % cancellations of surgical procedures without notification by the patient ("failed to arrive" or "did not attend") % cancellations of the booked procedure after arrival at DSU: pre-existing medical condition organisational reasons % utilized theatre sessions over weekly planned theatre sessions % procedures with late starts, i.e. with delays > 30 minutes from time appointed for surgical procedure up to the actual beginning Median operating time by each basket procedure for surgical procedure |

Table 4: Essential set of AS indicators at National / Regional Level.

| | |
|------------------------------|---|
| Input | Number and % of DSU by public and private ownership by: Integrated Partially integrated Freestanding |
| Access | Median waiting time for overall list of basket procedures and for each basket procedure |
| Output | % of elective surgery performed as AS for the overall list of elective basket procedures and each elective basket procedure |
| Outcome | Case fatality ratio within 30 days for patients undergoing any of elective basket procedure % unplanned overnight admission % of AS admissions returned to the operating room within 7 days |
| Safety | % of AS admissions who experienced wrong site, wrong side, wrong patient, wrong procedure, or wrong implant |
| Cost and Productivity | Expenditure on AS care as absolute value and % of total health expenditure |

Table 5: Ideal set of AS indicators at National / Regional Level.

| | |
|---|---|
| Input | Number and ratio of theatres fully dedicated to AS / total available theatres |
| Access | Median waiting time for overall list of basket procedures and for each basket procedure |
| Process | % of patients who have received a pre-anaesthesia assessment before AS |
| Output | % of elective surgery performed as AS by overall list of basket procedures and each basket procedure |
| Outcome | Case fatality ratio within 30 days for patients undergoing any of elective basket procedure % unplanned overnight admission by cause: surgical anaesthetic / medical social / administrative % unplanned returns to the operating room within 24 hours % unplanned re-admission to a hospital within 7 days |
| Safety | % of DSU admissions who experienced wrong site, wrong side, wrong patient, wrong procedure, or wrong implant % of AS admissions with surgical wound infection % of AS admissions with postoperative sepsis |
| Patient' Satisfaction and Responsiveness | % patients overall satisfied with AS |
| Cost and Productivity | Expenditure on AS care as absolute value and % of total health expenditure |

Is Routine Anti-Emetic Prophylaxis for All Ambulatory Surgery Patients Justified?

Paulo Lemos MD

Clinical Chief of Anaesthesiology at Centro Hospitalar do Porto, Porto, Portugal, President of the Portuguese College of Anaesthesiology, Past-President of the Portuguese Association for Ambulatory Surgery (APCA), Past-President of the International Association for Ambulatory Surgery (IAAS)

General anaesthesia using volatile anaesthetic agents is associated with an average incidence of post-operative nausea and vomiting (PONV) ranging between 20 – 30%, and reaching 70 – 80% when in the presence of multiple risk factors (1,2). More than 50 million of patients in the World are eventually exposed to this undesirable complication.

Although generally non-fatal and self-limited, PONV may lead to rare but serious medical consequences such as dehydration, electrolyte imbalance, venous hypertension, increased bleeding under skin flaps, suture dehiscence, oesophageal rupture and can expose the subject to an increased risk of pulmonary aspiration if airway reflexes are depressed from residual effects of anaesthetic and analgesic drugs (3).

In ambulatory surgery programmes, PONV do prolong the length of stay, impaired the normal turnover, delay the discharge home, and delay on resumption of normal activities (4), being in addition quite costly (5).

In order to know how anaesthesiologists do face this problem, 78 anaesthetists with regular experience in day surgery from 20 countries of the World where contacted to answer a short questionnaire on PONV and post-discharge nausea and vomiting (PDNV).

Apfel and colleagues did found an increase rate of nausea and vomiting in those patients discharged home in comparison with those patients who experience this situation at the post-anaesthetic care unit (PACU), calling the attention for the fact that this problem can be even worse after patients being discharged home (6).

Lichter JL et al although states that up to 50% of patients have nausea and vomiting after they leave the ambulatory surgery center (6), and asks why do anaesthesiologists not implement multimodal therapies, preventing PONV and PDNV as vigorously as preventing and treating pain (7).

At the day surgery unit of Centro Hospitalar do Porto, in Portugal, in a 10-year period, where 15,429 patients were submitted to a day surgery procedure, only nine patients (0.06%) were admitted because of PONV. Between, 2006 and 2010, based in a sample of 7,242 patients, 4.3 % of patients were nauseated and 1.4 % of them were vomiting after discharge, values significantly below those found in the current literature. These results are based in a routine intravenous double anti-emetic drug prophylaxis in all ambulatory surgery patients, with dexamethasone, 4 mg, and droperidol, 0.625 mg.

References

1. Tramèr MR. A rational approach to the control of postoperative nausea and vomiting: evidence from systematic reviews. Part I. Efficacy and harm of antiemetic interventions, and methodological issues. *Acta Anaesthesiol Scand* 2001;**45**:4–13.
2. Apfel CC, Laara E, Koivuranta M, et al. A simplified risk score for predicting postoperative nausea and vomiting: conclusions from cross-validations between two centers. *Anesthesiology* 1999;**91**:693–700.
3. Le TP, Gan TJ. Update on the management of postoperative nausea and vomiting and postdischarge nausea and vomiting in ambulatory surgery. *Anesthesiology Clin* 2010;**28**:225–49.
4. Imasogie N, Chung F. Risk factors for prolonged stay after ambulatory surgery: economic considerations. *Curr Opin Anesth* 2002;**15**:245–49.
5. Parra-Sanchez I, Abdallah R, You J, et al. A time-motion economic analysis of postoperative nausea and vomiting in ambulatory surgery. *Can J Anaesth* 2012;**59**:336–75.
6. Apfel CC, Philip BK, Cakmakkaya OS, et al. Who is at risk for postdischarge nausea and vomiting after ambulatory surgery? *Anesthesiology* 2012;**117**:475–86.
7. Lichter JL, Chung F. Nausea and vomiting treatment after surgery: we still can do better. *Anesthesiology* 2012;**117**:454–5.

Patient Outcomes and Clinical Indicators

Paulo Lemos MD

Clinical Chief of Anaesthesiology at Centro Hospitalar do Porto, Porto, Portugal, President of the Portuguese College of Anaesthesiology, Past-President of the Portuguese Association for Ambulatory Surgery (APCA), Past-President of the International Association for Ambulatory Surgery (IAAS)

There is growing recognition that a capacity to evaluate and report on quality is a critical building block for system wide improvement of health care delivery and patient outcomes. Health care organisations are frequently being requested to provide data on many aspects of their activity. Clinical indicators results provide valuable information in assessing the performance of health services. This focus on performance management has emerged through increased competition, a more recent focus on quality improvement and safety and an increase demand for evidence of performance.

The popularity of ambulatory surgery (AS) is continuously increasing because of the associated clinical, economic and social advantages. The low rate of adverse events or complications during the intra-operative or immediate post-operative period further justifies the rapid growth of AS. Nevertheless, these surgical programmes should be continuously monitored in order to

guarantee that high quality services are provided for the population. Clinical indicators, and especially outcomes measures, should therefore be implemented to ensure a safe, effective and efficiency environment in our day surgery programmes (Table 1).

The identification of universally acceptable clinical indicators of outcome for quality assurance in AS is one of the most important goals of the International Association for Ambulatory Surgery (IAAS) and its materialization is one of the major achievements in ensuring those high standards of care that we persuade for AS.

Recently, IAAS developed a European project, named Day Surgery Data Project (DSDP), financed by the European Commission aimed to identify and validate a set of indicators and to develop the information systems on AS in Europe. This project proposes also to analyse AS data and health indicators both at international organization and member states level with the special purpose to allow comparisons of performance across countries.

Table 1: Outcome measures in day surgery.

| | |
|--|---|
| Clinical | <ul style="list-style-type: none"> Perioperative cardiovascular and respiratory adverse events Minor post-operative morbidity <ul style="list-style-type: none"> Pain Nausea and vomiting Other: sore throat, headache, drowsiness Unplanned return to the operating room on the same day of surgery Unplanned overnight admission Unplanned return or readmission to the DSU or hospital <ul style="list-style-type: none"> < 24 hours > 24 hours and < 28 days |
| Organisational | <ul style="list-style-type: none"> Proportion of elective surgery performed as day case Accessibility to DS programmes – number of different procedures included Cancellation of booked procedures <ul style="list-style-type: none"> Failure to arrive at the DSU Cancellation after arrival at the DSU |
| Social | <ul style="list-style-type: none"> Patient satisfaction Functional health status / quality of life |
| Economic | <ul style="list-style-type: none"> Efficiency rate of operating room utilisation |
| <p>Except for the work developed by the Australian Council on Healthcare Standards (ACHS) since 1989, clinical indicators are not yet worldwide routine tools for the evaluation of quality performance.</p> | |

Further reading:

1. Day Surgery Data Project. Final Report, 2012. (<http://www.dsdp.eu>)

2. Lemos P, Barros F (2011). Outcome measures. In: *Day Case Surgery*, Smith I, McWhinnie D, Jackson I (eds), Oxford University Press (OUP), United Kingdom. Chap 16.

3. Lemos P, Regalado AM (2006). Patient Outcomes and clinical indicators for ambulatory surgery. In: Lemos P, Jarrett P, Philip B, eds. *Day Surgery, Development and Practice*, International Association for Ambulatory Surgery, Porto. Chap 12.

4. Australasian Clinical Indicator Report 2006-2013, 15th Edition (<http://www.achs.org.au>)

Table 2: Essential set of AS indicators at National / Regional Level.

| | |
|------------------------------|---|
| Input | Number and % of DSU by public and private ownership by: Integrated Partially integrated Freestanding |
| Access | Median waiting time for overall list of basket procedures and for each basket procedure |
| Output | % of elective surgery performed as AS for the overall list of elective basket procedures and each elective basket procedure |
| Outcome | Case fatality ratio within 30 days for patients undergoing any of elective basket procedure % unplanned overnight admission % of AS admissions returned to the operating room within 7 days |
| Safety | % of AS admissions who experienced wrong site, wrong side, wrong patient, wrong procedure, or wrong implant |
| Cost and Productivity | Expenditure on AS care as absolute value and % of total health expenditure |

Table 3: Ideal set of AS indicators at National / Regional Level.

| | |
|---|---|
| Input | Number and ratio of theatres fully dedicated to AS / total available theatres |
| Access | Median waiting time for overall list of basket procedures and for each basket procedure |
| Process | % of patients who have received a pre-anaesthesia assessment before AS |
| Output | % of elective surgery performed as AS by overall list of basket procedures and each basket procedure |
| Outcome | Case fatality ratio within 30 days for patients undergoing any of elective basket procedure % unplanned overnight admission by cause: surgical anaesthetic / medical social / administrative % unplanned returns to the operating room within 24 hours % unplanned re-admission to a hospital within 7 days |
| Safety | % of DSU admissions who experienced wrong site, wrong side, wrong patient, wrong procedure, or wrong implant % of AS admissions with surgical wound infection % of AS admissions with postoperative sepsis |
| Patient' Satisfaction and Responsiveness | % patients overall satisfied with AS |
| Cost and Productivity | Expenditure on AS care as absolute value and % of total health expenditure |

Oral Anti-diabetic and Insulin Therapy in Patients Having Ambulatory Surgery

Dr Anna Lipp

President, British Association Day Surgery, Norfolk and Norwich University Hospital, Norwich, UK

Patients with diabetes are still not consistently offered the option of day or ambulatory surgery in UK¹ despite recommendations in the UK National Guidelines² for peri-operative management of patients with diabetes that specifically state that day surgery management should be offered for appropriate procedures.

The peri-operative management of a patient with diabetes should be based on a pathway of care starting with the referral from primary care where control should be optimised to a target HbA1C of 69mmol/mol prior to elective surgery. At surgical consultation the presence of diabetes should be noted and plans to minimise fasting period by scheduling surgery first on the operating list should be documented. At pre-operative assessment any complications of diabetes or problems with management should be noted; complex patients may benefit from referral for specialist diabetes or anaesthetic assessment. Written instructions for fasting and management of oral hypoglycaemic drugs and insulin should be given in advance of surgery. The aim should be to modify the patient's usual treatment regime with hypoglycaemic drugs or insulin to maintain a blood sugar between 4 and 12 mmol/l in the peri-operative period. Long or intermediate acting insulin should not be stopped pre-operatively but the dose may need to be reduced to avoid hypoglycaemia. High blood sugar (>12 mmol/l) should be managed initially with appropriate dose of short acting insulin. Intravenous insulin as a variable rate insulin infusion (VRIII) should only be needed if 2 doses of insulin have failed to reduce blood sugar to <12mmol/l.

Anaesthetic technique should be selected to minimise risk of post operative nausea and vomiting; use of regional and local anaesthesia will be helpful in reducing requirement for opiate analgesia.

Post-operatively patients should be encouraged to self manage their diabetes as soon as possible, testing their own blood sugar and administering medication when able. Readiness for discharge should be based on usual criteria and include a stable blood sugar within usual limits for patient. Patients should be given clear written instructions about management of their diabetes post-operatively, specifically if blood sugar is high or low, or patient unable to eat normal diet.

In conclusion, patients with diabetes can be safely managed for ambulatory surgery by modification of their usual oral hypoglycaemic medication or insulin to maintain blood sugar 4-12 mmol/l and intravenous insulin should rarely be needed in these patients.

References

1. Modi A, Levy N, Lipp A. A National survey of perioperative management of diabetes in day surgery units. *Journal of One Day Surgery* 2012; **22.3(suppl)**:15.
2. Dhatariya, K. et al. NHS Diabetes guideline for the perioperative management of the adult patient with diabetes. *Diabetic Medicine* 2012; **29.4**:420–33.

Thromboprophylaxis in Ambulatory Surgery

Dr Anna Lipp

President, British Association Day Surgery, Norfolk and Norwich Hospital, Norwich UK

The risk of venous thrombo embolism (VTE) after in-patient surgery is well recognised, however evidence that VTE is also a risk after day or ambulatory surgery has only been recognised more recentlyⁱⁱⁱ. Guidelines produced in the UK by National Institute for Clinical Excellence (NICE) in 2010^{iv} specifically includes patients having day (ambulatory) surgery although no evidence was available relating to benefits of thromboprophylaxis in day surgery patients. The guidelines recommend that all patients should be risk assessed on admission to assess both risk of thrombosis and risk of bleeding and that information should be given to patients about the risks, symptoms and treatment available to prevent VTE.

The thrombotic risk depends on the presence of the following patient factors; age > 60 years, BMI > 30, previous personal or family history of VTE, active cancer or cancer treatment, significant cardiac, respiratory, metabolic, endocrine or inflammatory conditions, pregnancy or post-partum < 6 weeks, use of oestrogen containing oral contraceptive or hormone replacement therapy, critical care admission, varicose veins with phlebitis, dehydration or thrombophilias. Surgical factors include duration and site of surgery; greater than 90 minutes total anaesthetic and surgical time or > 60 minutes for pelvic or lower limb surgery.

These guidelines recommend that mechanical and/or chemical thromboprophylaxis (for 5–7 days) should be offered to patients having day surgery if significant thrombotic risks are identified and bleeding risk is low. However the guidelines do not clarify how many or which risk factors indicate significant risk. Local audit showed that 55% of day surgery patients in Norwich had one or more risk factors for thrombosis⁵.

Retrospective review of 57,000 patients having day surgery over a 5 year period in Norwich showed that < 7 in 10,000 patients subsequently presented with a VTE within 90 days of surgery (all types). After varicose vein surgery 1 in 100 patients presented with VTE. Review of risk factors in patients presenting with VTE showed, 0 risk factors in 5 patients, 1–4 risk factors in 30 patients, 5 risk factors in 2 patients. The patients in this review received stockings if they had 1 or more risk factors and 5 days heparin thromboprophylaxis if they had a previous personal history of VTE.

In conclusion, VTE does occur after day or ambulatory surgery. Patients should have a risk assessment of thrombotic and bleeding risks but it is not clear whether the number or presence of specific risk factors indicates increased risk VTE and which patients should therefore be offered heparin thromboprophylaxis post-operatively.

References

1. Sweetland S, Green J, Liu B et al. Prospective cohort study of a million middle aged women 1996-2001 in UK. *BMJ* 2009;**339**:b4583
2. NICE Clinical Guideline 92. <https://www.nice.org.uk/guidance/cg92>
3. Lipp A, Wimperis JZ, Korn N, et al. Day Case Surgery: who should receive pharmacological Thromboprophylaxis? Local practice informed by Root Cause Analysis of Hospital Associated Thrombosis. *Journal of One-Day Surgery Abstract supplement* 21:2011.

Nerve Blocks and Patient Safety. Which Elements are Imperative in Ambulatory Surgery?

Clara Lobo

Portugal

There is a global interest in reducing the need for hospitalization after elective surgery. However, the growth in ambulatory surgery would have not been possible without the development of improved anesthetic and surgical techniques. Peripheral nerve blocks are the best choice for ambulatory surgery, when possible. This presentation will discuss main issues considering patient safety.

Introduction

Over the last two decades there has been a rapid increase worldwide in the numbers of surgical patients being treated in the ambulatory setting. While the main driving force has been a financial one, there are many benefits for patients including faster return home, greater access to treatment, and innovations in both anesthetic and surgical techniques to facilitate the rapid discharge of patients from hospital.

Discussion

Anesthesia for ambulatory surgery must facilitate home-readiness within hours of surgery (Table 1). Regional anesthesia fulfills those requirements.

Voiding is not a requisite for discharge, unless neuraxial anesthesia or the patient has undergone a procedure associated with urinary retention.

Table 1.

- No respiratory compromise
- Minimal cognitive dysfunction
- Mild or no pain
- No nausea / vomiting
- Rapidly alert
- Minimal cardiovascular changes
- Can eat / drink early
- Can walk early

A comprehensive preoperative assessment should be performed for all patients who may receive regional anesthesia and should be focused on the specific considerations of these techniques. Block physiological effects should be contextualized with the underlying medical condition of each patient.

There are some disorders commonly associated to increased regional anesthesia complication risk (Table 2).

Table 2.

- Significant coagulopathy
- Uncorrected hypovolemia
- Significant aortic stenosis
- Perineural vascular malformation
- Systemic sepsis
- Local infection on the puncture site
- Increased intracranial hypertension

- Unstable neurological disease
- Local anesthetic allergy
- Patient refusal

Bold conditions are absolute contra-indications for regional anesthesia.

In order to provide successful peripheral nerve blocks in the ambulatory setting, some areas should be addressed:

1- Communication; 2- Consent; 3- Working environment; 4- Performance of techniques; 5- Choice of local anesthetic; 6- Multimodal analgesia; 7- Postoperative care; 8- Patient acceptance; 9- Catheters and continuous infusions; 10- Other considerations.

Communication. Most times, surgeons and nurses are not familiarized with PNB techniques. Good communication is essential.

Consent. Patients should be informed of benefits and complications of PNB. Some authors recommend the patient and the anesthesiologist should sign a written consent.

Working environment. Performing PNB take longer than general anesthesia. But time is gained because patients are discharged earlier with regional anesthesia. There is a 20 minutes increase in the amount of time the anesthesiologist spends with the patient. The existence of a block room could even increase the turn over time of patients. Another alternative is to perform the blocks in the recovery room.

Performance of techniques. A dedicated regional anesthesia trolley should exist. Importantly, IntralipidR must be stored as part of the emergency drugs.

The discussion of particular regional techniques is not meant to be addressed in this paper. But it should be noted if tourniquet is going to be used and the technique must adjusted to this particularity. Ultrasound guided blocks are faster to perform and associated to a higher success rate with lower volumes of local anesthetics which could mean a safer approach. Sedation increases patient comfort and cooperation. For ambulatory setting, propofol and short acting opioids are a good option.

Choice of local anesthetic. The choice for short or long acting local anesthetic is tailored to the desired effect. Motor block is not appreciated in ambulatory surgery. For short, low post-operative pain procedures the short acting local anesthetic seems appropriate. Performing selective analgesic blocks with a long-acting LA while using a short-acting LA for the main block

and anesthesia, is an effective technique. For post-operative painful procedures, a continuous block with low concentration long acting local anesthetics (ropivacaine 0,2% or levobupivacaine 0,25%) can be a good option.

Multimodal analgesia. The duration of analgesia provided by PNB is usually longer than the duration of anesthesia, depending on the choice of LA or if a single shot technique is performed (usually limited to 6–8 hours post-block).

Pain perception after block resolution is high, therefore a multimodal approach to analgesia is required.

Post-operative care. Although there has been some debate regarding the feasibility and safety of discharging a patient home with an insensate limb, general consensus is that patients can be discharged if some basic principles are followed: appropriate patient education and follow-up, ambulatory discharge can be extremely safe and should be associated with very few complications.

Patient acceptance. Most patients accept PNB for anesthesia and would have the same technique for future surgeries, if needed. Also high satisfaction scores are reported.

Catheters and continuous infusions. Despite innumerable advantages of sPNB over systemic opioids, those have a limited duration (12-24h), with long-acting local anesthetics. Placing catheters makes possible to extend duration of analgesia for as long as desired. It is associated with high patient satisfaction scores, better sleep patterns, pain scores and cope to physiotherapy. Complications rate are low. The best maintenance regime is to be determined, but low rate infusion and on demand bolus of low concentration long acting local anesthetic is a good option.

Other considerations. Post operative cognitive dysfunction can be reduced avoiding general anesthetics and central acting analgesics, specially in the elderly population.

Conclusion

PNB are an attractive anesthetic/analgesic technique in the outpatient/ambulatory surgery. These techniques are site-specific, have few side effects, and provide better surgical conditions as well as superior analgesia than systemic opioids. PNB reduce the stress response to surgery,

enhance patient satisfaction, and improve patient outcome. PNB are not associated with opioid-related side effects and most techniques are not contraindicated in patients receiving anticoagulants. PNB are associated with few complications, and most of them are mild.

References

1. Abdallah FW, Brull R. Making sense of block “success” in ambulatory anesthesia practice. *Int Anesthesiol Clin* 2011;**49**:1–9.
2. Capdevila X, Ponrouch M, Morau D. The role of regional anesthesia in patient outcome: ambulatory surgery. *Tech Reg Anesth Pain Manag* 2008;**12**:194–8.
3. Aguirre J, Moral A Del, Cobo I, Borgeat A, Blumenthal S. The role of continuous peripheral nerve blocks. *Anesthesiol Res Pract* 2012;**2012**:560879.
4. Clendenen SR, Robards CB, Greengrass R a, Brull SJ. Complications of peripheral nerve catheter removal at home: case series of five ambulatory interscalene blocks. *Can J Anaesth* 2011;**58**:62–7.
5. Gray AT, Laur JJ. Regional anesthesia for ambulatory surgery: where ultrasound has made a difference. *Int Anesthesiol Clin* 2011;**49**:13–21.
6. Hebl JR, Niesen AD. Infectious complications of regional anesthesia. *Curr Opin Anaesthesiol* 2011;**24**:573–80.
7. V C, F C. What criteria should be used for discharge after outpatient surgery? In: Fleisher LA, ed. *Evidence-Based Practice of Anesthesiology*. 2nd Ed. Philadelphia: Elsevier Inc., 2009:343–51.
8. Mannion S, Capdevila X. Peripheral nerve blockade for ambulatory surgery. In: *Peripheral Nerve Blocks and Peri-Operative Pain Relief*. 2nd Ed. Elsevier Ltd, 2011:60–71.

Retrospective study of quality of life after HAL/RAR surgery

Dr. Leander Maes, Dr. Marie Devos, Dr. Thierry Onghena, Dr. L. Van Outryve

Belgium

Introduction

Doppler Guided Hemorrhoid Artery Ligation (HAL) and Recto-Anal Repair (RAR) are surgical techniques to treat hemorrhoids. Research has shown that these surgical techniques are not inferior to other techniques treating hemorrhoids.

Purpose

The purpose of this retrospective study is to investigate the impact of this type of surgery on the patient's quality of life, namely how do patients score postoperative pain and what is the number of relapses.

Material and methods

Records of patients of the department of surgery of AZ Sint-Lucas Ghent are registered. All patients over the age of eighteen, who underwent the HAL-RAR surgery since 2006 are included, regardless of their medical history. Patients who concurrently underwent another kind of surgery and patients lost to follow-up were excluded. A single operator population as extensive as in our department is not yet described in current literature.

Participants were contacted by phone once, at the earliest one year after the surgery. After this interview, a SF36 (Short Form Health Survey 36) query was sent to the patient. By this query, the impact of the HAL/RAR surgical procedure on the quality of life of the patient is examined.

Endocrine Surgery in Ambulatory Surgery: Thyroid

Juan Manuel Martos Martínez MD, PhD

Spain

Outpatient thyroid surgery remains a controversial issue. Thyroid surgery has characteristics that favor the possibility of treatment in outpatient surgery regimen. However there are still voices that cry out against this practice. In this paper the pros and cons of this approach are reviewed and recommendations made in the literature are analyzed.

The main objective of outpatient surgery is to maintain the quality of care provided to patients, encouraging their early return to the medium, while controlling health spending. Since the early eighties, these criteria have been applied to thyroid surgery, and its practice has been gaining more followers along time. However, twenty years later, outpatient thyroid surgery remains a controversial issue.

The main question is why, and why not, should we perform ambulatory thyroid surgery.

Thyroid gland has an easy anatomic accessibility. In most cases, its removal causes slight physiologic disturbance. Also thyroid surgery has a low complication rate and, usually, a short surgical time. These features seem to be ideal for day surgery.

Moreover, in recent years there have been a number of developments that have favored the practice of thyroid surgery.

The trend to a less invasive and less aggressive surgical approach, the development of new energy devices as well as new hemostatic products, has led us to improve patient safety, shorten surgical times and to improve comfort both to patients and surgeons, leading to shorter stays.

Several published studies have demonstrated a reduction in charges associated with outpatient thyroidectomy compared with inpatient surgery. Ambulatory thyroidectomy should allow savings of 15 to 30% of the costs of hospitalization, which approaches in some publications to \$2500 per procedure. Even when stratifying by number of chronic conditions, the lower cost of outpatient thyroidectomy remained stable. Besides, managing thyroid operations in a same day/short stay surgery environment shows a better discharge efficiency and a better operating room optimization

On the other hand, outpatient thyroid surgery detractors argue the possibility of potentially fatal complications, especially postoperative bleeding, based on several studies with a major bleeding rate beyond six hours after surgery, which have heavily marked their positions, in special in certain countries.

However, nowadays hypoparathyroidism isn't a major obstacle to early discharge, due to the possibility of predicting patients requiring calcium replacement by means of postoperative parathyroid hormone determinations.

Thus, although widely accepted that thyroid surgery can usually be performed with short stay criteria (24 h or less), same day surgery should be reserved for selected patients.

Despite this, several studies have shown very good results in strictly selected patients, both with hemithyroidectomy and total thyroidectomy. Our group has performed hemithyroidectomy as same day discharge surgery with very good results as well, and most

of our total thyroidectomy patients have been operated under a 23h stay criteria.

Finally, recently published recommendations for selecting and managing patients for same day/short stay thyroid surgery are of great interest for surgeons dedicated to this branch of surgery, in special the "American Thyroid Association Statement on Outpatient Thyroidectomy" and "Ambulatory thyroidectomy: Recommendations from the Association francophone de chirurgie endocrinienne (AFCE). Inquiry on current practices".

Conclusion

Thyroid surgery can usually be performed with short stay criteria (24 h or less) in most patients. Same day thyroidectomy is also an interesting and feasible option, but it should be performed by experienced high volume surgeons and reserved for selected, knowledgeable and motivated patients.

References

1. Schwartz AE, Clark O, Ituarte P, Lo Gerfo P. Therapeutic controversy: Thyroid surgery – The choice. *Journal of Clinical Endocrinology & Metabolism* 1998;**83**(4):1097–1105.
2. Tufano RP. Advantages and disadvantages of outpatient Thyroid surgery. *JAMA Otolaryngology-Head and Neck Surgery* 2014;**140**(11):1076–7.
3. Marino M, Spencer H, Hohmann SF, Bodenner D, Stack BC Jr. Costs of Outpatient Thyroid Surgery from the University Healthcare Consortium. *Otolaryngology – Head and Neck Surgery* 2013;**149**(2S):60.
4. Vrabec S, Oltmann SC, Clark N, Chen H, Sippel RS. A short-stay unit for thyroidectomy patients increases discharge efficiency. *Journal of Surgical Research* 2013;**184**:204–8.
5. Lang BHH, Yih PCL, Lo CY. A Review of Risk Factors and Timing for Postoperative Hematoma After Thyroidectomy: Is Outpatient Thyroidectomy Really Safe? *World J Surg* 2012;**36**:2497–502.
6. Sørensen KR, Klug TE. Routine outpatient thyroid surgery cannot be recommended. *Dan Med J* 2015;**62**(2):A5016.
7. Doran HE, Palazzo F. Ambulatory thyroid surgery: Do the risks overcome the benefits?. *Presse Med.* 2014;**43**:291–6.
8. Moreno P, Francos JM, Bosch A, Miró M, García A, Rafecas A. Resultados de la cirugía tiroidea limitada a un lóbulo en régimen ambulatorio. Estudio preliminar. *Cir Esp* 2007;**81**(2):87–90.
9. Champault A, Vons C, Zilberman S, Labaille T, Brosseau S, Franco D. How to perform a thyroidectomy in an outpatient setting. *Langenbecks Arch Surg* 2009;**394**:897–902.
10. Khavanin N, Mlodinow A, Kim JYS, Ver Halen JP, Antony AK, Samant S. Assessing Safety and Outcomes in Outpatient versus Inpatient Thyroidectomy using the NSQIP: A propensity Score Matched Analysis of 16,370 Patients. *Ann Surg Oncol* 2015;**22**:429–36.
11. Terris DJ, Snyder S, Carneiro-Pla D, Inabnet WB III, Kandil E, Orloff L, et al. American Thyroid Association Statement on Outpatient Thyroidectomy. *Thyroid* 2013;**23**(10):1193–1202.
12. Menegaux F. Ambulatory thyroidectomy: Recommendations from the Association francophone de chirurgie endocrinienne (AFCE). Inquiry on current practices. *Journal de Chirurgie Viscérale* 2013;**150**:185–920.

Safety in Emergency Day Surgery

Doug McWhinnie

Milton Keynes General Hospital Foundation Trust, UK

The concept of day case emergency surgery is not new (1). Conditions that are not an immediate threat to life, limb or survival can potentially be managed with day case emergency surgery. The timing of the emergency admission affects the timing of surgery and 3 groups of patients can be identified.

1. Admitted, operated and discharged on the same day. This pathway is possible when the patient is admitted by chance early in the day.
2. Admitted beforehand but operation and discharge on the same day.
3. Admitted but immediately discharged with a time for readmission early next day to allow operation and discharge the same day.

Since the late 1990s, emergency day surgery has been trialled in several centres with enthusiasts focussing on the incision and drainage of abscesses. Other procedures such as appendicectomy, strangulated hernia, minor orthopaedic and gynaecological procedures can also be performed but require a sustainable integrated pathway which is not personcentric. . For most patients, the term 'emergency day surgery' refers to the timeframe of 'operation to discharge' rather than the entire emergency admission.

Patient safety on the emergency day surgery pathway differs in several ways to elective ambulatory surgery.

1. Limitations on suitability are primarily applied to the procedure rather than the patient.
2. In an unselected cohort of patients, fitness for surgery requires individual anaesthetic rather than protocol-based preassessment.
3. As patients may have been delayed for surgery due to the uncertainty of diagnosis or delays in diagnostics, VTE prophylaxis is required.
4. Surgical discharge planning often occurs after, rather than before surgery and requires the active involvement of both the surgical and nursing teams.

An emergency day surgery programme can offer benefits for both the patient and hospital with regard to quality of care and a cost reduction in overnight beds. An integrated service embedded in the emergency patient pathway allows sustainability with a continuing adoption of new emergency procedures into the pathway.

Reference

Loftus IM, Watkin DFL. Provision of a day case abscess service. *Ann R Coll Surg Engl* 1997;**79**: 289–90.

Vascular Procedures in Ambulatory Surgery: Hemodialysis Access

Gaspar Mestres
Spain

Introduction

The native arteriovenous fistula (AVF) and arteriovenous grafts (AVG) are the method of choice for achieving vascular access in chronic hemodialysis patients¹⁻³. In comparison with the other types of vascular access (central venous catheters), AVF (followed by AVG) are related to a higher long-term patency rate and a significantly lower risk of infection, healthcare cost, need for hospitalization and mortality risk^{4,5}, so there is a general agreement to recommend the use of AVF (or AVG when AVF cannot be performed) in hemodialysis sessions.

However, after surgery, AVF and AVG may need to mature before being used (which usually comprise 4–6 weeks in AVF and 2–4 weeks in AVG). Thus, in order to avoid starting hemodialysis with central venous lines in incident patients, there is also a general agreement to recommend performing AVF in predialysis patients, as usually performed in Japan and most European countries, but less usually done in the USA⁶.

AVF and AVG surgeries can be technically high-demanding, with an extremely high diversity of surgical possibilities, type and configuration of accesses, and surgically very creative. Despite the low rate of major complications, early thrombosis and AVF maturation failure remains high (10% to 37% of patients)⁷. Indeed, worst results have been described in older patients, female sex, obesity, diabetes, lower arm AVF, and extensive vascular and heart disease⁸⁻¹². In addition, small vessels (arteries <1.6 mm and veins <2-2.5 mm in diameter)^{13,14} and lower blood flow rate¹⁵ are also related to lower permeability of native AVF, and intraoperative clinical and ultrasound measurements (thrill, murmur, intraoperative ultrasound data) are also useful to predict AVF patency¹⁶. Consequently, a high grade of specialization of vascular surgeons in vascular accesses is recommended, in order to take into account all this data, improve specific vascular access techniques, and finally get better general results.

Despite these surgically technical aspects, and patency and maturation rates, most AVF and AVG surgeries are brief procedures, with a very low tax of major complications (bleeding, significant pain or extremity ischemia). Therefore they are procedures that can be usually performed as ambulatory surgery, as actually most centers and groups do. However, there is a very low evidence to recommend this attitude. Main guidelines in vascular access procedures do not mention if these procedures should or should not be performed in an ambulatory setting. For example, the KDOQI guidelines¹ only describe that “the majority of fistula creations can be performed on an outpatient basis”, without setting any recommendation or based in any trial, and other guidelines (i.e. the EBPG guidelines) just do not mention it².

Only a few early articles, in the 90's, pointed the benefit of ambulatory surgery in vascular access procedures^{17,18}, recommending to perform all procedures in an ambulatory setting (including complex cases or patients residing in other far cities), except those cases hospitalized for other causes, graft infections,

lower limb grafts, nocturnal emergencies, or patient preference. It has to be noted that, in these articles, up to 80% of all vascular access procedures have been performed in this ambulatory setting, including primary AVF, AVG and repair of vascular access complications. Almost all cases have been performed under local anesthesia (less than 1% under general anesthesia), and patients have been taken home directly from the operating room (without short in-hospital recovery period), following a 24-hour control visit. In spite of this very aggressive politics, a surprisingly extremely low tax of complications has been published (near to 0% mortality, readmissions, bleeding or wound infection).

Endovascular procedures of failing AVF or AVG, or insertion of central venous catheters, are a complete different scene. Due to their minimally invasive basis, usually percutaneous procedures under radiological control, an ambulatory setting (performed in hospitals but not requiring night stay) or even office-based setting (performed in office in work-hours) has been suggested, showing in several series a very low tax of complications (less than 1%)¹⁹ and an increased length of stay and costs when managed in an inpatient setting²⁰. Therefore, an ambulatory or office-based setting is usually recommended for all these procedures.

Summary

In our group experience, in the last 2 years (2013 and 2014), we have performed 486 arteriovenous surgeries: 305 AVF (63%), 45 AVG (9%), 45 previous AVF or AVG repairs (9%: reanastomosis, superficialization, flow reduction or access interpositions), and 91 other procedures (19%: AVF ligation, repair of arterial aneurysms, AVF bleeding, repair of venous aneurysms, ...). Endovascular arteriovenous access treatments and central venous catheters have not been included in this internal retrospective review.

Most of these cases were performed, in an elective basis, in the ambulatory operating room (470; 97%), and only 16 in the general operating room (3%, due to patient high comorbidities or nocturnal emergencies). Referring to anesthesia, they were performed under local anesthesia (273; 56%), arm anesthetic blockade (192; 40%), epidural (16; 3%) or general anesthesia (5; 1%).

Our policy is to perform the majority of procedures in an ambulatory setting (no or one hour after-surgery hospitalization), except for emergencies, high complex procedures, cases needing hospitalization for other causes, arteriovenous accesses in lower limbs, or patients living alone or far from our hospital; in these cases, short hospitalization (one night after-surgery) or longer hospitalization (more than one night) has been performed. Following this criterion, 439 (90.3%) of our procedures in the last 2 years have been performed in an ambulatory setting, 31 (6.4%) needed short hospitalization and 16 (3.3%) longer hospitalization.

Results of these procedures have been good: 0% in-hospital or 24-hours mortality, 0% significant bleeding (needing reoperation)

and 1.0% early readmissions (before one-week after surgery, due to hyper-acute symptomatic steal syndrome in 4 cases, and acute graft infection in 1). Early 1-month global primary patency has been 93.4% in arteriovenous access creations or repairs.

In conclusion, arteriovenous access surgical creation and repairs can usually be performed in an ambulatory basis, in spite of complex cases, patients with several comorbidities, or the increasing use of anesthetic blockades. Surgical results and access patency are good, and complications needing readmission remain very low; furthermore, in our series, none of our complications have been related to the ambulatory basis, or could be avoided or repaired earlier if patient remained hospitalized.

References

1. NKF-K/DOQI. 2006 update vascular access. Guideline 2: selection and placement of hemodialysis access. *Am J Kidney Dis* 2006;**48**(Suppl 1):s192–200.
2. Tordoir J, Canaud B, Haage P, Konner K, Basci A, Fouque D et al. EBPG on vascular access. *Nephrol Dial Transplant* 2007;**22**(Suppl 2):ii88–117.
3. Rodríguez Hernández JA, González Parra E, Julián Gutiérrez JM, Segarra Medrano A, Almirante B, Martínez MT et al; Sociedad Española de Nefrología. Vascular access guidelines for hemodialysis. *Nefrología* 2005;**25**(Suppl 1): 3–97.
4. Dhingra RK, Young EW, Hulbert-Shearon TE, Leavey SF, Port FK. Type of vascular access and mortality in U.S. hemodialysis patients. *Kidney Int* 2001;**60**:1443–51.
5. Comissió de seguiment del registre de malalts renals de Catalunya. Registre de malalts renals de Catalunya. *Informe estadístic* 2010. Barcelona; 2012 p.172.
6. Rayner HC, Besarab A, Brown WW, Disney A, Saito A, Pisoni RL. Vascular access result from the Dialysis Outcomes and Practice Patterns Study (DOPPS): performance against Kidney Disease Outcomes Quality Initiative (K/DOQI) Clinical Practice Guidelines. *Am J Kidney* 2004;**44**:22–6.
7. Malovrh M. Non-matured arteriovenous fistulae for haemodialysis: diagnosis, endovascular and surgical treatment. *Bosnian journal of basic medical sciences / Association of Basic Medical Sciences* 2010;**10**(Suppl 1):S13–7.
8. Dixon BS, Novak L and Fangman J. Hemodialysis vascular access survival: upper-arm native arteriovenous fistula. *Am J Kidney Dis* 2002;**39**:92–101.
9. Miller PE, Tolwani A, Luscly CP, Deierhoi MH, Bailey R, Redden DT et al. Predictors of adequacy of arteriovenous fistulas in hemodialysis patients. *Kidney Int* 1999;**56**:275–280.
10. Goodkin DA, Pisoni RL, Locatelli F, Port FA, Saran R. Hemodialysis vascular access trainin and practices are key to improved access outcomes. *Am J Kidney Dis* 2010;**56**:1032–42.
11. Prischl FC, Kirchgatterer A, Brandstätter E, Wallner M, Baldinger C, Roithinger FX et al. Parameters of prognostic relevance to the patency of vascular access in hemodialysis patients. *J Am Soc Nephrol* 1995;**6**:1613–18.
12. Basile C and Lomonte C. The operating surgeon is the major determinant for a successful arteriovenous fistula maturation. *Kidney Int* 2007;**72**:772.
13. Vascular Access 2006 Work Group. Clinical practice for vascular access. *Am J Kidney Dis* 2006;**48**(Suppl 1):S176–247.
14. Malovrh M. Native arteriovenous fistula: preoperative evaluation. *Am J Kidney Dis* 2002;**39**:1218–25.
15. Wong V, Ward R, Taylor J, Selvakumar S, How TV, Bakran A. Factors associated with early failure of arteriovenous fistulae for haemodialysis access. *Eur J Vasc Endovasc Surg* 1996;**12**:207–13.
16. Mestres G, Fontseré N, Campelos P, Maduell F, Rimbau V. Intra-operative factors predicting 1-month arteriovenous fistula thrombosis. *J Vasc Access* 2012;**13**:193–7.
17. Polo JR, Sanabia J, Serantes A, Morales R. Ambulatory surgery for vascular access for hemodialysis. *Nephron* 1993;**64**:323–4.
18. Wilson SE, Connall TP, White R, Connolly JE. Vascular access surgery as an outpatient procedure. *Ann Vasc Surg* 1993;**7**:325–9.
19. Jain K, Munn J, Rummel MC, Johnston D, Longton C. Office-based endovascular suite is safe for most procedures. *J Vasc Surg* 2014;**59**:186–91.
20. Sawant A, Mills PK, Dhingra H. Increased length of stay and costs associated with inpatient management of vascular access failures. *Semin Dial* 2013;**26**:106–10.

Ultrathin DSAEK (Posterior Lamellar Keratoplasty) in Outpatient Surgery

C.Moser, M.Lecumberri, M.Ferran, R Gosalvez, M.Garat
Spain

Introduction

Until recent years, penetrating full thickness keratoplasty was the only technique available to replace the damaged cornea. Currently, different new techniques have been developed to selectively replace only the damaged corneal layer. We present one of these techniques: Ut -DSAEK (Ultrathin Descemet Stripping Automated Endothelial Keratoplasty).

Summary

When the endothelial corneal cells (which are responsible for maintaining corneal transparency) are severely damaged, it is indicated to perform a posterior lamellar keratoplasty (DSAEK, UT -DSAEK). The most common corneal pathologies involved are Fuchs dystrophy and pseudophakic bullous keratopathy after traumatic phacoemulsification cataract surgery.

The main advantages of performing a posterior lamellar keratoplasty are that it is a “closed” surgery thus minimizing the risk of an expulsive hemorrhage that may occur in a penetrating full thickness keratoplasty where we trephine and replace the whole cornea, it also avoids placing multiple corneal sutures (therefore reducing postoperative induced astigmatism and corneal aberrations), it allows the patient a much faster visual recovery and it carries a lower risk of corneal rejection (as we substitute less foreign tissue). We present the complete procedure, from the choice of the type of Anaesthesia, to the harvesting and preparation of the donor graft and the technique of introducing the graft safely into the recipient eye.

We conclude that Ultrathin DSAEK is a fast and safe technique suitable to be performed as an outpatient surgical procedure.

References

1. Price MO, Giebel AW, Fairchild KM, Price FW. Descemet's membrane endothelial Keratoplasty: prospective multicenter study of visual and refractive outcomes and endothelial survival. *Ophthalmology* 2009; **116**:2361–8.
2. Guerra FP, Anshu A, Price MO, et al. Descemet's membrane endothelial keratoplasty: prospective study of 1-year visual outcomes, graft survival, and endothelial cell loss. *Ophthalmology* 2011; **118**:2368–73.
3. Neff KD, Biber JM, Holland EJ. Comparison of central corneal graft thickness to visual acuity outcomes in endothelial keratoplasty. *Cornea* 2002; **21**:415–8.
4. M Busin, S Maldini, P Santorum, V Scorcia, J Beltz. Ultrathin Descemet's Stripping Automated Endothelial Keratoplasty with the Microkeratome Double-Pass Technique: two-year outcomes. *Ophthalmology* 2013; **120(6)**:1186–94.

Office-Based Surgery: Where Are We Now?

Beverly K. Philip MD

Vice President for Scientific Affairs, American Society of Anesthesiologists, Professor of Anaesthesia, Harvard Medical School, Founding Director, Day Surgery Unit, Brigham and Women's Hospital, Boston, USA

Procedure Selection

Procedure selection defines the types of surgical procedures that can be performed under office-based anesthesia. A review of existing state regulations and professional recommendations reveals a wide variation as to how much the state or regulating body assumes the responsibility for defining the complexity of case that can be performed, and how much is left to the practitioner to define for him/herself. For example, the regulations governing office-based anesthesia in some states have defined the level of surgical complexity based on the extent to which sedation or anesthesia is required. This ranges from Level 1 surgery, such as excision of moles, warts and cysts requiring minimal preoperative tranquilization, to Level 3 surgery, which includes procedures that would reasonably require general anesthesia or major conduction anesthesia. In other states, health care practitioners themselves establish written policies governing the specific surgical procedures that may be performed in their office. Some procedures have specific physiologic needs that the anesthesiologist should be aware of. These include, but are not limited to tumescent liposuction, hysteroscopy with glycine and oral reconstructive surgery.

Scheduling of procedures should take into account both the need to have patients recover adequately and the desire to avoid discharge delays. This may require that patients who undergo longer procedures or who need longer observation are scheduled early and shorter procedures to follow.

Notwithstanding these definitions of surgical complexity, the anesthesiologist should satisfy him/herself that the procedure to be undertaken is within the scope of practice of the health care practitioners and the capabilities of the facility. Procedures involving significant blood loss, major intra-abdominal, intrathoracic or intracranial cavities are not appropriate for the office setting. Furthermore, the procedure should be of a duration and degree of complexity that will permit the patient to recover and be discharged from the facility within a reasonably short period of time. The procedure to be performed should be agreed upon by the patient, anesthesiologist and surgeon before the procedure is undertaken and before sedative medication is administered to the patient.

Preoperative Patient Selection

Each office should establish guidelines that describe criteria for determining patient selection for office procedures. These guidelines will take into account:

1. Patient's medical status.
2. Degree of stability of that medical status.
3. Patient's psychological status.
4. Patient's support system at home (social evaluation).

The assessment of the medical condition of the patient is based on history, physical examination and such laboratory studies as determined by the surgeon, primary care physician, consultant and/or anesthesiologist. The history and physical examination should be performed by the surgeon or his/her designee. This

history and physical should be both current (within 30 days or as defined by state regulation) and reassessed by the surgeon as unchanged on the day of the procedure. The choice of preprocedure laboratory tests, CXR and EKG should be guided by the patients underlying medical condition and the likelihood that the results will affect the anesthetic plan.

The following is a partial list of specific factors that should be taken into consideration when deciding whether anesthesia in the office setting is appropriate:

- a. Abnormalities of major organ systems, and stability and optimization of any medical illness.
- b. Difficult airway
- c. Previous adverse experience with anesthesia and surgery.
- d. Current medications and drug allergies.
- e. Time and nature of the last oral intake.
- f. History of alcohol or substance use or abuse.
- g. Presence of an adult who assumes responsibility specifically for caring for and accompanying the patient from the office.

Intraoperative Care – Anesthesia Issues

Anesthetic techniques used in the office setting range from local infiltration and sedation to general anesthesia. Sedation is recognized as a continuum from anxiolysis, moderate sedation/analgesia (conscious sedation), deep sedation/analgesia, to general anesthesia.

The depth of sedation/analgesia achieved varies from patient to patient in the amount of drug required and the rapidity of the induction. Major conduction anesthetics may result in cardiovascular collapse, respiratory insufficiency or a failed block requiring supplementation or general anesthesia. It is imperative for the office practitioner to be prepared with all needed equipment, drugs and skills for rescue and resuscitation, including oxygen, positive pressure ventilation, airway aids, resuscitation medications and continuous anticipation of potential untoward events. The most important clinical aspects of giving anesthesia remain the training, experience, continuing education and vigilance of the anesthesia personnel.

Reference

1. "Office-Based Anesthesia: Considerations for Anesthesiologists in Setting Up and Maintaining a Safe Office Anesthesia Environment". Available at: <https://ecommerce.asahq.org/p-319-office-based-anesthesia-considerations-in-setting-up-and-maintaining-a-safe-office-anesthesia-environment.aspx>

SAMBA Curriculum for Education in Ambulatory and Office-Based Anesthesia

Beverly K. Philip MD

Vice President for Scientific Affairs, American Society of Anesthesiologists, Professor of Anaesthesia, Harvard Medical School, Founding Director, Day Surgery Unit, Brigham and Women's Hospital, Boston, USA

The Society for Ambulatory Anesthesia (SAMBA) provides educational opportunities, encourages research and provides professional guidance in order to advance the practice of ambulatory anesthesia. As part of its educational goal, SAMBA offers several curricula in ambulatory and office-based anesthesia. They can be found at

<http://www.sambahq.org/p/cm/ld/fid=71>

The **Curriculum Guidelines for a Medical Student Rotation in Ambulatory Anesthesia** have 29 ambulatory-specific medical and managerial knowledge as well as technical skills educational topics.

The **Curriculum Guidelines for an Anesthesia Resident Rotation in Ambulatory Anesthesia** recommend managing a minimum of 75 patients undergoing ambulatory surgery including:

- 20 peripheral nerve blocks for patients undergoing surgical procedures
- 20 general anesthetics emphasizing rapid emergence
- 20 monitored anesthesia care cases ranging from anxiolysis to deep sedation

The resident rotation should also include:

- * Involvement in the management of acute postoperative pain, including familiarity with intravenous techniques, oral pain medication and other pain-control modalities
- * Structured ambulatory postanesthesia care experience, involving direct care of patients in the postanesthesia care unit and responsibilities for management of pain, hemodynamic changes, and emergencies related to the postanesthesia-care unit under the supervision of designated faculty who must be readily and consistently available for consultation and teaching.

The curriculum lists specific cognitive objectives, separated into first-week and full-rotation timeframes. It lists skill objectives for the rotation as well.

The resident curriculum guidelines also suggest advanced programs, lasting 6–12 months. These advanced rotations may be offered to residents as either a 6-month Advanced Clinical Track, a 12-month Subspecialty Clinical Track with increased responsibility, or a 12-month Clinical Scientist Track that includes 6 months of laboratory or clinical research.

More recently, SAMBA has developed a detailed **Competency-based Curriculum for Fellowship Education in Ambulatory and Office-Based Anesthesia**. To quote this document,

“The overarching goal of the ambulatory and office-based anesthesia fellowship is to provide the trainee with an organized, comprehensive, advanced educational experience, in ambulatory anesthesia. Training will provide opportunities to develop organizational and managerial skills necessary for administration of an ambulatory facility and to conduct of clinical research.”

The Fellowship Curriculum contains advanced competency objectives in patient care, practice-based learning and improvement, interpersonal and communication skills, professionalism, systems-based practice and medical knowledge, as well as learning objectives for the subspecialty rotations oriented to different surgical specialties, in addition to administrative experience and research experience. References are given.

Separately, SAMBA developed the **Office-Based Anesthesia Curriculum**, with the goal of providing the resident “with a comprehensive experience in the anesthetic management of ambulatory surgical patients in an office based environment”. It is intended for one month in the resident’s senior training year. This curriculum delineates a parallel set of cognitive and skills objectives, as well as general competencies in patient care, practice-based learning and improvement, interpersonal and communication skills, professionalism, and systems-based practice that are specific to the office-based anesthesia environment. The curriculum offers resident evaluation tools and references.

Deep Sedation By Non-Anesthesiologists: Is it Safe?

Beverly K. Philip MD

Vice President for Scientific Affairs, American Society of Anesthesiologists, Professor of Anaesthesia, Harvard Medical School, Founding Director, Day Surgery Unit, Brigham and Women's Hospital, Boston, USA

The definitions of sedation and anesthesia appear in the ASA's **Continuum of Depth of Sedation: Definition of General Anesthesia and Levels of Sedation/Analgesia**. This document defines four levels of increasing depth of sedation and anesthesia using 4 categories of criteria: Responsiveness; Ability to maintain airway; Spontaneous ventilation; Cardiovascular function. The core definitions are the level of patient responsiveness:

1. Minimal sedation (anxiolysis) {Italics by BKP}

- "A drug-induced state during which patients *respond normally to verbal commands*.

2. Moderate sedation/analgesia (formerly known as "conscious sedation"):

- "A drug-induced depression of consciousness during which patients *respond purposefully** to verbal commands*, either alone or accompanied by light tactile stimulation.

3. Deep sedation/analgesia:

- "A drug-induced depression of consciousness during which patients *cannot be easily aroused but respond purposefully*** following repeated or painful stimulation.

4. General Anesthesia:

- "A drug-induced loss of consciousness during which patients are *not arousable, even by painful stimulation*.

****Note:** Reflex withdrawal from a painful stimulus is **not** considered a purposeful response.

General Anesthesia has an additional, specific definition: "If the patient loses consciousness and the ability to respond purposefully, the anesthesia care is a general anesthetic, irrespective of whether airway instrumentation is required." (**Position on Monitored Anesthesia Care**). All ASA Documents can be found at

<http://www.asahq.org/resources/standards-and-guidelines>

There is large experience with levels of moderate sedation, formerly known as 'conscious sedation', being provided safely by nonanesthesiologists. However, increasingly, sedation by non-anesthesiologists is being done with drugs that can produce deep sedation and even general anesthesia, such as propofol. In the **Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists**, we find the recommendation that patients receiving propofol need to receive care consistent with deep sedation. The document highlights some differences when deep level of sedation is given. One difference relates to the individual who is monitoring the patient. For moderate sedation there needs to be a designated individual, other than the practitioner performing the procedure, who is present to monitor the patient throughout procedure; this individual may assist the operator with minor, interruptible tasks once the patient's level of sedation/analgesia and vital signs have stabilized. However, if deep sedation is provided, the monitor should have no other responsibilities. Also, for moderate sedation, it is recommended that an individual

with advanced life support skills be immediately available (within 5 minutes), but be within the procedure room for deep sedation.

Anesthesiologists possess specific expertise in the pharmacology, physiology, and clinical management of patients receiving sedation and analgesia. For this reason, they are frequently called upon to participate in the development of institutional policies and procedures for sedation and analgesia by nonanesthesiologists for diagnostic and therapeutic procedures. To assist in this process, ASA has developed **Practice Guidelines for Sedation and Analgesia by Non-Anesthesiologists**. These guidelines specifically exclude Minimal Sedation (Anxiolysis). They do address multiple aspects of safe patient care:

Patient evaluation including history and physical examination;

- Preprocedure preparation- counseling; fasting;
- Monitoring-consciousness, ventilation, oxygenation, hemodynamics;
- Recording of monitored parameters;
- Personnel dedicated to patient monitoring and safety;
- Education and training of personnel;
- Appropriately-sized emergency equipment;
- Supplemental O₂ if hypoxemia anticipated or develops;
- Multiple sedative/analgesic drugs increase all effects;
- Titrate drugs to achieve the desired effect;
- Propofol & methohexital require care for deep sedation;
- Intravenous access;
- Reversal agents available;
- Recovery care and discharge;
- Patients with special problems

Although sedation is often offered as 'safer than general anesthesia', this may not be altogether correct. In 1984, Natof conducted a survey in 40 freestanding ambulatory surgery centers, encompassing 87,492 patients. He reported that the highest incidence of complications occurred in patients who received local with sedation, 1 in 106, compared to 1:120 with general anesthesia. Patients who had local anesthesia alone had a lower incidence, 1:268. {Natof HE. FASA Special study I. Alexandria, VA 1986, Federated Ambulatory Surgery Association}

Data from the ASA Closed Claims database show that 'Inadequate oxygenation/ventilation' was more common in MAC claims (15%) than with GA (7%) and RA claims (5%, p<0.05). There was no difference in the severity of injury (proportion of claims for death or brain damage), nor was there a difference in the proportion of claims for substandard anesthetic care (37%), payments (54%), or the amount payment (median \$99,500) {Bhananker SM et al. Anesthesiology 2006; 104: 228-34}.

The Gastroenterology literature can give us a window into the safety of sedation by non-anesthesiologists. They have championed

“NAPS” (Nurse-Administered Propofol Sedation) which is a 2-week training program, now done nurse-to-nurse. {Walker JA. *Am J Gastroent* 2003; 98: 1744–50}. In one series of 9152 primarily ASA 1 & 2 patients, most complications occurred in 1836 upper GI endoscopies. Three patients had ‘prolonged apnea’ with ‘hypoxemia’: 2 were given mask ventilation and one recovered spontaneously after 30 sec. Three patients had laryngospasm, and 7 had colonic perforations (3 due to ‘forceful sigmoid disruption’). Another series of 2000 patients excluded ASA 3, aspiration risk and difficult airway patients. {Rex DK et al. *Am J Gastroent* 2002; 97: 1159–63}. In this series, 11 desaturated <90% despite 4L/m O₂ and were treated with increased O₂; 4 desaturated <85%, were ‘assumed apneic’ and treated with mask ventilation. These authors note that experience did not prevent apnea: 2 of the 4 desaturations <85%, occurred in the first thousand patients, and 2 in the second. 2/2000 sedations were converted intentionally to general anesthesia due to restlessness. Even more illuminating as to the depth of sedation actually achieved was the observation that patients were “often unable to assist with position changes” during colonoscopy.

Emergency Medicine physicians are another group promoting their practice of deep sedation. Here the series are smaller.

| | #Adults | Dose | Adverse Events |
|-------------|---------|----------------------|--|
| Swanson | 4 | 0.14 mg/kg/min | none |
| Swanson | 20 | 0.21 mg/kg/min | 2 apnea; 1 assisted ventilation (AV) |
| Miner | 21 | not stated | 4 respiratory depression (RD), 1 hypoxia. No AV. |
| Miner | 54 | not stated | 22 RD, 5 hypoxia, 5 AV |
| Miner | 51 | 1mg/kg+ 0.5mg/kg prn | 28 RD, 5 hypoxia, 2AV |
| Coll-Vinent | 9 | 1.5 mg/kg | 4 hypoxia, 2 apnea |

{Green SM, Krauss B. *Ann Emerg Med* 2003; 42:792–7}

Only the patients in Coll-Vinent series were NPO. Other practitioners such as dentists are also considering giving deep sedation in their practice {Yagiela JA. *J Dent Educ* 2001; 65:1348-56}.

The package insert for propofol (Diprivan®) contains a Warning that states:

“For general anesthesia or monitored anesthesia care (MAC) sedation, DIPRIVAN Injectable Emulsion should be administered only by persons trained in the administration of general anesthesia and not involved in the conduct of the surgical/ diagnostic procedure.”

In 2005, the American College of Gastroenterologists petitioned the FDA to remove this warning from the propofol label. In August 2010, FDA specifically reaffirmed both of the requirements addressed there: “trained in the administration of general anesthesia” as well as “not involved in the conduct of the surgical/ diagnostic procedure.”

Talk is about convenience and money until first catastrophe happens. Deep sedation may not be necessary. Patients, physicians and regulators expect safety to be the #1 priority, and anesthesiologists need to be the voice for safety for ALL patients.

Hands-on Workshop: Applying Inhalation Kinetics to Optimize Recovery of Ambulatory Surgery Patients

James H Philip ME(E), M.D.

Anesthesiologist and Director of Clinical Bioengineering, Brigham and Women's Hospital, Professor of Anaesthesia, Harvard Medical School Boston Massachusetts USA

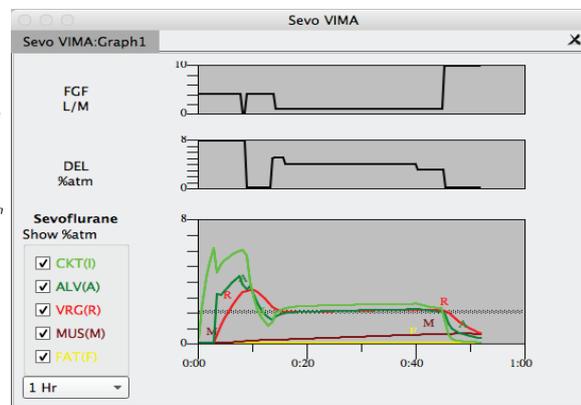
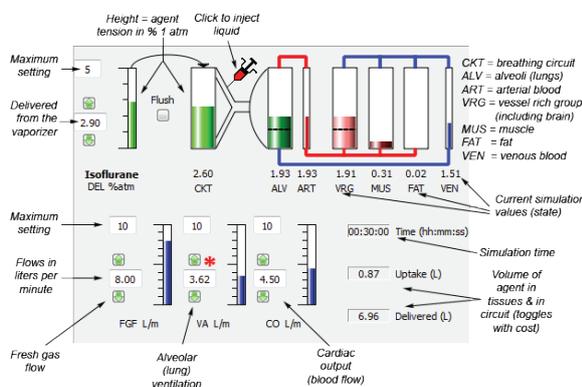
Inhalation anesthesia kinetics can be understood and explored using computer simulation¹. In this workshop learners download a computer program, workbook, and workshop support material from www.medmansimulations.org and follow or perform examples of inhalation anesthesia administration².

In the VIMA example² shown in the right figure panel the breathing circuit is primed with 8% sevoflurane for 3 minutes and clinical timing begins (0'0"). Vital capacity (deep) breath is followed by normal breathing. Brain anesthetic tension (labeled R) reaches desired clinical states quickly. These are 1% (loss of consciousness [LOC]) at 1'00", 2.1% (MAC, at the dotted line) at 3'0", 3.2% (1.5 MAC and ready for LMA placement) at 5'0". After the LMA is placed the vaporizer is switched off until brain tension falls to 2.1% (1 MAC) at which time typically Expired = 1.5% (1.75 MAC) at 10'0". FGF is then lowered to 1 LPM and the vaporizer is adjusted to maintain Expired = 2.1 % (1 MAC) until just before the end of surgery, in this case at 45'0". The Vaporizer is switched off and FGF set is set to 10 LPM. Expired Brain tension falls to 0.7% (MACawake) 5'45" later and the LMA can be removed. Surgical positioning or skin preparation can begin after LOC, or after LMA is placed.

In the workshop several simple simulations will be performed. Attendees are encouraged to bring laptop computers (Windows or Macintosh) and download the Gas Man program and support material including free license before the workshop from www.medmansimulations.org. This way they can follow along in real time. It is also possible to download and use the software and support material after the workshop.

References

- Philip JH. Gas Man® - An example of goal oriented computer-assisted teaching which results in learning. *Int J Clin Mon Comp* 1986;3:165-73.
- Philip BK, Lombard LL, Roaf ER, Drager LR, Calalang I, Philip JH. Comparison of Vital Capacity Induction with Sevoflurane to Intravenous Induction with Propofol for Adult Ambulatory Anesthesia. *Anes Analg* 1999;89:623-7.



Gas Man® Picture on left and Graph on right. Graph shows VIMA (Volatile Induction and Maintenance Anesthesia).

New Technology in Ambulatory Anesthesia: How Can it Help Us

James H Philip ME(E), MD

Anesthesiologist and Director of Clinical Bioengineering, Brigham and Women's Hospital, Professor of Anaesthesia, Harvard Medical School Boston MA, USA

Monitoring inspired and expired anesthetic concentration is important in anesthesia for ambulatory surgery. Inhaled anesthetics are administered with a vaporizer and anesthesia machine that provide a precise concentration of anesthetic drug to the breathing circuit on the way to the patient. This concentration represents a partial pressure or tension which propagates from the vaporizer to the patient's brain along the path indicated in Figure 1. It passes from vaporizer, through breathing circuit, lungs, arterial blood, and arrives in brain and other tissues. It then comes back from these locations to the patient's lungs and breathing circuit and then goes back to the patient again. In this way, the drug is not wasted. Doing this safely and effectively requires monitoring inspired and expired gas concentrations. With proper monitoring and educated adjustment of vaporizer dial setting, anesthetic depth can be controlled precisely and inexpensively.

New, more advanced anesthesia machines allow the anesthesia professional to dial in the desired end-tidal concentration and have the anesthesia delivery system adjust vaporizer setting and fresh gas flow to control inspired concentration and then expired concentration to the desired level. Figure 2 shows an example of precise control of expired anesthetic concentration attained by careful manual adjustment of fresh gas flow and vaporizer setting.

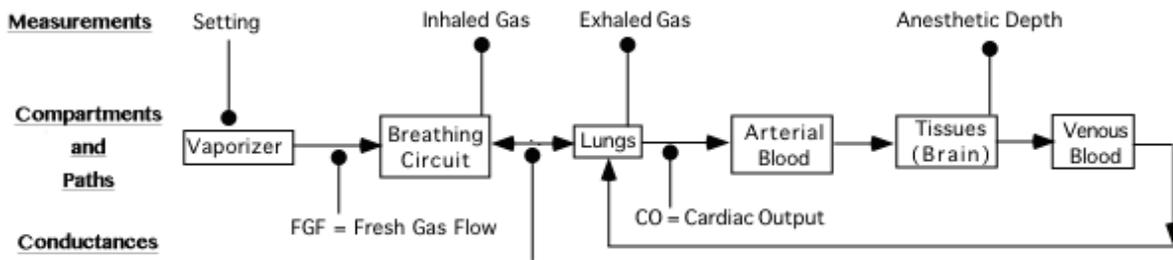


Figure 1. The path of anesthetic partial pressure from vaporizer to brain, including controls and measurements.

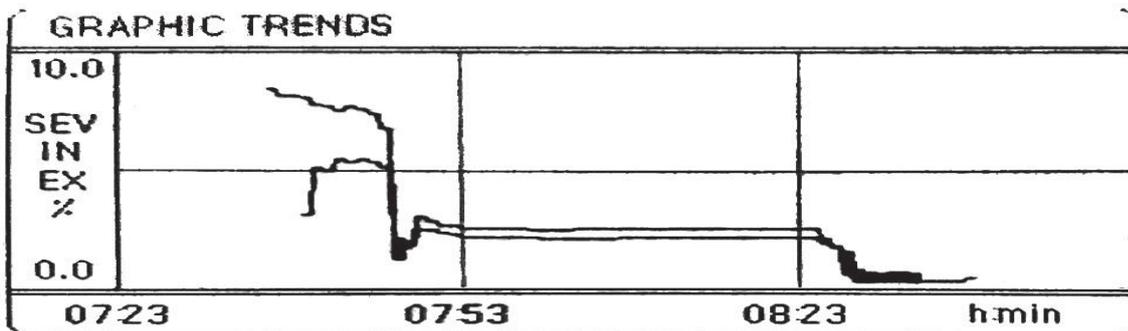


Figure 2. Precise control of expired concentration to provide rapid induction and emergence for ambulatory surgery.

Does the type of the anaesthesia to be given affect the fasting time pre-op? Special consideration for laparoscopic procedures?

José Miguel Silva Pinto

Portugal

Drawing from the extensive historical evidence, we will confirm the importance of pre-op fasting and review the ASA and ESA 2011 guidelines and recommendations. Finally we will discuss the relevance of adjusting fasting to both the anesthetic technique, and laparoscopic procedure of choice.

References

1. The American Society of Anesthesiologists, Inc. Lippincott Williams & Wilkins. Practice guidelines for preoperative fasting and the use of pharmacologic agents to reduce the risk of pulmonary aspiration. *Anesthesiology* 2011; **114**:495–511.
2. Smith I, Kranke P, Murat I, Smith A, O'Sullivan G, Soreide E, Spies C, Veld B. Perioperative fasting in adults and children: guidelines from the European Society of Anaesthesiology. *Eur J Anaesthesiol* 2011; **28**:556–69.
3. Macuco M. Jejum pré-operatório: Validade de critérios. *Rev. Brasileira de Anestesiologia* 1998; **48**:4:295–308.
4. Kasca M, Grosmanova T, Havel E, et al, The impact and safety of preoperative oral or intravenous carbohydrate administration versus fasting in colorectal surgery: a randomized controlled trial. *Wien Klin Wochenschr* 2010; **122**:23–30.
5. Breuer JP, von Dossow V, von Heymann C, et al, Preoperative oral carbohydrate administration to ASA III-IV patients undergoing elective cardiac surgery. *Anaesth Analg* 2006; **103**:1099–108.
6. Bernard S, Macdonald A, Goh J, Adeajayi N. Crying out for a drink: Compliance with national pre-operative fasting guidelines in children. *International Journal of Surgery* 2012; **10**:S53–S109.
7. Salman O, Asida S, Ali H. Current knowledge, practice and attitude of preoperative fasting: A limited survey among Upper Egypt anesthetists. *Egyptian Journal of Anaesthesia* 2013; **29**:125–30.
8. Hamid S. *BMJ Qual Improv Report* 2014; **2**:doi:10.1136
9. Cestonaro T, Schieferdecker M, Thieme R, Cardoso J, Campos A. The reality of the surgical fasting time in the era of the ERAS protocol. *Nutrición Hospitalaria* 2014; **29**(2):437–43.
10. Imbelloni L, Pombo I, Filho G. Reduced fasting time improves Comfort and satisfaction of elderly patients undergoing anesthesia for hip fracture. *Rev. Brasileira de Anestesiologia* 2015; **65**(2):117–23.

Sutureless Small Incision Extracapsular Cataract Surgery in Outpatient Surgery

M. Lecumberri, C. Moser, R. Gosalvez, M. Ferran, M. Garat
Spain

Introduction

Cataract is defined as the opacification of the crystalline lens of the eye which prevents clear vision. Nowadays, 33% of visual impairment in the world is due to cataract. Cataract remains the leading cause of blindness in low income countries: 51% of world blindness, which represents about 20 million people. Cataract is the leading cause of avoidable blindness in the world.

Summary

Nowadays we have three main different approaches to perform cataract surgery: Phacoemulsification, Extracapsular extraction and Sutureless small incision extracapsular extraction (SSIEE).

In developed countries, phacoemulsification with intraocular lens implantation is the most widely used technique. However, we still find a small group of patients with very advanced or mature cataracts in which phacoemulsification would not be indicated. In this group of patients we usually perform SSIEE.

This technique (SSIEE) is also the most widely used in the underdeveloped world, where there is a high prevalence of blinding mature cataracts, with excellent outcomes in terms of restoration of vision and low cost.

We present the complete pathway from the moment the patient arrives to our outpatient clinic where we evaluate and diagnose his mature cataract, throughout the preoperative workup, surgical procedure and postoperative follow-up until the patient is discharged with vision restored. We also show the surgical technique.

References

1. Hennig A, Kumar J, Yorston D, Foster A. Sutureless cataract surgery with nucleus extraction: outcome of a prospective study in Nepal. *Br J Ophthalmol* 2003;**87**:266–70.
2. Hennig A et al. World Sight Day and cataract blindness. *Br J Ophthalmol* 2002;**86**:830–1.
3. Ruit SPG, Gurung R, Tabin G, Moran D, Brian G. An innovation in developing world cataract surgery. *Clin Exp Ophthalmol* 2000;**28**:274–9.
4. Ng JQ, Morlet N, Bulsara MK, JB Semmens. Reducing the risk for endophthalmitis after cataract surgery: population-based nested case-control study: endophthalmitis population study of western Australia sixth report. *J Cataract Refract Surg* 2007;**33**(2):269–80.
5. Kamalrajah S, Ling R, Silvestri G, Sharma NK, Cole MD, Cran G, RM Best. Presumed infectious endophthalmitis following cataract surgery in the UK: a case-control study of risk factors. *Eye* 2007;**21**(5):580–6.
6. Garat M, Moser CL, Alonso-Tarrés C, Martín-Baranera M, Alberdi A. Intracameral cefazolin to prevent endophthalmitis in cataract surgery: 3-year retrospective study. *J Cataract Refract Surg* 2005;**31**(11):2230–4.
7. Garat MI, Moser CL, Martín-Baranera M, Alonso-Tarrés C, Alvarez-Rubio L. Prophylactic intracameral cefazolin after cataract surgery: endophthalmitis risk reduction and safety results in a 6-year study. *J Cataract Refract Surg* 2009;**35**(4):637–42. doi: 10.1016/j.jcrs.2008.12.023.
8. Schroeder B. Sutureless cataract extraction: complications and management; learning curves. *Comm Eye Health J* 2003;**16**(48):58–60.

Day Case Laparoscopic Nissen Fundoplication

Manuel Planells

Spain

Laparoscopic Antirreflux Surgery (LARS) mainly Laparoscopic Nissen Fundoplication (LNF) is a suitable procedure for day surgery. We have performed LNF in a day surgery basis during the last years with a similar approach as we have performed and implement ambulatory laparoscopic cholecystectomy in a routine fashion.

Patients undergoing LNF are fully studied with upper Barium GI, Endoscopy, 24 hs pHmetry and oesophageal manometry. We also include routine abdominal US in order to exclude gallbladder stones. Los Angeles oesophageal inflammation grading is used for endoscopic classification of gastroesophageal reflux disease.

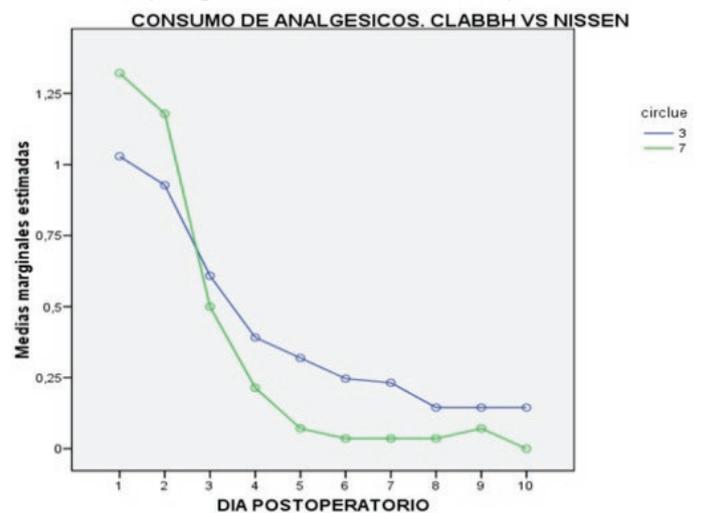
We have developed a scoring system which includes radiological, endoscopic, functional (manometry and 24 hr phmetry) plus anatomical changes (the REFA scoring system) (oesophagitis grading) in order to objectively classify gastroesophageal reflux disease stage.

During the period analysed, we performed 67 consecutive LNF procedures. Postoperative stay was 5.7 hours in ambulatory patients, reaching 47.8 percent of the series. Unplanned admissions reached 56.2 %. Re admission index was 3.1 % and non scheduled consultations reached 9.4 %. The most frequent argument for over-night stay was the social condition (55.6%), followed by delayed discharge time in 29.6 % of patients.

Mean age, and duration of surgery were significantly lower in ambulatory patients while more advanced GERD stage (REFA stage) was also noted in same day surgery patients.

In terms of pain, analgesic requirements and daily activities recovery, the comparison between ALC and ALNF showed that LARS was better tolerated than ALC. (See Figure1 analgesics).

In conclusion: ALNF is a safe and feasible procedure as ALC. Although it is a more complex surgery and requires a full preop examination to properly select patients for surgery and also for day surgery procedures, we think that ALARS performed by experienced upper GI surgeons fully trained in laparoscopic Nissen Fundoplication should be the rule for GERD. A thoroughly preoperative classification of GERD stage with the REFA scoring system will help surgeons in the decision of which procedure to do



and how, if in-patient or outpatient.

References:

1. Agrawal S, Shapey I, Peacock A, Ali A, Super P. Prospective study of routine day-case laparoscopic modified Lind partial fundoplication. *Worl J Surg* 2009;**33**:1229–34.
2. C Mariette, P Pessaux. Ambulatory laparoscopic fundoplication for gastroesophageal reflux disease: a systematic review. *Surg Endosc* 2011;**25**:2859–64.
3. G Zaminotto SE Attwood. Surgical management of refractory gastro-oesophageal reflux. *Br J Surg* 2010; **97**:139–40.

Laparoscopic Approach To Complex Inguinal Hernia. The TEP + LAP Approach

Manuel Planells

Spain

Inguinal hernia repair is the most common operation performed in general surgery although there is no consensus about the best surgical procedure, open anterior repair or laparoscopic. Laparoscopic hernia repair may be performed by transabdominal (TAPP) or pre-peritoneal access or by totally extraperitoneal access (TEP). The last is preferred over the TAPP approach due to the need of peritoneal repair at the end of the procedure which may be difficult, incomplete and in occasions the origin of severe postoperative complications.

In contrast TEP repair does not need peritoneal closure excluding accidental tears during hernia sac treatment. At the same time, TEP allows full diagnosis of "no peritoneal sac" hernias which are frequent in recurrent hernia, obese patients and may be lost in TAPP evaluation if the peritoneum over the inner inguinal ring is not opened and a conventional preperitoneal exploration is not performed.

TEP limitation includes inguinal hernias considered as spontaneous not reducible which require manual reduction and those inguinoescrotal large hernias. In these patients TEP may be extremely difficult due to the inability of sac reduction or even dissection in the preperitoneal space which in these cases seem to decrease in size continuously. Other cases with continuous efforts for hernia reduction will finish with a large peritoneal tear with pneumoperitoneum or even worse with small bowel or sigmoid injuries due to extended dissection.

The approach TEP + LAP is developed for these cases and the objective is to proceed with a TEP procedure after LAP (laparoscopic) inguinal hernia reduction or sigmoid dissection. If the TEP procedure is still difficult to perform we still have an opportunity of laparoscopic repair switching to a classical TAPP approach.

The procedure begins with a classical TEP dissection. Once the hernia is considered as being too large or not reducible by preperitoneal approach, the laparoscope is retrieved, and using the same wound we just have to enter the posterior rectus sheath and after the peritoneum. Pneumoperitoneum is normally established and 5 mm trocars in the midline previously inserted are now introduced through the same wounds into the abdominal cavity. Now we have a laparoscopic approach to inguinal hernia and reduction of small bowel or sigmoid colon can be performed. Once hernia content has been reduced, the 5 mm trocars are partially retrieved, the laparoscope is also retrieved and the preperitoneal plane is again used to access the preperitoneal space with the balloon dissector and the laparoscope. A classic preperitoneal approach is now established and the sac can be dissected and reduced. The TEP is finished and we can re-check through the laparoscopic access our inguinal hernia repair through an abdominal view. Switch to preperitoneal and then to abdominal access is easy to learn and expands the laparoscopic TEP repair beyond to its accepted limits. In case of a huge sac which is still difficult to reduce or if large peritoneal tears and pneumoperitoneum develops we still can go on with a TAPP repair.

Therefore the question in laparoscopic inguinal repair is not: TEP versus TAPP. The question is to try first a TEP procedure, if not possible switch to a LAP approach, then go back to TEP access and if still there is no way to finish the procedure by endoscopy do it through a TAPP laparoscopy.

Ambulatory Surgery in Latin America: Challenges and Opportunities

Alejandro Recart MD, Anesthesiologist

Clinica Alemana Universidad del Desarrollo, Santiago de Chile

Latin America is a huge continent that stretches from the southern bank of the Rio Grande in Mexico to Patagonia in Chile and Argentina. It covers an area of 8 million square miles with a population of nearly 600 million people in 20 countries. Despite its large size and being a very diverse region, Latin-Americans have many things in common, like our history, ancestors, our religion and language, where Spanish is spoken as a first language in most of the countries (except Brazil)

In addition to a common past, Latin-Americans of the 21st century also have common problems, being the most important of them, negative indicators of poverty and inequality that still persist, as reflected in large differences in income and quality of life between countries and even within the same country. Interestingly, in places like Argentina, Chile and Brazil, GDP per capita exceeds US \$15,000 but in other places like El Salvador, Bolivia and Nicaragua, GDP per capita barely reaches US \$5,000.

This situation has led UN to qualify Latin America as the most unequal region in the world. As an example, some of our countries spend only 3–6% of their national budgets in Public Health, whereas in the US this figure reaches approximately 16–17%.

Fortunately, many health indicators in the region have shown great improvements in recent years, life expectancy has increased and there has been a significant decrease in infant and maternal deaths. This is due in part to improvements in both technology and infrastructure that several countries have implemented together with gradually increasing their health budgets. More and better hospitals are being built, but even so, the speed in which beds are incorporated into the system is not enough to meet the growing demand of the population.

Thus, in this scenario of slow but steady health care improvement it is necessary to make the question on what is the actual situation for Ambulatory Surgery (AS) in Latin America, considering it's a model of care that has made extraordinary progress in the rest of the world, especially in developed countries.

There is plenty of literature confirming that AS represents between 50 to 70% of all elective surgery in several places of the Northern hemisphere. Clearly, we have here a good opportunity of improvement. Not much information is available for Latin American countries, but probably AS does not exceed 20%. In addition, there is no absolute consensus on the terminology to be used and some concepts like 23h surgery, short stay, day surgery, office based, etc. are often misused and therefore, creating some confusion. In many places minor surgery is considered as AS.

However it is possible to find isolated reports for outpatient procedures performed in countries such as Colombia, Brazil, Chile, Mexico and Peru. Mainly referred to cataract surgery, ENT, hernias, and even outpatient cholecystectomy. There is also information and reports from some ambulatory surgery centers, most of them private, which perform and promote AS within their countries, but only locally and quite limited. What is most striking

is a complete lack of public health policies, on a national scale to encourage and promote AS in each one of these countries. At the same time, not many scientific societies are specifically devoted to this subject. CLASA, the Latin American Association of Societies of Anaesthesiologists has a dedicated chapter on AS, tried to promote safety, quality and standardize terminology.

In this scenario, where ambulatory surgery and anesthesia are only partially developed, it is relatively easy to assume that sooner rather than later we will see a rapid expansion of this model of health care within the region. This is mainly because trends or fashions that prevail in more developed countries, always end up being implemented in our countries. Especially when it benefits people. Thus, as has happened elsewhere, this growth will occur because most countries are improving their economies and people begin to demand better access and quality of health care. Adequate implementation of AS programs would clearly help in reaching these objectives. Not to mention that surgical waiting lists are still a painful reality in all countries of the region. This situation could significantly improve through AS centered strategies. Clearly Health Authorities should find here an extraordinary opportunity to improve the quality of health care for people.

However, there are still some barriers to overcome to definitively incorporate AS as a Public Health Policy within the region. At first there are cultural barriers, in a region where early discharge is still seen with suspicion. Believe it or not, go visit a friend or relative in the hospital after surgery is considered in some places a social event! The second is education, we clearly need to incorporate theory and concepts on AS not only to surgeons and anesthesiologists, but mainly to decision makers and health authorities. This can be done at first with help from the academic world through organizing seminars, conferences, etc., where doctors, nurses and administrators could share experiences and review new evidence. Probably the most important factor limiting the expansion of this model of care is the complete lack of incentives from health systems to promote AS. The worst example occurs in Chile, with 100% reimbursement from the private payer (insurance) in case of inpatient surgery and only 80% or less if it's AS. Obviously patients pay the difference out of their pockets. The reason of this huge disincentive is not entirely clear.

Finally, it is very important make clear that when AS begin to expand in Latin America, this should be done with at least minimum standards of quality and safety, taking into account that AS is not only about cost- savings, it's about quality of health care, therefore any misunderstanding or confusion might have negative consequences for everyone involved. Unfortunately, health regulatory aspects, such as accreditation of hospitals and surgical centers, is still not considered important in most countries of the region. Quality and Safety are not an option.

AS in Latin-America is much less developed than in the rest of the world, however, it's here to stay. We should not miss this is opportunity of giving our patients the best medical care possible

by implementing good AS programs, both in the public and private worlds. It will be very interesting to see how this model effectively achieves better access to health care for many people who are currently being postponed. It is only a matter of time.

References

1. www.oecd.org/health/healthdata
2. <http://data.worldbank.org/region/LAC>
3. *Ambulatory Surgery Journal*. **13-3**. September 2007
4. White PF, Recart A. :Ambulatory (Outpatient) Anesthesia in *Miller's Anesthesia*, 6th ed. Copyright © 2005 Churchill Livingstone, (Elsevier) Chapter 68.
5. Toftgaard C .Worldwide day surgery activity 2003.*The IAAS survey on ambulatory surgery*. London: IAAS
6. Castoro C. Policy Brief Day Surgery: Making it Happen. IAAS, 2007 www.euro.who.int/document/e90295
7. NHS. Healthcare Commission. «Acute hospital portfolio review. Day surgery».
8. http://www.healthcarecommission.org.uk/_db/_documents/04018392. 2005

Are There True Indications for a Non-Mesh Hernia Repair Nowadays?

Introduction

Groin hernias are very common, and surgical treatment is usually recommended. In fact, hernia repair is one of the most common surgical procedures performed worldwide. The need for this type of surgery has become an important socioeconomic problem and may affect health-care providers, especially in aging societies (1,2,3).

Discussion

According to the Guidelines, surgical repair using mesh is recommended and widely employed, but in many developing countries, non-mesh repair is still the preferred surgical procedure due to economic constraints (1,2). Still according to the International approved guidelines, non-mesh hernia repair has, in fact, specific indications and its performance is accepted in certain situations such as eminent risk of infection, pediatric hernia defects, indirect inguinal hernia neck with less than 2 cm. (1,2,3).

Conclusion

Keeping in mind the ancient descriptions and knowledge and in the aim of pursuing the scientific evolution attached to every surgical field, nowadays there are some emerging new techniques for non-mesh hernia repair. Though the outcomes are still very initial, these techniques are promising ones (3). All this controversial, this is why guidelines for a non-mesh hernia repair remain very specific (1,2).

References

1. Simons MP, Aufenacker T, Bay-Nielsen M et al. European Hernia Society guidelines on the treatment of inguinal hernia in adult patients. *Hernia* 2009; **13**:343–403.
2. Simons MP, Aufenacker T, Bay-Nielsen M et al. Update with level I studies of the European Hernia Society guidelines on the treatment of inguinal hernia in adult patients. *Hernia* 2014; **18**: 151–63.
3. Lomanto et al (2015) Inguinal hernia repair: Toward Asian guidelines. *Asian J Endosc Surg* ISSN 1758–5902
4. Mitura K, Romanczuk M (2008) Comparison between two methods of inguinal hernia surgery – Lichtenstein and Desarda. *Pol Merkur Lekarski* 2008; **24**:392–5.

How to Improve Networking

Dr. T. Naresh Row

Consultant Surgeon and Day Surgery Specialist,, President, The Indian Association of Day Surgery, Mumbai, India

Networking is important for the success and progress of any business. Ambulatory surgery Centres are Services Providers and patient is a Consumer.

Most corporate hospitals work on a business model of providing high end medical care to patients, at a cost. Therefore, especially in a country like India, where, health care is almost 100% privatised, getting more foot-falls in to your hospital would mean more work and more money.

Networking helps in increasing the patient flow to you. It works at multi-pronged level. It is important to be visible to all concerned, patients, doctors, community, to be able to attract more work. Improving Customer satisfaction will ensure a recommendation and a definite return to your centre.

It is important to have courteous and well informed staff, Pleasant and approachable doctors, well lit and clean premises, to name a few, to improve your networking. It is like being a sales man without being pushy or obnoxious, within the preview of medical ethics.

Ambulatory Surgery in the world: India

Dr. T. Naresh Row

Consultant Surgeon and Day Surgery Specialist,, President, The Indian Association of Day Surgery,, Mumbai, India

We are a highly privatized healthcare system in the world. Out of pocket payment for health care is almost 85% with just 15% covered under some form of reimbursement. Though Day Surgery has been around in India since several years, it has been progressing at an individual, specialist level. Individual surgeons of different specialties have been perusing Day Surgery at a personal level. It is yet not compulsory to perform any surgery as a Day Case, unless the surgeon and the patient decide to do so. There is no Insurance or Government compulsion to perform Day Surgeries. The Indian Association of Day Surgery was established in 2003, with the express purpose to increase awareness & establish safe practice parameters. With a population, now pegged at over 1.2 billion, the requirement of healthcare facility has increased many folds.

In the past decade, there has been excellent progress in the awareness of Day Surgery in the country. We have had 7 national conferences and several workshops and lectures across the country, increasing awareness on possibilities of Day Surgery. Several Day Surgery centers have started since, we now have chain of Short stay and Day surgery centers in several cities. Though, this is a beginning, it is far from enough. The average bed-patient ration is 1:1246.

Almost 75% of the Indian population is predominantly living in the rural part of the country.

The medical facilities for the poor, are dependent on state run hospitals, which are overcrowded & overworked staff. Private, affordable, Day Surgery Centers are the future for routine surgical care.

Organisation and Circuits in our Day Surgery Unit

Josefina Aguilar Salvador, Montserrat Masip Bafarron

Spain

Our day surgery unit is a separated building.

We have a special organization, fixed staff and a patient's circuit for the ambulatory surgery. In this pre-congress course will view the ambulatory procedure from the patients arrive to the admission desk, and passing through the different units until the patients get the nursing unit discharge.

We will talk about the support services: preoperative assessment, preoperative nursing assessment, phone call control and nursing home care.

Thanks to the nursing home care, some patients go home with elastomeric iv infusion pumps and the nurses visit the patients at home for pain control and check the device.

The nursing team is specialist in ambulatory surgery with years of experience.

Finally, we can visit the ambulatory surgery centre showing the different units: Admission desk, environment adaptation unit, operating rooms, recovery, etc.

Reference

1. Guía de práctica clínica para la seguridad del paciente quirúrgico. Guías de práctica clínica en el SNS. Ministerio de Sanidad.

Outpatient Pelvic Floor Disorder Surgery at Regional Hospital of Terrassa – Three Years Experience

Laia Sanchez

Spain

Introduction

Pelvic floor disorders (PFD): including urinary incontinence (UI) and pelvic organ prolapse (POP), represent a major public health burden given their high prevalence, significant impairment of quality of life and substantial economic costs. Surgical management of PFD is common with almost 1 of every 10 women undergoing surgery for UI or prolapse in their lifetime.

Objective

To report our experience from three years of Outpatient Pelvic Floor Surgery in Hospital de Terrassa (Barcelona). The main objectives for the implementation of ambulatory pelvic floor surgery Unit were: reduce waiting lists in urinary incontinence surgery and prolapse surgery, reduce hospital admissions, optimize human and technical resources of the hospital, use them to increase health care capacity to the growing demand for diagnosis and therapies and develop and implement new surgical techniques and recover some that were deprecated.

Design

Retrospective descriptive report.

Sample

142 women who underwent outpatient surgical repair of pelvic floor disorders from January 2010 to December 2014.

Method

The women were treated according to the specific protocol elaborated by the Ambulatory Pelvic floor surgery Unit. All patients were given verbal and detailed written information concerning the surgical procedure. Women were mobilized at the recovery unit. They were discharged when able to eat, drink, walk, urinate and only needing oral analgesics. The procedures included had been: repair urinary incontinence, anterior colporrhaphy, posterior colporrhaphy, Manchester procedure and perineal reconstruction. Inclusion criteria were: ASA I and II, BMI <35, surgical time <60 mins (min), absence of serious comorbidities in patients. The Hospital's Protocol includes to remove bladder catheter after surgery and to make analogue scale of pain before discharge.

Primary outcomes measures were overall replacement rate, the number of major and minor complications, the admission rate and level of pain at discharge. Secondary outcomes the impact of immediate removed of bladder catheter on the urinary retention rate and urinary infection rate.

Results

We performed 160 outpatient pelvic floor disorders surgeries. The overall replacement rate in this major outpatient surgery was 71%. Average age: 53.2 (32-79). BMI: 27.44 ± 4,15, mean surgical time 21 ± 1,21 minutes. Of the 142 women, 97.8% could be discharged the same day of surgery. Analogue scale pain:

performed in 123 patients (86.6%) patients before discharge was 3.09. Type of surgery: 80 (65.3%) TOT, 14 (9.9%) anterior colporrhaphy, 11 (7.7%) anterior colporrhaphy with TOT; 1(0.7%) anterior colporrhaphy with perineal reconstruction, 7 (4.9%) TVT-O, 2 (1.4%) anterior colporrhaphy with TVT-O, 11 (7.7%) Manchester procedure, 1 (0.7%) Manchester procedure with perineal reconstruction, 10 (7%) Mini Vaginal tape, 3 (2.1%) posterior colporrhaphy, 1(0.7%) posterior colporrhaphy with perineal reconstruction and 1 (0.7%) posterior colporrhaphy with TOT.

Type of anaesthesia: 39 (27.5%) general balanced with gases, 46 (32.4%) general intravenous, 47 (33.1%) spinal and 10 (7%) local. Complications: no major complications were recorded. Intraoperative: 3 (2.01%), 1 vaginal bleeding >700ml and 2 vaginal injuries. Minor immediate postoperative complications: 42 (28.2%), 32 lower limb's pain, 4 urinary retention, 4 surgical wound hematoma, 1 mesh exposure to the vagina, 1 moderate vaginal bleeding. 4 (2.81%) patients required admission, 2 vaginal bleeding, 1 vomiting and pain intolerance, 1 serious urinary retention, mean 1.6 ± 0.88 days of admission. At monthly monitoring 84 (63,6%) patients recorded no complications, 15 (10.8%) urinary tract infection, 13(9.4%) pain, 3 (2.1%) mesh exposure to the vagina, 1 (0.95%), 3 (2.1%) vaginal bleeding, 11 (7.9%) Urge UI, 2 (1.4%) de novo, 1 (0.7%) SUI, 2 (1.4%) Urinary retention, 1 (0.7%) technical failures. At 6 months control 79 /116 (68.1%) women were asymptomatic, 3 (2.5%) cystocele relapse, 1 (0.86%) dyspareunia, 9 (7.7%) lower limbs pain, 10 (8.6%) urge urinary incontinence, 8 (6.8%) persistent or de novo stress urinary incontinence and 6 (5.1%) urinary tract infection. At annual control 63 women were submitted. 56 (88.8%) were asymptomatic, 6 (9.5%) reported asymptomatic cystocele relapse, 6 (9.5%) stress urinary incontinence, 4 (6.3%) urge urinary incontinence, 3 (4.7%) lower limbs pain, 2 (3.1%) urinary tract infection and 4 (6.3%) failure surgeries, these women were reoperated during this year.

The overall urinary retention rate were 5.6% (8/142 women) with an overall urinary infection rate 10.5% (15/142).

Conclusions

Outpatient pelvic floor surgery has allowed an overall replacement rate of 71%; substitution rate of 83% for TVT-O/TOT procedures and 50% for anterior colporrhaphy since 2012. Immediate remove of catheterization contributes to early postoperative recovery without increasing urinary retention rate compared with the trials reviewed. Pelvic floor disorders repair surgeries are feasible outpatient procedure in a preselected group of women fulfilling standard criteria for outpatient surgery, without compromising the quality of the care for the majority of women.

References

1. Lisa Rogo-Gupta, Mark S. Litwin, Christopher S. Saigal, Jennifer T. Anger. Trends in the Surgical Management of Stress Urinary Incontinence Among Female Medicare Beneficiaries, 2002-2007. *Urology* 2013;**82(1)**: 38–41.
2. Vasil N. Iliev I, Irena T. Andonova. Minimally invasive surgery for stress urinary incontinence- Mesh complications. *Sec. Med. Sci.*, XXXV 2, 2014
3. S. Greisen & M. Glavind-Kristensen & K. M. Bek & S. M. Axelsen. Subjective and objective results of anterior vaginal wall repair in an outpatient clinic: a 5-year follow-up. *Int Urogynecol J* (2012);**23**:883–6.
4. J. Manonai & R. Wattanayingcharoencha Surgical treatment for pelvic organ prolapse in elderly women. *Journal of Obstetrics and Gynaecology* 2015;**35**:82–4.
5. Jennifer M. Wu, Amie Kawasaki, Andrew F. Hundley, Alexis A. Dieter, Evan R. Myers and Vivian W. Sung. Predicting the number of women who will undergo incontinence and prolapse surgery, 2010 to 2050. *Am J Obstet Gynecol.* 2011;**205(3)**:230.
6. Hall GM, Shanmugan S, Nobel T et al. Symptomatic rectocele: what are the indications to repair? *Am J Surg.* 2014;**207(3)**:375-9.

Autologous Adipose Tissue Grafts in Cranio-Maxillofacial Surgery

R Sieira-Gil. M.D., Ph.D.

Department of Maxillofacial Surgery, Hospital Clínic, Barcelona University, Spain.

Introduction

Autologous adipose tissue grafts have gained popularity among maxillofacial & plastic surgeons within the past years, since clinical works by Coleman were published.

It has been demonstrated it is possible to improve long term results by careful handling of the adipocytes.

The main indication for adipose tissue grafting, is restoration and rejuvenation of the face.

Advantages of autologous adipose tissue grafting include ease of performance, no scarring, repeatability, no immunity phenomena, low cost, no secondary defects and quick recovery with minimal risk.

Recent applications include treatment of facial lipoatrophy, hemifacial atrophy, correction of localized soft tissue atrophy, postoncological or postradiotherapy sequelae, as well as a complementary treatment in congenital and maxillofacial deformities.

Discussion

We reviewed our experience in patients treated with adipose tissue grafting for cranio maxillo facial deformities, soft tissue atrophy after radiotherapy and oncological defects after tumor resection and flap reconstruction.

Patients distribution is reviewed and the surgical technique under mild sedation in an ambulatory protocol is explained. Patients required a mean of 2 (1-5) procedures. The most frequently treated areas in our series were the cheek and the malar region. The best results were achieved in the malar region of the face.

Pre and postsurgical results are described through serial photographs.

An adequate technique when harvesting and layering the adipose tissue is of great importance to improve vascular development in the implanted area and to avoid graft resorption and necrosis.

Conclusion

Autologous adipose tissue grafts in an ambulatory procedure provides cranio-maxillo-facial surgery the possibility to restore and aesthetically refine volumetric defects in facial defects and deformities.

References

1. Coleman SR. Autologous fat transplantation. *Plast Reconstr Surg* 1991;**88**:736.
2. Coleman SR. Structural fat grafts: the ideal filler? *Clin Plast Surg* 2001;**2(1)**:111-9.
3. Coleman SR, Saboeiro A, Sengemann R. A comparison of lipoatrophy and aging volume deficits in the face. *Aesthetic Plast Surg* 2009; **33**:14-21.
4. Kawamoto HK. Fat injection and craniofacial surgery. In: Coleman SR, Mazzola RF (eds), *Fat injection from filling to regeneration*. St. Louis, Missouri: Quality Medical Publishing, Inc., 408e473, 2009.
5. Clauser L, Tieghi R, Consorti G. Parry Romberg syndrome: volumetric regeneration by structural fat grafting technique. *Journal of Cranio-Maxillo-Facial Surgery* 2010;**38**:605-9.
6. Kantanen DJ, Closmann JJ, Rowshan HH. Abdominal fat harvest technique and its uses in maxillofacial surgery. *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2010;**109**:367-71.
7. Mojallal A, Shipkov C, Braye F, Breton P, Foyatier JL. Influence of the recipient site on the outcomes of fat grafting in facial reconstructive surgery. *Plast Reconstr Surg* 2009; **124**:479.

Initial experience in Laparoscopic bilateral inguinal hernia repair (TEP) with new anatomical mesh with large pore and Row weight (Dynamesh Endolap) in short stay (6 months follow-up)

Juan Manuel Suárez Grau, Isaias Alarcon del Agua, Luque Bellido, Antonio Juan, Julio Gómez Menchero, Jurado Guadalajara, Francisco Juan, Fernando Docobo Durántez
Spain

Introduction

Laparoscopic surgery for inguinal hernia remains a controversial issue. Its use in surgery of bilateral inguinal hernia is the most established and indicated. The anatomical 3D meshes have a major role in the development of the technique. Today meshes with large pores and scarce materials are used in order to obtain minor pain rates and faster recovery with the same recurrence results.

Material and methods

We present an initial series of 20 bilateral TEP (Primary inguinal bilateral hernia) using PVDF anatomical 3D macroporous mesh (Dynamesh) fixed with fibrin glue with 6 months follow-up. The patients age ratio was 43 years. Inclusion criteria was: male, bilateral inguinal hernia diagnosed, ambulatory surgery criteria, type of hernia: L1-2, M1-2. The follow-up was determined at discharge, a week, first month and 6 months after surgery. Visual analogical scale for the pain was conducted in all the patients in the follow-up.

Results

The results have been positive, with follow-up all patients (with no missing) without recurrence at 6 months after surgery. No surgical infection or other major complications (bleeding ...) in the series were detected. Seromas were detected in medial hernias (9%), disappearing at month. The mean surgical time was 35 min (20-45 min range), mean time of 3 min in each mesh placement. No conversion was made at TAPP in any case. The rates of pain were decreasing to 0 at 6 months with no chronic pain in any case.

Conclusions

The laparoscopic technique is still showing its great advantages, especially in the bilateral inguinal hernia. Using new generation meshes with large pores and low quantity material with atraumatic fixation is positioned as a good choice for laparoscopic surgery for inguinal hernia in ambulatory surgery.

Preparing the patients for AS from Australia

Jo Tier
Australia

Guidelines for Patient preparation

When preparing the patient for Ambulatory Surgery it is essential to have a good preoperative screening and preadmission process, to ensure the patients safety, and to minimise any disruptions or late cancellations, and therefore ease anxiety for the patient.

There are many different ways to prepare the patient, by using preoperative assessments, preoperative education, information brochures, preoperative phone calls, online information, and most important is patient selection for the type of surgery and facility.

Experiences with the Danish Safer Hospital Programme in Ambulatory Surgery

Marie-Louise Ulsoe
Head Nurse, Anaesthesiology Department, Horsens Regional Hospital, Denmark

Introduction

The Danish Society for Patient Safety initiated in cooperation with TrygFonden and Danish Regions and expert assistance from Institut for Healthcare Improvement (IHI) the Danish Safer Hospital Programme 2010–2013.

The purpose for the Danish Safer Hospital Programme was to reduce the events of inadvertent errors, injuries and deaths. Specifically the aim was to reduce mortality by 15% and a 30% reduction in harm by preventing and reducing the number of cardiac arrest, hospital infections, pressure ulcers and medication errors.

The programme intends to promote quality improvement by implementing 12 bundles based on known and accepted best practices. Three of the bundles are now national.

Discussion

The Surgery Bundle contains six elements: *hair removal by scissors, DVT-screening, monitoring of body temperature, warming patients with blankets, bear hugger and warm fluids > 36°C, protocol for bloodsugar-management in diabetic patients, and usage of Safe Surgery Checklist.*

In Ambulatory Surgery adaptations of the Surgery Bundle contains of no mandatory DVT-screening and the Safe Surgery Checklist for endoscopies were adapted.

The Surgery Bundle was implemented via networks containing of management representation, surgeons and nurses.

Did the Safe Surgery Checklist make sense?

In 2012 a survey was conducted to examine the view of the checklist among surgeons and nurses in Ambulatory Surgery. The results varied from the different specialities but predominantly the checklist seemed to make sense for the staffmembers. The result has not been validated.

Monthly audits were conducted to follow the compliance with the checklist. At the start of the project in 2010 the usage of the checklist had a compliance of 50%, this went to a compliance with the safe surgery checklist of 100% in 2013.

Conclusion

The implementation of the Surgery Bundle in Ambulatory Surgery is caused by large employee and management involvement. Continuous management focus and involvement, acknowledging and celebrating results encourages and motivates all employees in the implementation process.

Today the Surgery Bundle is implemented in Ambulatory Surgery and we continue to conduct monthly audits to maintain focus on high patient safety.

Sedation by Nurse-Anaesthetists in the Netherlands; Indications and Limitations

Benedikt Van Loo

Nurse-anaesthetist (CRNA) and sedation practitioner specialist (SPS), Anaesthesia department Academic Medical Center (AMC), Amsterdam

Abstract

For a number of years, the requirement for sedation in various medical procedures has been increasing. The shortage of anaesthetists in the Netherlands has led to the foundation of a special course of training for nurse-anaesthetists: the Sedation Practitioner Specialist (SPS). After completing this postgraduate training, the SPS is responsible for independent pre-operative screening, the procedure and for the post-operative treatment of their patients (ASA1-2) with back up from an anaesthetist. This programme has been a major success and is a valuable addition to the skills of the nurse-anaesthetist.

Introduction

Sedation is not new (1). For many years it has been carried out outside the operating theatres by various medical practitioners (2) and inside the operating theatres (OT) by an anaesthetist or nurse-anaesthetist. In the operating theatre we have never made a distinction between 'light, conscious or deep' sedation. In fact, most of the sedation we do in the OT is just a light sleep (=light sedation) for patients who, for instance, have spinal or epidural analgesia and do not wish to be aware of what is happening.

Conscious and deep sedation takes us to a higher level with more and greater responsibilities and the risk of complications. Deep sedation brings us to the edge of a general anaesthetic. The major difference with this is that patients are still breathing spontaneously and have control over their vital reflexes. During conscious sedation, they can still react to questions and stimuli (3).

Outside the OT, medical practitioners (e.g. gastro-enterologist) traditionally used to give instructions for sedation to their assistant or to a nurse. This has proven to be an unsatisfactory situation as doctors are then required to divide their attention between the patient under sedation and the procedure they are doing. This is unsafe, difficult and unnecessarily stressful. For these reasons anaesthetic departments are increasingly being asked for help with sedation, and over the past 15 years, the demand for sedation for medical procedures from various departments has increased dramatically.

The anaesthesiology department was not always able to fulfill this demand. It was frequently not possible to organize an anaesthetic team for sedation only. (4, 5)

In 2005, the Academic Medical Center in Amsterdam (AMC) and the University Medical Center in Utrecht (UMCU) combined forces and initiated a new training for nurse-anaesthetists so they could become specialists in sedation - **The Sedation Practitioner Specialist (SPS)**

This has become a major success! Sedation practitioner specialists now work in a number of departments in our hospital (gastro-enterology, cardiology, interventional radiology) and the demand is still growing. Every year since 2009 a group of nurse-anaesthetists

has undergone SPS training. The number of applicants has grown and there are now approximately 250 SPS's working in the Netherlands. Because of the growing demand for SPS training, since 2012 the training is given in the colleges where the normal schooling of nurse-anaesthetists takes place.

The SPS Training Curriculum

The total amount of time required for this postgraduate training course is approximately 1 year.

Entrance requirements: certified nurse-anaesthetist with 2 years of clinical experience. Certified in Basic- and Advanced Life Support. (BLS and ALS).

Theoretical programme: the training requires a thorough knowledge of physiology and pharmacology.

During the training course the following subjects are extensively discussed:

- * Vital reflexes and airway management
- * Specific monitoring and data management
- * Pharmacokinetics and pharmacodynamics
- * Sedation for specific interventions and case report presentations/discussions
- * Post-procedural care and conditions for discharge
- * Legal aspects of sedation
- * Communication, procedural care and guidance
- * ALS, BLS and POS-training (POS = Pre-Operative Screening)

Practical programme: as well as theory, practical training is started immediately. There are no simulated exercises; we go 'live' from the start. The AMC and UMCU offer students from other hospitals the opportunity to do the practical training under the guidance and supervision of a certified SPS. Trainees need to do 100 sedations before they can become a certified SPS. Fifty of these are carried out under direct supervision and 50 under indirect supervision of a certified SPS. Trainees are required to keep a portfolio of their progress.

The student will receive the certificate after;

- * Successfully completing the theoretical exam,
- * Completing the required number of sedations,
- * Completing a portfolio and having it approved by the course directors,
- * Receiving approval from the anaesthesiologist who supervises the training (6)

After graduating from the course, the SPS is able to screen patients pre-operatively, to administer sedation in a professional and

safe way, and to discharge the patient from the recovery room independently.

Rules for Sedation by Non-Anaesthesiologists in The Netherlands

The SPS is only allowed to treat ASA 1 and 2 patients. In the event of an ASA 3 patient requiring sedation, an anaesthetist is consulted and in some cases may have to be present

An anaesthetist is to be available at all times (no more than 2-3 min. away) in case of emergencies or for consultation

The patient's vital parameters must be checked at all times (ECG, SpO₂, EtCO₂, RR and RF)

The patient must be screened (on paper in ASA 1-2, on the outpatient pre-assessment clinic in ASA 3 patients) before the procedure and risk evaluation can be completed

A fully-equipped recovery room staffed by competent personnel must be available for monitoring vital signs

Sedation may only be done by certified personnel

SPS's are also required to continue their work as regular nurse-anaesthetists so that they continue to maintain their competence in the basic necessary anaesthetic skills (7)

In February 2012, the Inspection Committee for Health Care at the Ministry of Public Health, Welfare and Sports of the Netherlands drew up a new document for the regulation of sedation and/or analgesia outside the operating theatres. In that framework it is clearly stated that sedation has to be done by competent and qualified personnel. In a nutshell this means that from now on (February 2012), sedation can only be done by somebody who has been specially trained in this field. Sedation by a medical specialist who is concurrently doing a procedure contradicts sedation in safety regulations and is therefore now illegal.

Conclusion

In order to be able to administer conscious of deep sedation for painful interventions outside the OT in a safe and professional manner it is necessary that staff are competent and conditions are standardized and optimal. Leaving the sedation procedure up to the treating specialist is unsafe and unnecessarily stressful for both specialist and patient. The instigation of Sedation Practitioner Specialist training was the solution to this. The SPS is a highly-trained professional, competent in anaesthetic skills and who is able to determine the level of sedation of the patient and deal with any problems that may occur during the procedure. If problems occur, the practitioner should be able to see them at an early stage and to resolve them.

Finally, a quote from the gastro-enterology department from the AMC: , Where sedation is concerned there is no room for doubt: there was an era *before* sedation practitioner specialists and now we are in the era *of* the sedation practitioner specialist.'

References

1. Guidelines for the use of deep sedation and anaesthesia for GI endoscopy ASGE 2002.
2. Riphaus A. et al: sedation for gastrointestinal endoscopy 2008. *Endoscopy* 2009; **41**:787-815
3. *Anaesthesiology* 2002; **96**: 1004-17. Inc. Lippincott Williams & Wilkins Inc. *Practice guidelines for sedation and analgesia by non-anaesthesiologists* ASA 2002
4. Sedation and anaesthesia in GI endoscopy. Guidelines ASGE vol 68 nr. 5: 2008 *Gastrointestinal Endoscopy*
5. Dumonceau JM et al. ESGE-ESGENA-ESA Guideline for NAAP *Endoscopy* 2010;**42**:1-13
6. Curriculum for Sedation Practitioner Specialists. AMC-UMCU Prof. dr. H. Knape/Prof. dr. B. Preckel/P.Vaessen
7. *Framework for sedation and/or analgesia outside the operating theatre.* Ministry for Public Health, Welfare and Sport, Committee on Inspection on Health Care. February 2012

Should Ambulatory Surgery be Based only on Consultants to be Effective and Safe?

Dr. Paul Vercruyse MD

Anesthesiologist; Project officer at medical direction, GZA St. Augustinus Wilrijk - Belgium

In the early years of ambulatory surgery, it was considered mandatory that only consultants should be allowed to perform surgery and anesthesia in that setting. The main reasons were the alleged shorter procedure time and a lower complication rate when compared to residents.

We will go further into those objections, but with more than 70% of total surgeries being performed on an ambulatory basis in the United States today, the ambulatory setting has become an unavoidable segment of the resident training experience.

Back in 1998, Aguilar and Marin from Seville wrote a paper in the *Ambulatory Surgery Journal* titled "Ambulatory surgery in the residents' training programme". At that time already, the percentage of some procedures undertaken on an ambulatory basis was so high that they almost disappeared from inpatient hospitals. They stressed the need for technical training in day surgery units, but also in structural and organizational aspects and management of day surgery units. (1)

So the question is not whether residents should be allowed to work in ambulatory surgery units, but whether their involvement has a negative impact on the day surgery unit time management and on pre- and postoperative complications. This is important in maintaining a high level of quality of care, and in answering questions of the patients concerning who is going to operate.

In a study in Boston, the authors compared day surgery operating room efficiency measures for anesthesiologists working alone, working with residents, and working with certified nurse anesthetists. Compared to the solo anesthesiologist group, anesthesiologists working with residents had significantly longer induction, emergence, and total anesthesia-controlled times. However, the anesthesiologists working with residents had more on-time starts and lower turnover times than the solo anesthesiologist group (2). These results are in accordance with many papers indicating that, concerning efficient OR utilization, little reason exists to justify limiting anesthesia resident training in ambulatory operating rooms.

In a study at Cleveland Clinic concerning anesthesia in 138,932 patients, researchers looking at the adverse outcomes caused by intraoperative transitions of anesthesia care found that these transitions were strongly associated with worse outcomes, but with a similar effect size for attendings, residents, and nurse anesthetists, meaning no negative effect of the presence of residents. (3) Concerning the surgical aspect, See comment in PubMed Commons below many reports evaluated the incidence of complications when residents participate in surgical procedures. A recent report on resident involvement in a large series of laparoscopic gastric bypass procedures showed that this was independently associated with more wound infections and venous thromboembolism, but not with any other medical or surgical complications. The effect appeared to be mediated in part by longer operative times. (4) See comment in PubMed Commons below Cleveland Clinic performed a very large study (60,000+ patients) of potential differences in outcome associated with resident

participation in operations, based on the National Surgical Quality Improvement Program database. They only found a small overall increase in mild surgical complications, mostly caused by superficial wound infections. Reasons for this were likely multifactorial but might be related to prolonged operative time. The conclusion was that resident involvement in surgical procedures is safe (5).

In a review of 607,683 surgical cases from 234 hospitals from the 2006 to 2009 American College of Surgeons National Surgical Quality Improvement Program, outcomes were compared by resident involvement for all general and vascular cases as well as for specific general surgical procedures. Resident intraoperative participation was associated with slightly higher morbidity rates but slightly decreased mortality rates. These effects were clinically very small (6).

In a series of 295 patients undergoing bilateral reduction mammoplasty, one side was operated by a single attending surgeon, the other side by a resident. There was no difference in complication rates between the side operated on with the primary surgeon being the resident versus the attending (7).

The same safety record has been shown in other specific operations, e.g. robotic prostatectomy, thyroidectomy, appendectomy (8-10). A study of the risk factors for retained surgical items (RSI) showed specific circumstances and events associated with increased risk, but trainee presence was associated with 70% lower RSI risk compared with trainee absence (11).

Today, most if not all departments of anesthesia and surgery include ambulatory surgery training in their curriculum. Rotation in the day surgery units is a mandatory part of most residency programs. Some departments organize specific ambulatory fellowships, often combined with regional anesthesia.

An exhaustive overview of what a trainee in ambulatory surgery should be taught was put together by the SAMBA (Society for Ambulatory Anesthesia), and used in the "Program Requirements for Fellowship Education in Ambulatory and Office-Based Anesthesia". The fellowship program in Ambulatory Anesthesia should prepare the anesthesiologist to:

provide expert anesthesia care for many common ambulatory surgeries (e.g., orthopedics, general, gynecologic, otorhinolaryngologic, pediatric, ophthalmologic, podiatric and urologic);

- select appropriate patients, anesthetics, and procedures;
- provide perioperative anesthesia care for a patient in an office-based setting;
- perform basic peripheral nerve blocks;
- staff the postanesthesia care unit (PACU), PACU bypass unit, and same-day surgery recovery unit (phase II recovery);
- supervise two or more operating rooms;
- take charge of (coordinate) anesthesia staffing and OR scheduling;
- design clinical pathways for common outpatient procedures;

- design clinical research for the ambulatory setting;
- practice in an interdisciplinary setting with medical direction of the entire ambulatory care process;
- provide administrative leadership in an ambulatory facility.

Subspecialty training in ambulatory anesthesiology shall comprise a minimum of 12 months duration after satisfactory completion of a residency program in anesthesiology (12).

Our conclusion is that there is extensive literature showing that the involvement of residents in ambulatory surgery does not have a practically relevant impact on the efficiency of day surgery units, and no negative effect on per- and postoperative complications. Specific training in all aspects of ambulatory surgery, including the many non-technical skills, is to be promoted.

References

1. Aguilar J, Marin J, Perez MJ, Garcia-Martinez F. Ambulatory surgery in the residents' training programme. *Ambulatory Surgery* 1998;**6**:137–9.
2. Urman RD, Sarin P, Mitani A, Philip B, and Eappen S. Presence of Anesthesia Resident Trainees in Day Surgery Unit Has Mixed Effects on Operating Room Efficiency Measures. *Ochsner Journal* 2012;**12**(1):25–29.
3. Saager L, Hesler BD, You J, Turan A, Mascha EJ, Sessler DI, Kurz A. Intraoperative transitions of anesthesia care and postoperative adverse outcomes. *Anesthesiology* 2014 Oct;**121**.
4. Krell RV, Birkmeyer NJ, Reames BN, Carlin AM, Birkmeyer JD, Finks JF. Effects of resident involvement on complication rates after laparoscopic gastric bypass. *J Am Coll Surg*. 2014;**218**(2):253–60.
5. Kiran RP, Ahmed Ali U, Coffey JC, Vogel JD, Pokala N, Fazio VW. Impact of resident participation in surgical operations on postoperative outcomes: National Surgical Quality Improvement Program. *Ann Surg*. 2012;**256**(3):469–75.
6. Raval MV, Wang X, Cohen ME, Ingraham AM, Bentrem DJ, et al. The influence of resident involvement on surgical outcomes. *J Am Coll Surg*. 2011;**212**(5):889–98.
7. Patel SP, Gauger PG, Brown DL, Englesbe MJ, Cederna PS. Resident participation does not affect surgical outcomes, despite introduction of new techniques. *J Am Coll Surg*. 2010;**211**(4):540–5.
8. McMillan DT, Viera AJ, Matthews J, Raynor MC, Woods ME, et al. Resident involvement and experience do not affect perioperative complications following robotic prostatectomy. *World J Urol*. 2014 Jul 2.
9. Acun Z, Cihan A, Ulukent SC, Comert M, Ucan B, Cakmak GK, Cesur A. A randomized prospective study of complications between general surgery residents and attending surgeons in near-total thyroidectomies. *Surg Today*. 2004;**34**(12):997–1001.
10. Graat LJ, MD, Bosma E, Roukema JA, Heisterkamp J. Appendectomy by Residents Is Safe and Not Associated With a Higher Incidence of Complications: A Retrospective Cohort Study. *Ann Surg* 2012;**255**:715–9.
11. Stawicki SP, Moffatt-Bruce SD, Ahmed HM, Anderson HL 3rd, Balija TM et al. Retained surgical items: a problem yet to be solved. *J Am Coll Surg*. 2013;**216**(1):15–22.
12. SAMBA website. <http://www.sambahq.org/p/cm/ld/ld=68>

Who Benefits from Hospital Accreditation?

Dr. Paul Vercauysse MD

Hospital accreditation team GZA St. Augustinus Wilrijk - Belgium

According to accreditation organisms, accreditation ensures a safe environment that reduces risk for care recipients and caregivers; offers quantifiable benchmarks for quality and patient safety; provides accredited hospitals with public recognition of their achievements and commitment to excellence; stimulates and demonstrates continuous, sustained improvement through a reliable process; improves outcomes and patient satisfaction; enhances efficiency; and finally reduces costs through standardized care.

How does this turn out in the real world?

Many hospitals expect a **marketing advantage**: accreditation is supposed to strengthen the community confidence in the quality and safety of care, treatment and services; it should provide a competitive edge in the marketplace and improve the ability to secure new business. In Flanders, the northern half of Belgium, as of June 2014, 60 out of 65 hospitals are applying for accreditation. If at the end, as expected, almost all of them will succeed, the marketing advantage will disappear.

A real benefit will be the positive contribution to **patient safety**. The international patient safety goals of the Joint Commission International (accuracy of patient identification; effective communication; dealing with high-alert medications; correct-site, correct-procedure, correct-patient surgery, including time-out immediately prior to start of surgery; infection risk reduction by correct hand-hygiene; and fall risk assessment and prevention) will certainly result in less preventable mishaps.

The impact of accreditation on quality management and **patient outcome** is less obvious. A review by the HAS (Haute Autorité de la Santé, France) indicates that most reports show a positive effect of accreditation on change in practice and on organizational change, but almost no impact on health care outcome and on patient satisfaction.

Recently a few papers looked specifically at the association between hospital accreditation and **patient satisfaction** with hospital care. They conclude that hospital accreditation may represent a step towards quality management, but does not seem to improve overall patient satisfaction. They found no evidence that accreditation was linked to patient satisfaction as measured by patients' willingness to recommend the hospital they had recently attended.

A few publications addressed the question whether the **benefits of accreditation justify the costs**. The incremental costs ranged from 0.2 to 1.7% of total costs. These include direct costs (fee for the accreditation-organism) and the much higher indirect costs (time spent on the procedure by existing staff, extra personnel, hardware purchase). On the other hand, most benefit studies were inconclusive in showing clear evidence that accreditation improves patient safety and quality of care. It appeared difficult to evaluate accreditation in comparison to other (less expensive?) methods to improve patient safety and quality of care.

In reports from many countries it appears that one of the most important barriers to the implementation of accreditation programs is the skepticism of healthcare professionals in general

and **physicians** in particular about the positive impact of accreditation programs on the quality of healthcare services. There is a need to educate healthcare professionals about the potential benefits of accreditation.

In the 2014 report of **Accreditation Canada**, it is stated that there is an urgent need for research that demonstrates a strong link between accreditation status and client outcomes. There is also a need to reduce the workload of the accreditation process, and physician and patient involvement in quality improvement and health care accreditation should be emphasized.

We will conclude with the **Belgian Health Care Knowledge Centre** that there are no hard data showing the effectivity of accreditation programs on patient outcome: there is no validation of the proposed standards, and most indicators used are not outcome-related; accreditation is a complex not well-defined intervention surrounded by many confounding factors. But the positive aspect is that accreditation proved to be an excellent tool to start quality improvement programs in many hospitals.

References

1. Joint Commission International: accreditation benefits; patient safety goals. <http://www.jointcommissioninternational.org/improve/get-accredited-hospitals/>
2. Shaw CD et al. The effect of certification and accreditation on quality management in 4 clinical services in 73 European hospitals. *Int J Qual Health Care*. 2014;**26 Suppl 1**:100-7.
3. Sack et al. Is there an association between hospital accreditation and patient satisfaction with hospital care? *Int J Qual Health Care* 2011;**23(3)**:278-283
4. Mumford V, et al. Health services accreditation: what is the evidence that the benefits justify the costs? *Int J Qual Health Care* 2013; **25(5)**:606-62
5. The Value and Impact of Health Care Accreditation: A Literature Review Accreditation Canada – Updated: March 2014 and March 2015
6. Comparative study of hospital accreditation programs in Europe KCE reports 70C Belgian Health Care Knowledge Centre – 2008

How to deal effectively with pain in the AS

Dra. Inmaculada Vives

University Hospital Vall d'Hebron, Barcelona, Spain

Preemptive, preventive and multimodal analgesia is the present management for dealing with pain in ambulatory surgery. Pain is multifactorial and, therefore a multimodal approach for its management is essential. No single technique can achieve the same result as a combination of methods, individualized for each patient's requirements.(1)

Introduction

The incidence of moderate to severe pain varies between 15-70% in ambulatory surgical procedures. Pain is a multifactorial experience, not just a sensation, where emotion, perception and past experience all affect an individual's response to noxious stimuli. Perioperative analgesia continues to be an important goal in modern medical, surgical and anesthesia care. Moreover, this analgesia must be delivered in a safe, cost effective, and efficient manner.

Discussion

Knowledge of the anatomy and the pathophysiology of pain helps clinicians better understand treatment modalities.

It's important to treat perioperative pain with the ultimate goal of same day discharge to home for the patient. Early discharge demands a rapid recovery and low incidence and intensity of surgery and anaesthesia related side-effects; such as pain, nausea and fatigue. Patients must be fit enough and symptom intensity low enough so that self-care is feasible in order to secure quality of care. Preventive analgesia and multi-modal analgesia has become the gold standard (2). It consists in combining analgesics with different mode of action and side effect profile in order to achieve additive or preferentially synergistic analgesic effect with a minimum of side effects.

Major aspects are education of the patient, the use of adequate non-opioid analgesics and implementation of regional analgesia techniques. Use of continuous peripheral nerve blocks at home increased patient satisfaction. In the same way, intervening promptly with rescue therapies or techniques, such as patient controlled analgesia or intravenous continuous analgesia, is essential for postoperative pain management (3).

Conclusions

Outpatient analgesia should be, both, multimodal and preemptive. Recommendations would be to perform an individualized plan for each surgical patient. It's important to incorporate strategies for adequate pain relief at home, easily understandable, and written instructions to ensure effectiveness. Analgesia po, patient controlled analgesia, continuous plexus block with catheters, local anesthetics in the tissue planes or intraabdominal or intraarticular, even transdermal techniques are different techniques which provide good pain management.

References

1. Gupta A. *Day surgery. Development and practice*. 2006.
2. Jakobsson JG. Pain management in ambulatory surgery – a review. *Pharmaceuticals (Basel)*. 2014;**24.7**:850–65.
3. Beauregard L. et al. Severity and impact of pain after day-surgery. *Can J Anaesth* 1998;**45(4)**:304–11.

Which is the Best Way of Dealing with Shoulder Surgery in AS and to Effectively Control the Pain at Home?

Dra. Inmaculada Vives

University Hospital Vall d'Hebron, Barcelona. Spain

Abstract

Postoperative pain and recovery are major challenges in the practice of anesthesia for ambulatory shoulder surgery .

There are different ways of dealing with pain, such as single nerve block anesthesia (interscalene, supraclavicular, suprascapular), continuous interscalene Plexus block (CSPB), wound or intraarticular local anesthetic injection and systemic or oral analgesia. CSPB seems to be the best way to decrease both postoperative pain (with oral analgesia as rescue medication), and sleep disturbances and increase patient satisfaction after moderately painful shoulder surgery.

Introduction

Inadequate analgesia postoperatively may lead to deleterious consequences. Despite the use of long acting local anesthetics in peripheral nerve blocks, 11% of patients reported wound pain during the first 24–48 postoperative hours, and 17–22% of patients required opioide analgesics 7 days after surgery (1).

Discussion

Single-injection regional anesthesia provides early but not long-term benefit. Use of continuous interscalene block with catheters, as part of multimodal analgesic management, allows continuous analgesia and decreases recovery times by lessening side effects.

Interscalene blocks performed are not without complications. Ultrasound guidance improves visualization of anatomic structures, difusión of local anesthesia and catheter placement allowing us to reduce the volume of local anesthetic needed to produce an effective interscalene block. However, it has not been shown that ultrasound offers a definitive benefit in preventing major complications (2), commonly associated with PNB, mostly neurological complications (i.e peripheral nerve injuries).

Adequate information and discussion with the patient, pre-operatively is necessary in order to deal effectively with pain at home. A well-organised infrastructure, optimally trained medical professionals and appropriate patient selection are the main conditions for safe, effective implementation of ambulatory interscalene catheters in routine clinical practice.(3)

Conclusion

Adequate pain control after shoulder surgery is important to avoid short and long term complications in the postoperative period. Use of CSPB, as part of multimodal analgesic management, allows optimal analgesia with minimal side effects. Ultrasound guided placement optimizes the result of the block. Well informed patients regarding pain management is most important to obtain effective pain control.

References:

1. Capdevila X. et al. Effect of Patient-controlled Perineural Analgesia on Rehabilitation and Pain after Ambulatory Orthopedic. *Anesthesiology* 2006; **105**:566–73
2. BOWENS JR. et al. Regional Blockade of the Shoulder: Approaches and Outcomes. *Anesthesiology Research and Practice* ,volume 2012
3. Marhofer P. et al. A retrospective analysis of 509 consecutive interscalene catheter insertions for ambulatory surgery. *Anaesthesia* 2015; **70**(1):41–6.

Ambulatory Surgery is the official clinical journal for the International Association for Ambulatory Surgery.

Ambulatory Surgery provides a multidisciplinary international forum for all health care professionals involved in day care surgery. The editors welcome reviews, original articles, case reports, short communications and letters relating to the practice and management of ambulatory surgery. Topics covered include basic and clinical research, surgery, anaesthesia, nursing; administrative issues, facility development, management, policy issues, reimbursement; perioperative care, patient and procedure selection, discharge criteria, home care. The journal also publishes book reviews and a calendar of forthcoming events.

Submission of Articles

All papers should be submitted by e-mail as a Word document to one of the Editors-in-Chief.

Anaesthetic papers should be sent to Mark Skues and surgical papers to Doug McWhinnie. Nursing, management and general papers may be sent to either Editor. Electronic submissions should be accompanied, on a separate page, by a declaration naming the paper and its authors, that the paper has not been published or submitted for consideration for publication elsewhere.

The same declaration signed by all the authors must also be posted to the appropriate Editor-in-Chief.

Doug McWhinnie

Division of Surgery, Milton Keynes Hospital,
Standing Way, Milton Keynes,
Buckinghamshire MK6 5LD, UK
Email: dougmcwhinnie@uk2.net

Mark Skues

Department of Anaesthesia, Countess of Chester
Hospital NHS Foundation Trust, Liverpool Road,
Chester, Cheshire CH2 1UL, UK
Email: Mark@Skuesie.wanadoo.co.uk