

Survey on postoperative pain control in ambulatory surgery in Hong Kong Chinese[☆]

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Abstract

Purpose of the study: Pain is one of the most common reasons accounting for delayed discharge, unanticipated hospital admission and patient dissatisfaction in patients undergoing ambulatory surgical procedures. The pattern of postoperative wound pain and efficacy of analgesia was examined in a local Chinese population in Hong Kong to assess the adequacy of the current analgesic protocol. *Scope (Method & Result):* Between January 2000 and December 2001, patients who had undergone surgery in the ambulatory centre were recruited into this study. Telephone interviews were conducted about 24 h after surgery using a standardized questionnaire. Degree of wound pain, amount of analgesics required and level of pain control with analgesics provided would be recorded. The overall response rate was 99.8%. Significant pain was reported from 64 patients (8.2%). Amongst these 64 patients, 26.5% (17/64) had unsatisfactory pain relief with the current analgesic regimen. A high incidence of postoperative pain was observed in the patients undergoing inguinal herniorrhaphy. *Conclusion:* This study identified the groups of patients with unacceptable postoperative pain, which indicates the need to refine the current surgical, anaesthetic and analgesic techniques. It was confirmed that postoperative telephone surveys are an important adjunct in planning improvement of ambulatory surgical services in the future.

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1. Introduction

In ambulatory surgical patients, wound pain is a common reason for delayed discharge, unanticipated hospital admission and patient dissatisfaction [1–3]. Adequate analgesia is important as hospital admission or readmission has undesirable effects of increasing the cost of ambulatory surgery. In a study on more than 10,000 patients who had underwent ambulatory surgery, the incidence of significant pain was only 1.7% in the ambulatory centre, but up to 5.3% at 24 h postoperatively [1]. Pain control accounted for 18–25% of unplanned hospital admission or readmission [4,5] and therefore ambulatory surgical patients require a peri-operative analgesic technique that is effective, has

minimal undesirable side effects and can be easily managed away from the surgical centre [3].

It has been shown that multi-modal analgesia provided superior analgesia with a lower side effect profile [2], and over the years this analgesic regimen has been practiced in our ambulatory surgery centre. In this study, we prospectively examined the pattern of wound pain and efficacy of pain control in our patients in the next day after their operations.

2. Method

This study was performed between January 2000 and December 2001. All patients over the age of 3 years were included in this study. Before incision, patients were given a dose of diclofenac as a suppository. Peripheral nerve blocks and wound infiltration with local anaesthetic were commonly used in addition to the general anaesthetic techniques. Acute pain control was carried

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Table 1
Operations performed in day surgery centre, January 2000–December 2001

Operations	Number in children	Number in adult
Phimosis	430	–
Inguinal herniotomy	81	–
Breast surgery	–	165
Inguinal herniorrhapy	–	41
Lipoma excision	4	20
Unilateral orchidopexy	25	–
Excision of preauricular sinus	15	3
Excision of cutaneous lumps	22	3
Release of tongue tie	8	–
Endoscopic procedures	8	–
Scar revision	3	2
Miscellaneous	22	21
Total	618	255

out during the patient's stay in the ambulatory centre. Upon discharge, they were given diclofenac suppositories (0.5 mg/kg) for 2 days together with oral analgesics such as non-opioid agents for 1 week. In the case of children, paracetamol suppositories might be prescribed instead.

Table 2
Pain survey of paediatric ambulatory surgical patients

Operations	All	No pain	Mild pain	Moderate pain	Severe pain
Phimosis	430	121	268	38	3
Inguinal herniotomy	81	20	56	5	–
Lipoma excision	4	3	–	1	–
Orchidopexy	25	7	15	3	0
Excision of preauricular sinus	15	2	10	3	–
Excision of cutaneous lumps	22	12	10	–	–
Release of tongue tie	8	7	1	–	–
Endoscopic procedures	8	8	–	–	–
Scar revision	3	0	1	2	–
Miscellaneous	17	8	9	–	–
Total	613	188 (30.6%)	370 (60.4%)	52 (8.5%)	3 (0.5%)

Table 3
Pain survey of adult ambulatory surgical patients

Operations	All	No pain	Mild pain	Moderate pain	Severe pain
Breast surgery	165	59	101	5	0
Inguinal herniorrhapy	41	3	26	12	0
Lipoma excision	20	15	5	0	0
Excision of preauricular sinus	3	2	1	0	0
Excision of cutaneous lumps	3	1	1	1	0
Scar revision	2	1	0	1	0
Miscellaneous	14	7	5	2	–
Total	248	88 (35.5%)	139 (56.0%)	20 (8.1%)	1 (0.4%)

Telephone interviews were conducted about 24 h after the surgery. Nursing staff of the ambulatory surgery centre used a standardized questionnaire to enquire about the degree of wound pain, the amount of analgesia required and the level of pain control. Patients were asked to classify their postoperative pain as none, mild, moderate or severe. They were also asked whether they had returned to the hospital or other doctors. Pain was considered significant if it was described as moderate or severe. Further questions were also answered during the phone survey.

3. Results

The details of operations performed in our ambulatory surgery centre are listed in Table 1. Six-hundred and eighteen paediatric and 255 adult patients had an ambulatory surgical procedures performed. All had their procedures performed under general anaesthesia and all belonged to ASA (American Society of Anesthesiologists) class I or class II. Ten patients were admitted after the operation giving an admission rate of 1.1%. Two patients were admitted for pain control after inguinal herniorrhapy and the rest were hospitalized for reasons other than pain. Six patients were read-

Table 4
Incidence of significant pain and success of pain control in the top five performed procedures

Procedures (number of patients)	Number with significant pain (%)	Number with satisfactory analgesia in case of significant pain (% success of pain relief)
Circumcision ($n = 430$)	41 (9.5%)	37 (90.2%)
Breast procedures ($n = 165$)	5 (0.6%)	0 (0%)
Inguinal herniotomy ($n = 81$)	5 (6.2%)	4 (80%)
Inguinal herniorrhaphy ($n = 41$)	12 (29.3%)	6 (50%)
Orchidopexy ($n = 25$)	3 (12%)	2 (66.7%)

mitted within 48 h after discharge but none related to pain. There were only two patients who could not be contacted by phone on the first postoperative day giving a response rate of 99.8%. The results on postoperative pain severity in paediatric and adult patients are listed, respectively, in Table 2 and Table 3.

In the paediatric group of 613 patients, parents or patients were asked to complete the telephone survey. Altogether 9.0% ($n = 55$) complained of moderate to severe wound pain. Among these 55 patients, nine children (16.4%) did not have satisfactory pain control even after taking the analgesics provided, though their parents did not seek further medical advice for the unresolved pain. 4.7% of parents ($n = 29$) had further questions asked and 2.3% ($n = 14$) of them thought telephone survey useful.

In the adult group of 248 patients who had completed questionnaires, 8.5% of patients ($n = 21$) complained of moderate to severe wound pain and satisfactory relief by analgesics could be achieved in 62% (13/21). However, no further medical consultation was reported from those with significant pain. Two percent ($n = 5$) of adult patients had further questions for our staff and 1.2% ($n = 3$) regarded phone follow-up useful.

In the five most common performed procedures, the incidence of significant pain and efficacy of analgesia are listed in Table 4.

4. Discussion

With the introduction of ambulatory surgery, concepts for control of postoperative pain have progressed as a result of the observation that early control of pain can reduce its subsequent evolution. It has previously been demonstrated that pre-emptive analgesia was valuable in maintaining satisfactory pain control following ambulatory surgery [6]. Local anaesthetic supplementation may further decrease the severity of wound pain in the early postoperative period. However, patients might still experience significant pain after they have been discharged [3]. One of the aims of this study is to look into the issue of postoperative pain in

patients who had undergone ambulatory surgical procedures.

There are many factors that can account for postoperative pain, such as surgical and anaesthetic techniques as well as patient's characteristics [2,5]. It has been shown that postoperative pain occurred more often in young male patients, those with a higher body mass index and prolonged operations [1]. Certain types of surgery were associated with a higher incidence of incisional pain [1]. In this study, significant wound pain was reported in 64 patients (8.2%). The most common procedures associated with significant wound pain were inguinal herniorrhaphy (29.3%), orchidopexy (12%) and circumcision (9.5%). This finding is in good accordance with other studies [1,2]. Of those 64 patients, 17 (26.5%) had unsatisfactory pain relief with the current analgesic regimen but none of them chose to seek further medical attention. There was no hospital readmission for wound pain control.

Those undergoing circumcision or orchidopexy had a satisfactory pain relief of 66.7–90.2%, implying that the current analgesic protocol appeared adequate and satisfactory. In the case of inguinal herniorrhaphy, a higher failure rate of 50% was observed. Because of the high incidence of postoperative pain and significant failure rate of analgesia, we further analysed this group of patients with respect to different risk factors that might predispose to postoperative pain. In comparing the two subgroups of herniorrhaphy patients with or without significant pain, there was no significant difference between their gender, ages, and duration of operation, ASA classes, body mass indices, wound complication rate or method of anaesthesia/analgesia. However, the number of patients precludes further statistical analysis. Nonetheless, this high incidence of pain in herniorrhaphy patients reflects the need to refine the current surgical techniques or analgesic protocol.

In breast ambulatory surgery, the incidence of pain was not common and was only 0.6% in our study. Those five patients who complained of significant pain did not have satisfactory pain control at all. This leads to our suspicion of minor wound complication such as bleeding, though we could not prove this for certain.

From our results, we believe that the likelihood of pain and unanticipated admission is related more to the type of anaesthesia and analgesia, and surgical procedure rather than the patient's clinical characteristics [5]. Further studies are required to improve pain control and patient satisfaction in those high-risk procedures or patients.

5. Conclusion

Significant wound pain was reported from 64 patients (8.2%) in this telephone follow-up study. 26.5% (17/64) had unsatisfactory pain relief by the current analgesic regimen. A high incidence of postoperative pain was observed in the patients undergoing inguinal herniorrhaphy, which was indicative of the need to refine the current surgical, anaesthetic and analgesic techniques. This study also confirmed that a postoperative telephone survey is an important adjunct in planning

improvement of ambulatory surgical services in the future.

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