

Cataract surgery in the first ambulatory surgery unit of the Spanish national health system

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Cataract surgery without hospitalization in Spain is a new practice and not very widespread. Here is an analysis of the results of 372 cataract operations in the first ambulatory surgery unit under the Spanish national health system. The patients were selected according to social criteria and general and ocular health. The technique was extracapsular extraction with the intrasacular implantation of the lens. Local anaesthetic was used in all cases except six. The complications were of a similar incidence to inpatient surgery. Two cases required immediate postoperative hospitalization for systemic reasons. All patients whose second eye had to be operated on, again chose ambulatory surgery. Cataract surgery without hospitalization is a safe and satisfactory technique, with a future for expansion, especially in the Spanish health system where its implementation is still minimal.

Key words: Cataract, ambulatory surgery

Introduction

Ambulatory surgery is not sufficiently widespread in Spain. The Hospital de Viladecans has the first Ambulatory Surgery Unit and is one of the few established in the country¹.

Cataract extraction is the most commonly practised operation in our unit (see Table 1). We present the preliminary results after two years of ambulatory cataract surgery practice.

Materials and methods

Patient selection was based on three factors: ophthalmological, social and general health.

1. Ophthalmological factors: adult cataracts without associated ocular pathology which could require combined surgery.
2. General health: using anaesthetic criteria according to the American Society of Anaesthesiology (ASA)². Patients included were those classified as ASA I, ASA II, and stable ASA III.

3. Social characteristics: patients who understand and accept the procedure. Every patient gave his written agreement which manifested complete understanding of the procedure. Patients excluded were those who did not have family support, a telephone at home, or lived in a residence without easy access (for example, in a high-rise building without an elevator) or lived at a distance longer than 15 minutes by car.

A total of 300 patients underwent ambulatory surgery: representing 372 eyes, 51.6% being right eye and left eye 48.4%; 48.7% were men and 51.3% were women. Their ages ranged from 31 to 88 years of age, with an average of 70 years.

The technique used was manual extracapsular extraction, limbal approach, endosacular implant, nylon 10-0 suture, 20 mg subconjunctival gentamicin, 100 mg cefazolin and 20 mg methylprednisolone.

The surgeons were not in training.

There was an absence of associated systemic patho-

Table 1. Main grouped procedures in outpatient surgery at Hospital of Viladecans

Procedures	%
Cataract extraction	25.9
Cystoscopy	11.0
Adenoidectomy	7.9
Pilonidal cyst	4.7

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Table 2. Systemic diseases associated

	%
None	48.3
Arterial hypertension	20.5
Broncopneumopathy	13.2
Diabetes mellitus (non insulin)	4.5
Cardiovascular disease	1.9
Miscellaneous	11.6
Total	100.0

Table 3. ASA American Society of Anesthesiology classification

ASA	No. of cases	%
I	20	5.4
II	274	73.6
III	78	21.0
Total	372	100.0

Table 4. Ophthalmic diseases associated with cataract

	%
None	82.0
Glaucoma*	4.3
Age-related macular degeneration	2.2
Lacrimal obstruction	2.2
Nonproliferative diabetic retinopathy	1.1
Miscellaneous	8.2
Total	100.0

*Primary open-angle glaucoma well controlled.

Table 5. Preoperative visual acuity

Visual acuity	No. of cases	%
80/200–40/200	109	29.3
30/200–20/200	108	29.0
20/200 or minor	155	41.7
Total	372	100.0

logy in 49.3% of the cases. Among the other 50.7%, the systemic disease present (Table 2) was one of the more frequent in the general population, such as hypertension (21.5%), respiratory disease (13.2%), and non-insulin-dependent diabetes mellitus (4.6%). The association of two or more diseases was present in 11.6% of the cases. Twenty patients (5.4%) were classified as ASA I, 274 (73.7%) as ASA II, and 78 (21.0%) as ASA III (Table 3). There was associated ophthalmological disease in 18% of the cases (Table 4) such as well-controlled glaucoma (4.3%), age-related macular disease (2.2%), lacrimal obstruction (2.2%), nonproliferative diabetic retinopathy (1.1%) and other diseases (8.2%). The best corrected distance visual acuity prior to surgery was 0.4–0.2 in 109 eyes (29.3%), 0.15–0.1 in 108 eyes (29.0%), and less than 0.1 in 155 eyes (41.6%) (Table 5).

Table 6. Intraoperative additional medication

Medication	No. of cases	%
None	183	49.2
Anxiolytic	118	31.7
Antihypertensive*	31	8.3
Atropine	13	3.5
Association	27	7.3
Total	372	100.0

*Arterial hypertension.

Table 7. Type of anaesthesia

Type	No. of cases	%
Retrobulbar + facial acinesia	364	97.8
Peribulbar	2	0.5
General*	6	1.6

*Endotracheal intubation.

The patients were asked to attend, without any breakfast, one hour before the time of surgery at the preanaesthetic room. There parenteral premedication was administered (75 mg diclofenac, 150 mg ranitidine, 10 mg metoclopramide) and dilatation drops (tropicamide 1%), fenilephrine 10%, and diclofenac 0.1%, one drop every 15 min). Vital signs were also measured. The anaesthesiologist was the person responsible for deciding on the need for additional medication (Table 6). Almost half of the patients (49.2%) did not need any more drugs. The more commonly used drugs were anxiolytics, such as dehydrobenzoperidol and midazolam, (31.7%), arterial hypotensives, such as nifedipine, (8.3%) and atropine, (3.5%). Two or more drugs were given to the rest of the patients (7.3%).

Retrobulbar anaesthesia was employed in 364 of the patients, using equal parts of 2% mepivacaine plus 0.75% bupivacaine up to a total of 3–4 ml, and hyaluronidase. The method used was retrobulbar plus facial block (modified O'Brien procedure) followed by 15 min of orbital compression using the Gills balloon. Only in six patients was general anaesthesia used because of anxiety or rejection of local anaesthesia (Table 7). Local anaesthesia was carried out by the ophthalmologist.

Once the operation was finished the patient went to the adjoining recovery room. Patients were discharged from hospital approximately 3 h after admission. They were advised to keep to relative rest at home and use oral paracetamol if needed.

Preoperative complications are shown in Table 8. There were no complications in 352 cases. Among the few complications presented, only 4.6% were due to capsular rupture, 1.9% of them being associated with vitreous loss which needed anterior vitrectomy and implantation of lens in sulcus. The cause of immediate hospitalization of two patients was systemic disease. There was only one patient who used the direct telephone because of ocular discomfort.

The postoperative follow-up was for at least three

Table 8. Precocious intra- and postoperative complications (24 h after intervention)

Type	No. of cases	%
None	352	94.5
Posterior capsular rupture*	10	2.7
Vitreous loss	7	1.8
Admitted for systemic complication	2	0.6
Telephone call because of pain	1	0.3
Total	372	100.0

*Without vitreous loss.

Table 9. Late postoperative complications

Type	No. of cases	%
None	319	85.8
Uveitis*	29	7.8
Capsular opacity	8	2.2
Retinal rupture	5	1.3
Suture dehiscence	2	0.5
Glaucoma	2	0.5
Temporal keratopathy	2	0.5
Cystic macular oedema	2	0.5
Subluxated IOL [†] and/or macular hole	2	0.5
Others	1	0.3
Total	372	100.0

*Fibrinous pupillar membrane.

[†]Intra ocular lens.

weeks (being at 24 h, 7 days, and 21 days post surgery, which is the same as for inpatients). Postoperative complications are shown in Table 9. There were no postoperative complications in 319 cases (85.8%). Postoperative anterior uveitis with fibrine membrane responsive to topical steroids was observed in 29 cases (7.8%). There remained posterior synechiae in some cases. Complications such as macular cystic oedema, posterior capsular opacity, keratopathy, glaucoma or macular hole were present in 6.4% of the cases, a similar incidence as for inpatients.

We were able to assess final corrected visual acuity in 131 eyes (the rest of the patients were sent to their ophthalmologist) and it was equal to or more than 0.5 in 84% of them.

Every patient operated on for the second eye chose ambulatory surgery as in the first eye.

Discussion

Cataract extraction is suitable for ambulatory surgery³. It is the most commonly practised operation in our unit. Local anaesthesia provides great comfort and a fast recovery although general anaesthesia can be also used. There is no difference among sexes, neither is there a top age limit. Paediatric patients are admitted to the hospital. Very old patients are preferably operated on in an

ambulatory setting because of the need to minimize the separation from their environment.

Social status and family support are the essential factors for patient selection. Systemic disease must be severe or highly altered to hinder ambulatory surgery. Ocular disease is a very rare cause of exclusion and we only eliminated those cases with a history of severe surgical complications in the fellow eye (for example, massive suprachoroidal haemorrhage).

The quality of the technique is more important than the technique used.

The peroperative complications presented at almost the same frequency as in other publications^{4,5}. We think that there could be a direct relationship between the ambulatory approach and a complication such as rupture of the suture (two cases in our study). Maybe the introduction of phacoemulsification could improve the results.

It is important to emphasize the low utilization rate of the direct telephone⁷.

The postoperative phase is almost the same as inpatients who are discharged 24 hours after admission and the medication is also the same. There is a similarity between postoperative complications in ambulatory and ordinary surgery^{6,7,8}. We think that ambulatory surgery is the way forward for cataract extraction because the difficulties are mainly related to hospital management.

In our unit the substitution index for cataracts of inpatient surgery by outpatient surgery is higher than 50%⁹ and is growing.

References

- Sierra GE. Cirugia Ambulatoria. Una solución? *Med Clin (Barc)* 1992; **5**: 579-81
- Tinker JH, Roberts SL. Anaesthesia Risk. In: de Miller R ed. *Anaesthesia*, Barcelona: Ed. Doyma, 1988; 715-40
- Javitt JC. Outcomes of eye care from Medicare data. *Arch Ophthalmol* 1991; **109**: 1079-80
- Salvador A, Fossas M. Optimization of Public Health Resources. Out-patient Cataract Surgery. XV European intraocular implant lens congress, Valencia. Book of abstracts. 1991; vc-33, 173
- Acheson JV, McHugh JD, Falcon MG. Changing patterns of early complications in cataract surgery with new techniques: a surgical audit. *Br J Ophthalmol* 1988; **72**: 481-4
- Naesec K, Hansen TE, Nielsen NE. Visual outcome and complication following intracapsular and extracapsular cataract extraction. *Acta Ophthalmol* 1990; **68**: 733-8
- Javitt JC, Vitale S, Canner JP, et al. National outcomes of cataract extraction. Endophthalmitis following inpatient surgery. *Arch Ophthalmol* 1991; **109**: 1085-9
- Javitt JC, Vitale S, Canner JP, et al. National outcomes of cataract extraction. I. Retinal detachment after inpatient surgery. *Ophthalmology* 1991; **98**: 895-902
- Colomer J, Alonso A, Serra A, Morer F. Ambulatory surgery: The need for indexes of substitution. *Ambulatory Surgery* 1993; **1**: 22-4