

Ambulatory Anesthesia: Experience at University of São Paulo (Hospital Universitário)

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THE UNIVERSITY of São Paulo is a public institution that is under the auspices of the São Paulo state government. In this retrospective study the total number of patients undergoing operations in the main operating theaters during a 1-year period from 1995 to 1996 was 3,344. Of these operations, 987 (29.5%) were performed on an ambulatory (day-case) basis (Fig 1). The population involved in this ambulatory study belonged to the University of São Paulo community (41.5%); to the Butantã suburb community, which is also part of the hospital catchment area (55.7%); and to a small group of patients who had private health insurance (0.3%) or did not belong to one of the two major communities served by the hospital but were issued special authorization to be operated on at University Hospital (1.6%). Totally private patients accounted for only 0.7%. Among all the ambulatory cases studied the three most common age groups were: 0 to 10 years (30%), 21 to 30 years (16%), and 31 to 40 years (14%). Of all the scheduled surgical procedures, there was a 23% incidence of cancellations. Therefore, only 77% of the scheduled cases were actually completed. The majority of the cancellations were owing to medical problems (eg, uncontrolled hypertension, upper airway infections, and problems that involved "operational difficulties"; Table 1).

In terms of the anesthetic techniques, 38% were performed under local anesthesia by surgeons. In those cases monitored anesthesia care (MAC) provided by an anesthesiologist was not requested. General anesthesia accounted for 35% and regional techniques for an additional 16%. The remaining cases (11%) were performed using combined anesthetic techniques. Commonly

used anesthetic drugs included propofol and etomidate for hypnosis; midazolam for anxiolysis; atracurium, vecuronium, and succinylcholine for muscle relaxation; nitrous oxide (N₂O), isoflurane, and halothane (the primary inhaled anesthetics); and fentanyl and alfentanil for intraoperative analgesia.

The recovery period was divided in two phases. All patients were required to spend at least 30 minutes in the postanesthesia care unit (PACU; phase I recovery) to ensure adequate postoperative pain control. An anesthetist was always requested to discharge patients from the PACU to the ambulatory unit (phase II recovery). Intravenous nalbuphine or intramuscular diclofenac were used for postoperative pain control in adults and diclofenac suppositories were used for children (usually administered before the end of the surgical procedure).

Unanticipated hospitalizations occurred most frequently in cases performed under general anesthesia (13%), followed by those under central neuraxis blockade, combined techniques, MAC,

Table 1. Common Causes of Cancellations of Patients Scheduled for Ambulatory Surgery at the University of São Paulo Hospital, Brazil

Causes	(%)
Hypertension	4.4
Upper airway infection	4.2
Nonresident of catchment area	2.4
Surgeon's problems (eg, scheduling problems, unexpected complexity of cases, difficulty in reaching hospital [traffic])	2.0
Nonfasting (failure to comply with instructions of no food or drink)	1.2
Hyperthermia	1.1
Late in schedule	1.0
Miscellaneous (eg, pediculosis, respiratory tract infection, wheezing, patient refusal, v. ectopis, diarrhea, difficult intubation, inadequate clinical condition, material not available, no adult scolding, allergies, peribulbar hemorrhage, coagulopathy, lack of electricity [power generator out of order])	3.4

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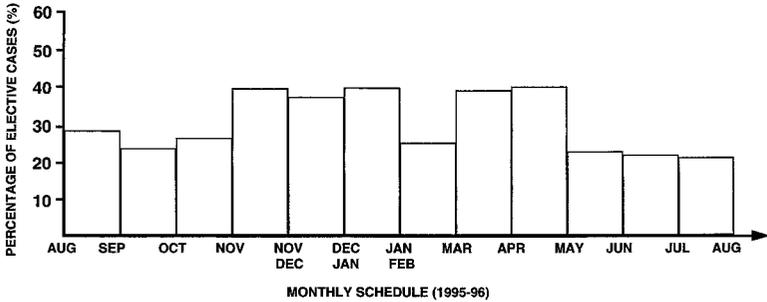


Fig 1. Ambulatory surgery at the Universidade de Sao Paulo from 1995 to 1996.

and peripheral nerve blocks. Surgeons (56%) more frequently requested overnight hospitalizations than anesthesiologists (36%), and 9% of the unanticipated hospitalization were caused by late scheduling (according to the nursing staff in the ambulatory unit). Hemorrhoidectomies, lower limb venous stripping, and lower extremity procedures performed under epidural anesthesia were responsible for a disproportionately high percentage of the unexpected hospitalizations. Most of the pediatric cases that resulted in unexpected hospitalizations had both received a combined anesthetic technique and had been operated on in the afternoon. To be discharged on the day of surgery, the patient must have met the discharge criteria before the ambulatory surgery unit closed at 6:30 PM.

The occurrence of postoperative nausea and vomiting and failure to adequately control pain were the most common causes of prolonged stays in the ambulatory surgery unit and for unanticipated hospitalizations. The nursing staff involved in the ambulatory unit had a very well-organized follow-up program that included discharge instructions and follow-up interviews. Depending on the type of surgical procedure (eg, hernioplasties, varicolectomies, hemorrhoidectomies) there was usually an interview scheduled on both the third or fourth postoperative day.

In conclusion, there are still many operational problems that must be taken into account when one is aiming to maximize ambulatory surgery at a public institution in Brazil. The physician and nursing performances are strongly influenced

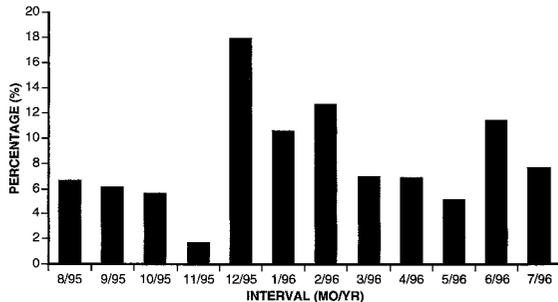


Fig 2. Ambulatory surgery procedures that use combined general-regional anesthetic techniques.

by the hospital bureaucracy and interfering factors still play important role in cancellations. The trend toward an increased number of ambulatory surgical procedures to be performed under combined anesthetic techniques (Fig 2) suggests that

the staff anesthesiologists are becoming more familiar with these techniques. The profile of training centers in Brazil is changing with the gradual breakdown of traditional dogma regarding the most acceptable anesthetic techniques.