EDITORIAL

Ambulatory Chest Surgery

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Ambulatory surgery is defined by Spanish Royal Decree 1277/2003 as any therapeutic or diagnostic surgical procedure performed within a single working day, and should not require more than 12 hours, including the postoperative recovery period.

Of the alternatives to conventional hospitalization that have been proposed in recent decades, the practice of ambulatory surgery (also referred to as same-day surgery or outpatient surgery) is becoming more widespread in Spain and internationally. That said, until relatively recently, ambulatory chest surgery was performed very infrequently in Spain, and there have been few references to ambulatory mediastinoscopy in the international medical literature since the first important study was published by Vallières et al in 1991.

The fact that ambulatory chest surgery is not included in major outpatient surgery programs has been attributed by Pun to a numbers of factors. Medical reasons include anatomical complexity, prolonged postoperative recovery, and the frequent need for negative-pressure thoracic drainage—not to mention the possibility of an air leak from the fully expanded lung has not been ruled out, and provided mechanical-suture closure is airtight.1,7

In a prospective, nonrandomized study, Russo et al10 demonstrated that thoracic drainage tubes could be withdrawn within 90 minutes of video-assisted lung biopsy in selected patients. Blewett et al11 reported no complications and same-day discharge for 32 patients who...
underwent open lung biopsy and from whom thoracic drainage tubes were withdrawn immediately after surgery. Chang et al.24 published a study of 62 outpatients who underwent video-assisted lung biopsy for the purpose of diagnosing diffuse or nonspecific lung nodules. Within 8 and 24 hours of the operation, respectively, 72.5% and 22.5% of patients were discharged. Only 1 patient had to be subsequently readmitted (for pneumothorax)—representing, respectively, admission and readmission rates of 1.7% and 1.6%. These results—which confirm our own experience—indicate that video-assisted lung biopsy can be safely and effectively performed on most patients in an outpatient setting, with minimum morbidity. This, in turn, would undoubtedly improve diagnostic rates for patients with diffuse interstitial lung disease.

In recent years, video-assisted thoracic sympathectomy has come to be widely used as a treatment for palmar and axillary hyperhidrosis and facial blushing.25 Even though it is generally carried out on young, healthy individuals, a hospital stay of 1 night is usually required as a consequence of pain, nausea, and vomiting. The key to the inclusion of this treatment in an outpatient surgery program, however, is the use of a good anesthesia technique that includes premedication, a general analgesic, intercostal infiltration, and antiemetic agents.20,21

Graham et al.,22 who were the first to describe their experience with outpatients undergoing transsternal endoscopic sympathectomy, reported an admission rate of 10% for the series of 20 patients. Shortly afterwards, Hsia et al.23 described their experience of ambulatory surgery performed on 47 patients with palmar hyperhidrosis, later they reported on 262 patients with axillary hyperhidrosis.24 All but 3 of the operations were bilateral, and no patient required hospitalization. Dougall et al.25 in a recently published study of 180 outpatient thoracic sympathectomies, reported that just 3 patients (1.7%) had to be admitted. For a series of 309 ambulatory consecutive sympathectomies, Baumgartner and Toth26 reported admission and readmission rates of 0.3% and 1.2%, respectively. In our study,27 once air leaks had been managed, drainage tubes were removed in the postoperative recovery room after ambulatory bilateral sympathectomies on 38 patients. None of these patients had to be admitted, and just 1 patient had to be readmitted after 9 days, for drainage of a hemothorax. The results from these studies would indicate that bilateral endoscopic thoracic sympathectomy is a suitable candidate for ambulatory surgery. Taking ambulatory sympathectomies a step further, Elia et al.28 recently performed this procedure on 15 patients breathing spontaneously under local anesthesia. Bearing in mind that thoracic drainage is the most important factor in determining whether a patient may be discharged, the indications for an ambulatory chest surgery program can be broadened by developing an early tube withdrawal protocol. Tovar,29-31 of the University of California, published 2 articles that suggest that ambulatory surgery should even be considered for lung resections. Ambulatory surgery indications could undoubtedly be broadened as chest surgeons to take into account the benefits of outpatient procedures, which go beyond the issue of merely reducing the time spent in hospital. A successful ambulatory chest surgery program requires the full commitment of outpatient surgery—a fundamental component of which is anesthesia, which should aim to awaken patients rapidly, so that they can be discharged within a few hours of recovery from surgery without any signs of pain that will not cause undue anxiety. This requires a combined approach to anesthesia that should include inhaled agents (sevoflurane, nitrous oxide), intravenous anesthetic drugs (propofol), short-acting opioids (alfentanil, remifentanil), and short-acting relaxants (atracurium, succinylcholine). Postoperative analgesia should also be administered in the recovery room; meperidine and morphine are not recommended, however, as these drugs delay full recovery of consciousness. The patient should remain in the outpatient surgery unit until discharge criteria have been met, specifically the following: satisfactory blood pressure, oxygen saturation, and heart rate; fully recovered consciousness; satisfactory liquid intake tolerance; ability to walk unassisted; spontaneous micturition; little or no pain; and no signs of exacerbation in associated diseases such as ischemic heart disease or diabetes. Discharged patients should have telephone access to the on-duty anesthetist to be able to ask about any problems they may experience.

The financial costs of major ambulatory surgery should also be considered. In theory, an increase in the percentage of outpatient operations will imply cost savings for the health care system and reduce per-patient costs. The financial impact will depend on a hospital’s standing policy in regard to the stay required for the same procedure performed on admitted patients. In our study of mediastinoscopy, lung biopsies, and sympathectomies, savings were minimal, given that we compared the cost of outpatient surgery to the cost of stay for 1 day prior to surgery. However, when the outpatient surgery cost was compared to the cost of the mean stay in Spanish hospitals with a similar level of activity, significant savings of €204 per patient were calculated. In our estimate of financial impact, only variable hospital costs were considered, with fixed costs excluded on the assumption that these would be equivalent to those for conventional hospitalization. Also excluded was the real benefit implied by beds being left available for the admission of other patients.

In conclusion, despite the growth in ambulatory surgery, the potential for ambulatory chest surgery in Spanish hospitals remains unrealized, even though the use of the video-assisted procedure is well established.32,33 Crucial to the success of ambulatory chest surgery in Spanish hospitals is the development of a protocol that can be introduced in an outpatient surgery unit that is already up and running. Protocols may vary, but inclusion criteria will undoubtedly be added as experience is acquired. The risk of complications possibly going undetected will be minimized if the patient understands and is willing to undergo the ambulatory procedure and has family support.
and if telephone and personal postoperative follow-up is provided for. In the future it is likely that pleural effusion
diagnosis, localized pleural and mediastinal lesion care, 
lung and esophageal cancer staging, and solitary lung
nodule resections will be included as outpatient surgery
procedures, in addition to sympathectomy, mediastinoscopy
and video-assisted lung biopsy.

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