Abstract
We reviewed our experience with video-mediastinoscopy as an outpatient procedure. From November 2002 to May 2003, 20 video-mediastinoscopies were performed on an out-patient basis. There were no operative deaths. No surgical complication is reported in a patient requiring readmission and antibiotic therapy for left pneumonia. In conclusion, video-mediastinoscopy can be safely performed on an outpatient basis in selected patients with mediastinal involvement.

Keywords: Video-mediastinoscopy; Outpatient; Lymphadenopathy

1. Introduction
Video-mediastinoscopy is a valuable technique for the evaluation of mediastinal masses and adenopathy. The complication rate is low, and serious bleeding, when it occurs, is recognized immediately and managed at the time of surgery. Consequently, this procedure has traditionally been performed in the inpatient setting.

The present report describes our experience with outpatient video-mediastinoscopy.

2. Material and methods
The outpatient surgery facility at Hôpital Européen Georges Pompidou, Paris, France is a hospital-controlled independent unit with its own separate facilities and personnel for pre-operative, intra-operative, and post-anesthesia care unit. Video-mediastinoscopy is applicable to all patients undergoing routine mediastinoscopy, including patients requiring diagnosis of mediastinal masses or adenopathy and staging of known or suspected bronchogenic carcinoma. Bronchoscopy, trans-bronchial and trans-thoracic needle aspiration were performed before surgery, when indicated, but a positive diagnosis was not obtained in this group of patients.

The selection of patients for outpatient mediastinal biopsy was performed by the surgeon and the anesthesiologist according to the social and clinical status and baseline investigations (chest X-ray, electrocardiogram, blood tests). A questionnaire was completed and presented by the patient during pre-anesthesia assessment. All patients were seen by the anesthesiologist prior to surgery. No specific age criteria were applied. The surgical risk for each patient was evaluated according to the American Society for Anesthesia (ASA) classification. Patients with major cardiopulmonary or systemic disorders were not accepted for out-patient procedures. As a rule, only ASA I and ASA II were accepted.

Patients were admitted in the out-patient surgical unit the morning of surgery. All procedures were performed under general anesthesia with single endo-tracheal intubation, with standard monitoring, personnel and equipment available for immediate sternotomy or thoracotomy.

A family member or friend was available to transport the patient to and from the hospital and remain with the patient during the first discharge post-operative night. All patients were given a dedicated number which they could use in case of need.

Video-mediastinoscopy (VM) was first described in 1995 by Dahan in Toulouse, France. A mediastinoscope incorporated the video-attachments within the handle of...
the instrument, allowing the surgeon to control the procedure on the monitor. The surgeon's assistant controls the video-mediastinoscope permitting the surgeon to operate with both hands.

The surgical procedure is identical to that described by Carlens or Pearson [1,2]. Although massive bleeding is an exceedingly rare complication, all patients were prep and drapped and ready for sternotomy in case of need.

3. Results

From November 2002 to May 2003, 20 patients (2 females and 13 males) between 21 and 78 years old (mean age 45 years) underwent surgical biopsy for mediastinal lesions by video-mediastinoscopy.

All patients had bronchoscopy with local anesthesia a few days prior to the procedure. These 20 procedures represent 40% of the total number of the mediastinal biopsies performed during this period in our department.

Patient characteristics, clinical, histological and radiological results are presented in Table 1. All patients had a small mediastinal tube (redon) positioned at the end of surgery which was removed 3 h later. Surgical time was between 45 and 100 min with a mean of 60 min. The period of observation in the post-anesthesia recovery room ranged from 50 to 120 min.

No operative death or surgical complications are reported in this group of patients. All patients were discharged from the outpatient unit after post-operative chest X-ray and with a prescription for analgesics. All patients were contacted in the morning following surgery and questioned on their post-operative course.

One patient returned to the hospital with suspected left pneumonia on the first evening following surgery. This patient required re-admission, bronchoscopy and antibiotic therapy and recovered fully.

The remaining patients were seen on post-operative day 4 in the outpatient unit and histological results reported.

4. Comment

Mediastinoscopy is a frequently used diagnostic procedure in the assessment of mediastinal lymphadenopathy. Ashbaugh [3] reported an operative mortality of 0.1% in a series of 6490 cases and numerous studies confirm this to be a relatively brief and safe procedure, leaving the patient with minimal post-operative discomfort [4,5].

Vallières and associates [6] describe mediastinoscopy performed in an out-patient setting in 1991 with 158 patients, representing 21% of their total mediastinoscopy patient population over a 9-year period. There were no operative deaths and six complications (3.8%). Five of these complications, including atrial fibrillation, cervical hematomata, pulmonary artery branch injury, were controlled by local packing and two cases of hemoptysis, were found before patient discharge.

The most recent published series [7], describes 108 mediastinoscopy patients admitted to an out-patient surgery center and 86 (80%) of these were discharged the same day. One patient was admitted because of post-operative mediastinal venous bleeding, which required compression for 24 h, and 19 other patients were admitted without strict medical indications. Two patients were re-admitted later the same day after discharge, because of minor wound bleeding, which was easily controlled by infiltration with adrenalin. Other studies report between 1 and 4% of complications requiring re-admission [8–10].

The only video-mediastinoscopy series reported in the literature is from Venissac and associates in Nice, France in 2000 [11]. However, this series does not describe video-mediastinoscopy as an out-patient procedure.

Our results confirm outpatient video-mediastinoscopy to be a safe procedure with minimal morbidity. There was no operative mortality and morbidity was low. The only complication observed was not directly related to the surgical procedure.

We prefer placement of a small mediastinal (redon) tube in all patients at the end of surgery permitting the assessment of blood loss. Routine chest X-ray is performed prior to discharge to eliminate the presence of a pneumothorax. Cost saving of this procedure was considerable because at our institution inpatient video-mediastinoscopy requires two nights hospitalization if no complications are present. It is of interest to note that out-patient charges are universally lower than in-patient fees for similar services. Finally, patients undergoing same day video-mediastinoscopy were extremely satisfied with the procedure.

In addition, the advantages of video-mediastinoscopy are: a safer and more efficient teaching of the technique,
increased interest and communication during the procedure by scrub nurses and anesthesiology personnel. Furthermore, optimal visualization of mediastinum, the possibility of operating with both hands, the control of bleeding safely with clips are but further advantages.

In conclusion, we consider outpatient video-mediastinoscopy biopsy feasible for patients in good general condition. The procedure should be performed only if all necessary means for thoracotomy and/or sternotomy are immediately available.

References


Appendix A. ICVTS on-line discussion

Author: Dr. Marcello Migliore, university of Catania, Dept. of Surgery, Via Passo Gravina 187, Catania, 95124 Italy

Date: 23-Jun-2004

Message: I agree with the authors regarding the advantage to use the video-mediastinoscope, and the possibility to perform the procedure as outpatient surgery.

First of all there is one important point that I think should be clarified: you stated that video-mediastinoscope was first described in 1995 by Dahan in Toulouse, France. I am using the so called Lerut videomediatinoscopy by the Storz company. The concept of video mediastinoscopy was presented by the Leuven group already in 1993 at the First International symposium on thoracoscopic surgery which preceeded the annual STS meeting in San Antonio January 22, 1993. For that meeting a publication was made in Ann Thorac Surg. 1993 Sep;56(3):721-30. In this paper it was already mentioned the principle of videomediatinoscopy as you can read in the abstract. We perform videomediatinoscopy in day night surgery and we have never had the necessity to use the redont. What is the reason that you use the redont?

I believe that the period of observation in the post anaesthesia room is not the total postoperative period that the patient spent in the hospital. How many hours was the hospital stay postoperatively?

Author: Dr. Mohamed Ismail, Mansoura University, Department of Cardiothoracic Surgery, 71 el-sedek st., Ahmed Maher st., Mansoura, 050 Egypt

Date: 02-Jul-2004

Message: My first comment about the history of video-mediastinoscopy, as you mentioned by (Dahan in Toulouse, France in 1995). I think it should be supported by a reference.

The second comment is about reference [7] in the article. It is obvious that there is no title for the reference. The title is (Ambulatory mediastinoscopy). I don’t agree that the only video-mediastinoscopy series reported in literature is from Venissac and associates in 2000. I think that many others have shared that event as Hurtgen and associates in 2002 [1], Lardinois and associates in 2003 [2], Venissac and associates in 2003 [3], and Leschberger and associates in 2003 [4].

References