Video-assisted mediastinoscopy: A useful technique for paratracheal mesothelial cysts

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Mesothelial cysts represent 5% to 10% of mediastinal tumors, and almost all are asymptomatic.¹ Despite their benign behavior, surgical excision is the accepted treatment for symptomatic cysts or uncertain diagnosis. There are some concerns about indications for surgery in symptom-free patients with typical aspect on computed tomography.² In the past decade, the advent of the video-assisted endoscopic techniques has simplified the treatment. Video-assisted thoracoscopic surgery has been reported to be a safe and effective procedure.³ We describe our first 3 cases of successful complete excision of mesothelial paratracheal cysts with video-assisted mediastinoscopy (VAM), including technical details.

Patients and Technique

Since 1992, a total of 13 patients have been operated on for mesothelial lesion. Of these, 3 symptom-free men (23%) had paratracheal lesions. Chest radiography and computed tomographic scan were consistent with the diagnosis of mesothelial cyst (Figure 1). Examination with a fiberoptic bronchoscope was done routinely, and 2 patients underwent magnetic resonance imaging. VAM was selected with curative intent according to a standard technique previously described elsewhere.⁴ The procedure was conducted with the patient under general anesthesia with a tracheal armed intubation. The patient was in the dorsal decubitus position with a roll under the shoulders to provide extension of the cervical area. Instruments for a potential sternotomy were available in the operating room. VAM was carried out with a rigid Dahan/Linder mediastinoscope (model 8783.401; Richard Wolf, Knittlingen, Germany). With the mediastinoscope working as a 2-bladed speculum, the inferior valve could be opened to permit increasing exposure of the mediastinal structures (Figure 2). The videomediastinoscope was equipped with a distal fiberoptic lighting system and coupled with a mono-CCD video camera (model INH 002756; Karl Storz-Endoskope, Tuttlingen, Germany), which facilitated viewing by all team members. After a small cervicotomy, paratracheal fascia opening, and finger blunt dissection along the trachea, the videomediastinoscope was inserted and the inferior valve was opened. The assistant took control of the videomediastinoscope,

Figure 1. Computed tomographic scan of patient 1.

Figure 2. Videomediastinoscope opened with grasp instrument inside.

allowing the surgeon to continue dissection with both hands under direct visual control. Generally, a metal, blunt-tipped coagulation-suction device and an endoscopic swab (Peanut; Auto-Suture, Elancourt, France) or grasp were used for dissection. Initially the cyst was left intact, allowing lateral dissection from the trachea and mediastinal fat. It was then punctured and aspirated. The lesion was extracted entirely, and its adhesions to the pericardium were clipped. After hemostasis was obtained, the cervicotomy was closed with no drainage. Histopathologic examination demonstrated a benign mesothelial cyst in all cases. No operative or postoperative incidents were noted. Mean postoperative stay was 2 days. No recurrences were noted in a mean 24-month follow-up (Table 1).

Discussion

Mesothelial cysts are benign lesions with heterogeneous distribution within the thorax.¹ Despite their benign behavior, certain

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TABLE 1. Patient characteristics

Patient	Age (y)	Size* (mm)	VAM (min)	Postoperative stay (d)	Follow-up (mo)
1	75	55 × 35	100	2	36
2	74	80 × 60	105	3	32
3	51	40 × 30	110	1	6

*By computed tomographic scan.

complications do support a surgical indication. Atypical cysts located near the tracheobronchial tree can cause severe compression of the main right bronchus and partial erosion of the right cardiac wall or superior vena cava.⁵ Asymptomatic lesions may best be treated with surgery in cases of potential risk of compression on contiguous structures or particular habits of patients that increase the risk of rupture.⁶ In our series, the first 2 patients had significant vena caval compression, and the third was a professional diver.

Surgical treatment has improved. Video-assisted thoracoscopic surgery allows complete excision of almost all cysts and exposes patients to a shorter stay and improved mortality and morbidity relative to thoracotomy.³ Sarin⁷ in 1970 reported the first successful removal of a pericardial cyst by mediastinoscopy. Since then, this method has been ignored or at least used only in highly selected cases. Recently, Urschel and Horan⁸ in 1994 reported an experience with 3 patients: in 1 case, a nearly complete excision was obtained with biopsy forceps in a piecemeal method; in the other 2, sclerosing agents were instilled after cystotomy and drainage. No recurrences were noted. Smythe and colleagues⁹ in 1998 reported the successful removal of nearly 80% to 90% of the lesion for 3 mediastinal cysts. The patients were discharged the same day, and no recurrences were noted.

Conventional equipment for mediastinoscopy permits only one-handed surgical maneuvers through the tight operative channel. The operative field is very small, and only the surgeon can

view through mediastinoscope. This limitations cannot ensure the dissection and resection of the entire cyst.

The best way to ensure that there will be no recurrence is complete excision. There is no guarantee that the surrounding tissue will absorb the fluid secreted by the remaining wall. VAM allows bimanual handling, insertion of several 5-mm instruments, and better visualization that helps in mediastinal dissection. Furthermore, VAM is safe. In our previously reported experience,⁴ there were no deaths and minimum morbidity (0.83%).

Despite our limited experience with VAM for paratracheal mesothelial cysts, the results are promising. VAM has some advantages in comparison with video-assisted thoracoscopic surgery, especially for mesothelial cysts encountered in the anterosuperior or middle mediastinum, which are accessible to VAM. The technique is also helpful in teaching and training, which is advantageous for those who perform the procedure only occasionally.

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