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Bilateral simultaneous VATS for complete resection of bilateral posterior mediastinal bronchogenic cyst: A case report



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ABSTRACT

INTRODUCTION: The mediastinal bronchogenic cysts represents 50%–60% of mediastinal cysts and rarely occurs in the posterior mediastinum. The final surgical resection is indicated for symptomatic patients and is recommended for some asymptomatic patients in order to establish the diagnosis and to avoid any subsequent complications.

CASE PRESENTATION: We report a case of 17 years-old male suffering from bronchogenic cysts of the mediastinum. The patient was admitted to our hospital complaining with dry cough and dyspnea; CT scan showed a cystic mass in posterior mediastinum. To achieve a correct diagnosis and to prevent the risk of complications, a complete surgical resection was performed by using bilateral simultaneous VATS. **DISCUSSION:** Bronchogenic cysts manifest as solitary or multiple lesions, majority of which are located in the mediastinum while sometimes can occur in the lung parenchyma. They are usually asymptomatic and casually discovered at chest X-ray or CT scan. The most common complications are infections, pneumothorax and hemoptysis. The complete surgical resection is the only radical and definitive treatment of the bronchogenic mediastinal cysts. VATS permits good exposure of the thoracic cavity including the mediastinum and better evaluation of the anatomic relationship. The absence of intra and postoperative complications, the reduction of pain in the early postoperative period demonstrate the security of this approach.

CONCLUSION: Bilateral simultaneous VATS for resection of bilateral posterior mediastinal bronchogenic cyst may be a useful approach. In our case no intra and post-operative complications occurred and patient discharged home on 4 rd day.

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1. Introduction

Bronchogenic cysts of the mediastinum represent 50%–60% of the mediastinal cysts and they seldom arise in the posterior mediastinum [1]. Definitive surgical resection is indicated for symptomatic patients and is advisable for some asymptomatic patients in order to establish diagnosis and to prevent complications [2]. Open thoracotomy has been replaced by thoracoscopic excision of bronchogenic cyst, however, there are no clear indications in the management of bilateral mediastinal bronchogenic cysts. Video-assisted thoracoscopic surgery is safe and feasible with minimal morbidity [3].

2. Case presentation

A 17-year-old man was admitted in our hospital with dry cough and exertional dyspnea. Chest X-ray showed a mass in the posterior mediastinum. Further investigation with a thoracic computed axial tomography documented a bilateral posterior mediastinal cyst. The patient underwent surgical complete resection using bilateral simultaneous three-portal VATS (video-assisted thoracoscopic surgery), under general anesthesia by use of one lung ventilation, with patient in the lateral decubitus position; ultrasound-assisted (US) intercostal nerve block and continuous elastomeric pump infusion of morphine were used to achieve analgesia. Thoracoscopy was introduced in the left hemithorax through a trocar at the mid axillary line of the 6th intercostal space. Endoscopic instruments were introduced through an incision in the anterior and posterior axillary line of the 4th and 7th intercostal space respectively for the dissection of the cyst sac from the structures to which it was attached. Before lung re-expansion, one chest tube was placed under direct vision. In second time, the patient was moved to the opposite lateral

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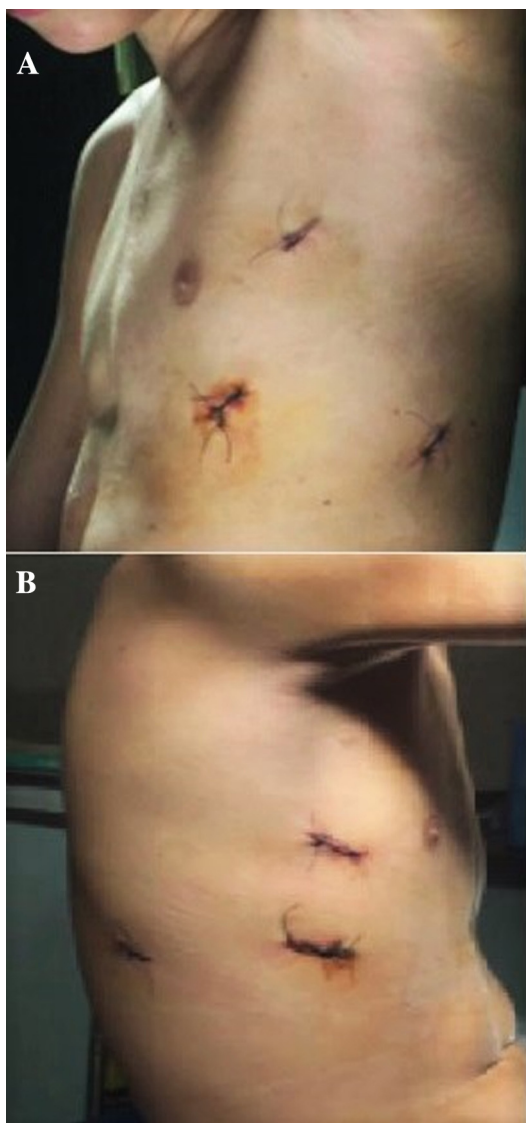


Fig. 1. A-B) Bilateral three-port access.

decubitus position, and thoracoscopy was performed in the right hemithorax through the same access performed on the contralateral side; slight aspiration of the cyst and removal of its contents under direct thoracoscopic view greatly facilitated cyst manipula-

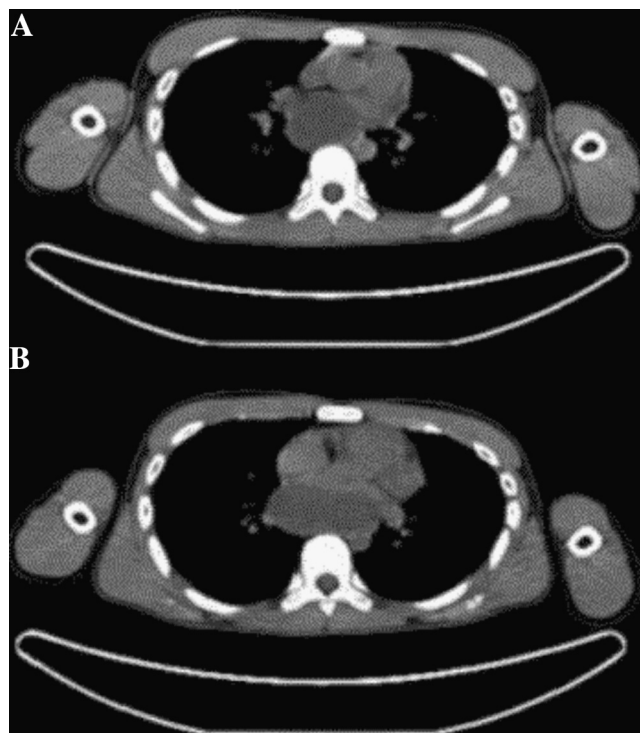


Fig. 3. A-B) Chest CT, mediastinal window.

tion and subsequent complete resection. One chest tube was left in place. The post-operative course was uneventful with little wound pain. Chest tubes were removed within 72 h and the patient was discharged on the fourth post-operative day. The histological diagnosis was confirmed as bronchogenic cyst. No recurrence has been observed (Figs. 1–3).

3. Discussion

Bronchogenic cysts manifest as solitary or multiple lesions, majority of which are located in the mediastinum while sometimes can occur in the lung parenchyma [4]. Macroscopically, they may appear uni or multilocular and contain clear fluid, hemorrhagic secretions or air. They are usually asymptomatic and casually discovered at chest X-ray or CT scan. However, complications are relatively frequent and severe due to relationship with adjacent structures. The most common complications are infections, pneumothorax and hemoptysis. The complete surgical resection is the

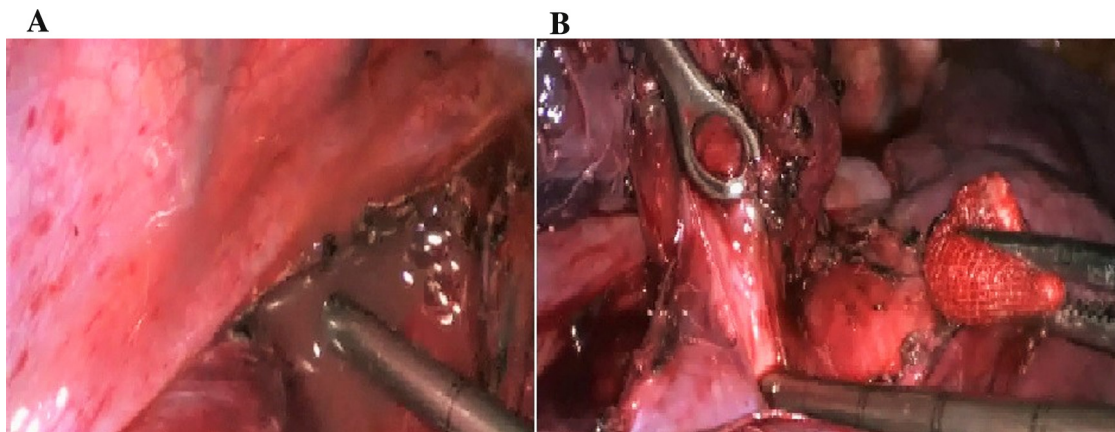


Fig. 2. A-B) Surgical exeresis and fluid aspiration.

only radical and definitive treatment of the bronchogenic mediastinal cysts. It allows suppression of symptoms, achievement of a diagnosis based on histologic examination and prevention of complications. Actually Video assisted thoracoscopic surgery is the major therapeutic approach to perform pulmonary lung lobectomies, wedge resections for peripheral pulmonary nodules and it is also useful in the treatment of primary pneumothorax. VATS permits good exposure of the thoracic cavity including the mediastinum and better evaluation of the anatomic relationship [3]. Compared to conventional thoracotomy, thoracoscopic resection of bronchogenic cysts has obvious advantages including less injury, rapid recovery, and much clearer operation vision of the lesion. Bilateral cysts are very rare and require a more complex approach. In our experience, the absence of intra and postoperative complications, the reduction of pain in the early postoperative period demonstrate the security of this approach for these diseases. In conclusion, bilateral simultaneous VATS for resection of bilateral posterior mediastinal bronchogenic cyst may be a useful approach. It is characterized by minimal surgical invasiveness, little postoperative wound pain, small scars and short duration of hospitalization [5].

Conflicts of interest

Not relevant in drawing and writing of the manuscript.

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The authors state that the case report was produced in the absence of economic funding sources.

Ethical approval

Not relevant in drawing and writing of the manuscript.

Consent

The authors state that the study was carried out in accordance with the ethical standards set out in the Helsinki Declaration of

1964, and that informed consent was obtained from all participants prior to their enrollment in the study.

Author contribution

Dario Amore, Carlo Curcio: study concept and data collection.
Francesco S Cerqua, Fabio Perrotta, Antonio Cennamo: interpretation of data and writers of the paper.

Guarantor

Dr. Francesco Saverio Cerqua.

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Further Information

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal on request.

The paper was conformed to the CARE statement.

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