



VATS for Bilateral Synchronized Spontaneous Pneumothorax

Bilateral Senkronize Spontan Pnömotoraksta VATS

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Abstract

Bilateral spontaneous pneumothorax is an extremely rare condition. The current study presents a primary synchronized bilateral spontaneous pneumothorax patient who was operated on by VATS in a semi-seated position with single lumen intubation and bilaterally, simultaneously.

Key words: *Pneumothorax, VATS, chest pain, semi-sitting position.*

Özet

Bilateral spontan pnömotoraks çok nadir rastlanılan bir durumdur. Biz burada aynı seansta yarı oturur pozisyonda tek lümen entübasyon VATS ile opere ettiğimiz primer senkronize bilateral spontan pnömotoraks hastamızı sunmak istedik.

Anahtar Sözcükler: *Pnömotoraks, VATS, göğüs ağrısı, yarı oturur pozisyon.*

Bilateral spontaneous pneumothorax is an extremely rare clinical condition representing approximately only 1% of all cases of spontaneous pneumothorax (1,2). Spontaneous pneumothorax that occurs in patients with no underlying lung disease is termed primary spontaneous pneumothorax (PSP), while secondary spontaneous pneumothorax refers to those that develop in the presence of an

underlying lung disease. Despite the absence of underlying pulmonary disease in patients with primary spontaneous pneumothorax, subpleural blebs, and bullae are likely to play a role in the pathogenesis. The current study presents a primary synchronized spontaneous pneumothorax patient who was operated by VATS in a semi-seated position with single lumen intubation and bilaterally, simultaneously.

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CASE

A 16-year-old boy presented to the emergency department with a chief complaint of bilateral chest pain and shortness of breath. His symptoms suddenly began two days prior, without any history of trauma. The patient did not smoke. He had no past medical or surgical history. His heart rate was 130 beats per minute, blood pressure of 115/75 mmHg, respiratory rate was 20 breaths per minutes, and peripheral oxygen saturation was 97% with room air. Decreased breath sounds were auscultated bilaterally. Chest radiograph and thorax tomography were obtained. Bilateral pneumothorax was indicated (Figure 1 and 2). Bilateral chest tubes were applied and the patient was taken to the thoracic surgery service. Prolonged air leakage was determined on the right side on the sixth day. The decision was made to operate on the patient bilaterally due to bilateral pneumothorax simultaneously and prolonged air-leakage at one side. Single endotracheal intubation with low volume-high frequency ventilation and three-port VATS technique with semi-seated position were applied bilaterally. Bullae were bilaterally detected and excised using endoscopic linear stapler. Apical pleurectomy was performed. The patient was discharged from hospital on the third day following the operation. Recurrence was been observed six months after operation.

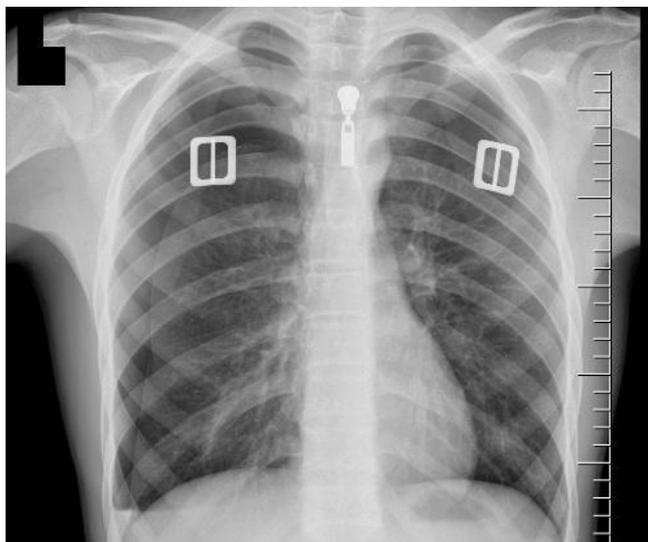


Figure 1: Chest X-Ray shows bilateral pneumothorax

DISCUSSION

The recurrence rate for the primary spontaneous pneumothorax ranges from 7.6% to 52% and secondary spontaneous pneumothorax ranges from 22.7% to 47%, most occurring between six months to two years after the first episode (3). The main goals of pneumothorax treatment

are to provide complete lung expansion and to prevent recurrence. The researchers of the current study believe that surgery could be the best way to prevent recurrence. Sternotomy, bilateral thoracotomy, or videothoroscopic surgery could be conducted for synchronized bilateral spontaneous pneumothorax (4). In our opinion, VATS should be used for early recovery and discharge from the hospital with less pain. Double lumen intubation is mostly performed for VATS, but in the current case, we used simple endotracheal intubation with low volume-high frequency ventilation. Furthermore, we performed surgery in the semi-seated position. In this way, it was not necessary to turn the patient side to side. The operation time was shortened in this way.



Figure 2: Thorax tomography of bilateral pneumothorax

Bilateral spontaneous pneumothorax could result from sarcoidosis, lymphangioleiomyomatosis, Marfan's syndrome, metastasis, tuberculosis, and mesothelioma (5-8). For this reason, systemic physical examination should be conducted on these patients. In the current patient, no systemic diseases were observed, emphysematous changes were reported pathologically.

In conclusion, the bilateral VATS approach in the semi-seated position can be done safely in selected patients with bilateral spontaneous pneumothorax. The procedure is well tolerated. This technique avoided the need for subsequent operations.

CONFLICTS OF INTEREST

None declared.

AUTHOR CONTRIBUTIONS

Concept - C.M.T., M.A.; Planning and Design - C.M.T., M.A.; Supervision - C.M.T., M.A.; Funding - C.M.T., M.A.; Materials - C.M.T., M.A.; Data Collection and/or Processing - C.M.T., M.A.; Analysis and/or Interpretation

- C.M.T., M.A.; Literature Review - C.M.T., M.A.; Writing
- C.M.T., M.A.; Critical Review - C.M.T., M.A.

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