

To cite this article: Ekici MA, Turan O, Çelik EF, Aydoğdu MH. Massive thoracic cystic schwannoma: a rare case occupying half of the hemithorax. Curr Thorac Surg 2025;10(2):94-97.

## Case Report

# Massive thoracic cystic schwannoma: a rare case occupying half of the hemithorax

 Mehmet Akif Ekici\*,  Oğuzhan Turan,  Enes Fatih Çelik,  Muhammet Halil Aydoğdu

Department of Thoracic Surgery, Kayseri Education and Research Hospital, Kayseri, Turkey

### ABSTRACT

Schwannomas are slow-growing, encapsulated, benign neoplasms originating from Schwann cells. Although these tumors are frequently asymptomatic, the most commonly reported symptoms include chest pain, back pain, dyspnea, and cough. In this report, we present a case of schwannoma treated surgically at our institution, with particular emphasis on the tumor's size and the uncommon occurrence of cystic presentation.

**Keywords:** schwannoma, cystic schwannoma, thoracic mass

Corresponding Author\*: Mehmet Akif Ekici, MD. Kayseri Şehir Hastanesi, Department of Thoracic Surgery, Şeker Mah. Muhsin Yazıcıoğlu Bulvarı No: 77 Kocasinan, 38080, Kayseri, Turkey.

E-mail: ekicimakif@gmail.com

Doi: 10.26663/cts.2025.016

Received 27.01.2025 accepted 24.06.2025

## Introduction

Neurogenic tumors located in the mediastinum originate from embryonic neural crest cells. These tumors are most commonly found in the posterior mediastinum, accounting for 71-95% of cases [1]. They are associated with the sympathetic chain, spinal nerves, or intercostal nerves but can also arise in locations where nerve tissue is present, including intraparenchymal, endotracheal, and chest wall sites [2]. In adults, neurogenic tumors constitute approximately 21% of all mediastinal tumors [3].

Schwannomas, a type of neurogenic tumor, originate from Schwann cells and are slow-growing, encapsulated, benign [4]. Although they are typically asymptomatic, schwannomas may present with compression symptoms depending on their location. The most common symptoms include chest and back pain, shortness of breath, and cough [5]. The gold standard treatment for schwannomas is complete excision. In the majority of cases, resection can be successfully performed using thoracoscopic techniques [6].

Herein, we report a case of schwannoma managed surgically at our institution, with particular emphasis on the tumor's size and the uncommon nature of its cystic presentation.

## Case Report

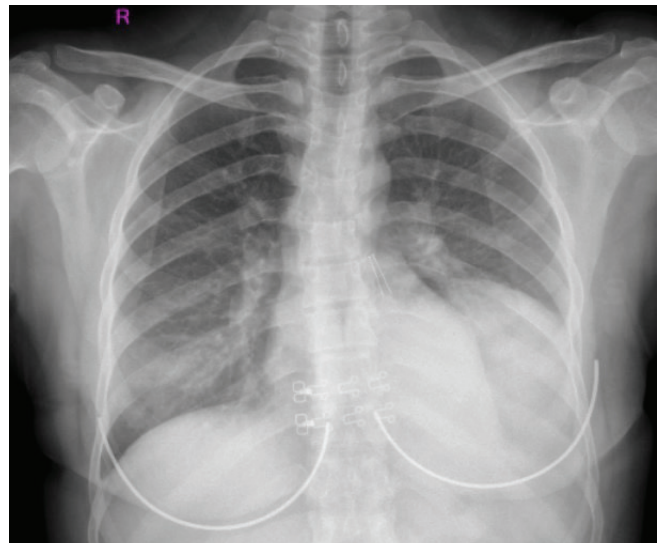
A 37-year-old female patient was admitted to the Department of Thoracic Surgery with the primary complaint of dyspnea. Chest radiography demonstrated increased opacity in the left lower zone with well-circumscribed margins. The preoperative chest radiograph is presented in Figure 1.

Thoracic computed tomography (CT) demonstrated a cystic, well-circumscribed lesion containing a fluid collection measuring up to 10 cm, located between the pleural layers on the left side. The preoperative thoracic CT image is shown in Figure 2.

The patient subsequently underwent exploratory thoracotomy. Intraoperatively, the lesion was identified as extrapleural, exerting compressive effects on the diaphragm and the left lower lobe. The mass, which was suspected to be neurogenic in origin, was excised in its entirety along with its capsule (Figure 3).

Histopathological examination of the resected specimen confirmed the diagnosis of cystic schwannoma. The postoperative course was uneventful, and the patient was discharged on the fourth postoperative day (Figure 4). Follow-up is ongoing with evaluations at

three-month intervals. Written informed consent was obtained from the patient for the use of the medical data in academic studies.



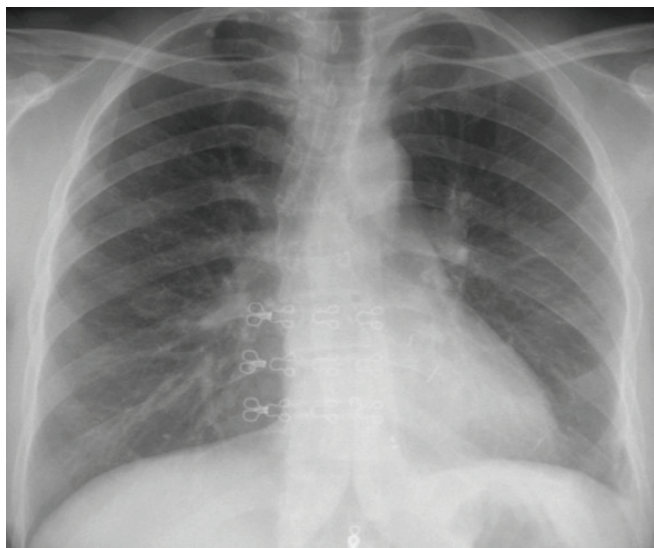
**Figure 1.** Preoperative chest X-ray.



**Figure 2.** Preoperative thoracic CT image of the lesion.



**Figure 3.** Intraoperative view of the totally excised cystic lesion.



**Figure 4.** Postoperative chest radiography.

## Discussion

Neurogenic tumors located in the mediastinum originate from embryonic neural crest cells. These tumors are most commonly found in the posterior mediastinum, accounting for 71-95% of cases [1]. In adults, neurogenic tumors account for 21% of all mediastinal tumors [3]. Consistent with this, our case involved a neurogenic tumor located in the posterior mediastinum.

Schwannomas typically follow an asymptomatic course. When symptoms occur, they are usually due to compression effects, depending on the tumor's location. The most common symptoms include chest and back pain, shortness of breath, and cough [5]. In this case, our patient presented with shortness of breath.

Cystic schwannomas are exceptionally rare neurogenic tumors [7]. Contrast-enhanced magnetic resonance imaging (MRI) is the preferred imaging modality for evaluating these tumors and is recommended when suspicion arises [8]. However, in our case, thoracic CT imaging was deemed sufficient preoperatively, and an MRI was not performed.

The differential diagnosis of cystic schwannomas includes other mediastinal tumors, infective diseases such as hydatid cysts and tuberculosis, as well as lung cancer [1]. Preoperative radiological imaging methods and intraoperative surgical exploration play an important role in distinguishing cystic schwannomas from other conditions.

Complete surgical excision remains the gold standard treatment method for these tumors. Recurrence after successful excision is exceedingly rare [9]. In our case, the tumor was successfully treated with total excision.

Video-assisted thoracoscopic surgery (VATS) is a safe and effective approach for the removal of mediastinal tumors. In our case, excision was performed via thoracotomy due to the tumor's location and size. However, we also consider VATS exploration to be a clinically appropriate option for mediastinal tumors.

In conclusion, cystic schwannomas are rare entities that pose significant diagnostic challenges in the preoperative setting. Complete surgical excision remains the treatment of choice and is associated with favorable outcomes, as demonstrated in the present case.

## Declaration of conflicting interests

The authors declared no conflicts of interest with respect to the authorship and/or publication of this article.

## Funding

The authors received no financial support.

## Author contribution

MAE,EFC; radiological assessment and radiological image arrangement, MAE,OT; surgical assessment and detailed patient information collection, MHA; general consideration of the paper. All authors revised the manuscript. The authors read and approved the final manuscript.

## References

1. Boland JM, Colby TV, Folpe AL. Intrathoracic peripheral nerve sheath tumors a clinicopathological study of 75 cases. *Human Pathol* 2015; 46: 419-25.
2. Kocatürk C. Mediastinal nörojenik tümörler. *Toraks Cerrahisi Bulteni*. 2011; 2: 106-16.
3. Azarow KS, Pearl RH, Zurcher R, Edwards FH, Cohen AJ. Primary mediastinal masses: a comparison of adult and pediatric populations. *J Thorac Cardiovasc Surg* 1993; 106: 67-72.
4. Reynolds M, Shields TW. Benign and Malignant Neurogenic tumors of the mediastinum in children and adults. *General Thoracic Surgery: Seventh Edition: Wolters Kluwer Health Adis (ESP)*; 2011. p. 6422-87.

5. Chu EC-P, Trager RJ. Thoracic schwannoma as an unusual cause of sciatic pain in the chiropractic office: a case report. *Am J Case Rep* 2022; 23: e938448-1.
6. Ishikawa E, Matsumura A, Ishikawa S, Nakamura K, Nose T. Combined minimally invasive approach using microsurgery and thoracoscopic surgery for resecting a dumbbell-type thoracic schwannoma. *Minim Invasive Neurosurg* 2002; 45: 251-3.
7. Samman A, Bardeesi A, Alzahrani M. Thoracic cystic schwannoma: case report and review of literature. *Spinal Cord Ser Cases* 2021; 7: 7.
8. Parmar H, Patkar D, Gadani S, Shah J. Cystic lumbar nerve sheath tumours: MRI features in five patients. *Australasian Rad* 2001; 45: 123-7.
9. Himmiche M, Benzagmout M, Alami B, Benabdellah IS, Chakour K, Chaoui ME. Giant cystic schwannoma of the cauda equina. *Ann African Med* 2019; 18: 180.

This article is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC BY) license (<http://creativecommons.org/licenses/by/4.0/>).