

An unusual cyst of posterior mediastinum: Mullerian cyst

Arka mediasteninin ender rastlanan bir kisti: Müller kisti

Mehmet Dakak,¹ Barış Poyraz,² Şafak Bulut,³ Cihangir Doğu,⁴ Selçuk Bilgin⁴

Departments of ¹Thoracic Surgery, ²Thoracic Diseases, ³Pathology and ⁴Intensive Care Unit,
TOBB ETÜ Hospital, Ankara, Turkey

ABSTRACT

In this article, we report a rarely seen and newly categorized mediastinal cyst called Mullerian cyst. A 51-year-old female patient was admitted to our clinic with the complaint of dysphagia. The chest computed tomography scan revealed a posterior mediastinal cystic lesion with a diameter of 2.7 centimeters. The patient underwent right thoracotomy.

Keywords: Mediastinum; Mullerian cyst; surgery.

Various kinds of cysts have been reported in the mediastinum, with the vast majority being thymic, bronchogenic, esophageal, and celomic in nature.^[1] In 2005, Hattori identified a new cyst in this region that became known as a Mullerian cyst.^[2,3] Herein, we present a case that featured this rare type of cyst localized in the posterior mediastinum.

CASE REPORT

A 51-year-old female patient was admitted to our clinic complaining of dysphagia. She had a history of multiple sclerosis (MS), and her laboratory findings were normal. The chest computed tomography (CT) revealed a posterior mediastinal cystic lesion with a diameter of 2.7 centimeters. The cyst was located in the azygoesophageal recess in front of the fifth thoracic vertebra. There was no distinct border between the esophagus and the cyst, and it appeared as if the cyst originated from the esophageal wall (Figure 1). In addition, T₂-weighted chest magnetic resonance

ÖZ

Bu yazıda Müller kisti olarak adlandırılan, nadir görülen ve yeni sınıflandırılmış bir mediastinal kist sunuldu. Elli bir yaşında kadın hasta yutma güçlüğü yakınması ile kliniğimize başvurdu. Göğüs bilgisayarlı tomografi taraması 2.7 santimetre çapında bir arka mediastinal kistik lezyon gösterdi. Hastaya sağ torakotomi uygulandı.

Anahtar sözcükler: Mediasten; Müller kisti; cerrahi.

imaging (MRI) revealed a cystic lesion attached to the vertebral column in the posterior mediastinum.

The patient underwent a right thoracotomy which showed that the cyst was localized just beneath the azygous vein and its intercostal branches and tightly attached to the esophagus and corpus of the fifth thoracic vertebra. A dissection was then performed with meticulous care which allowed for the intact cyst to be freed from the posterior mediastinum (Figure 2).

A histopathological examination showed that the cyst was lined by a ciliated, tubal-type epithelium and had a thin wall composed of smooth muscle (Figure 3). However, we found no cartilage or glands in the wall. Furthermore, the epithelium showed estrogen and progesterone receptor expressions immunohistochemically. The patient's postoperative course was uneventful, and she was discharged on the postoperative fourth day.



Available online at
www.tgkdc.dergisi.org
doi: 10.5606/tgkdc.dergisi.2015.7670
QR (Quick Response) Code

Received: September 07, 2013 Accepted: January 29, 2013

Correspondence: Mehmet Dakak, M.D. TOBB ETÜ Hastanesi, Göğüs Cerrahisi Kliniği, 06510 Söğütözü, Ankara, Turkey.

Tel: +90 532 - 614 83 68 e-mail: dakakmehmet@gmail.com

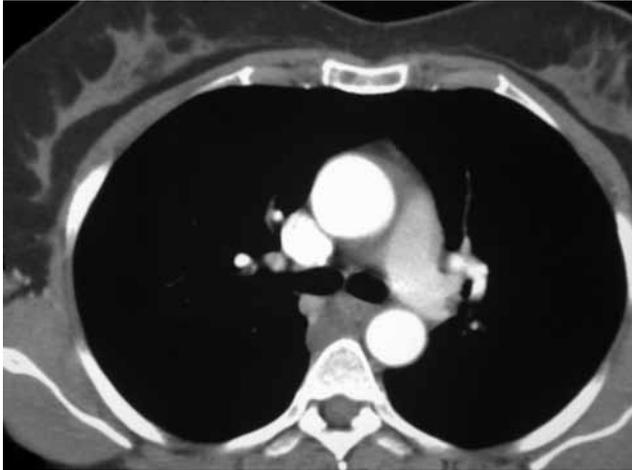


Figure 1. Chest computed tomography showing the Mullerian cyst in the azygoesophageal recess in front of the corpus of the fifth thoracic vertebra. The border between the esophagus and the cyst was not distinct.

DISCUSSION

Finding Mullerian cysts in the mediastinum is a rare occurrence, with only a limited number of Mullerian cysts of the mediastinum having been reported in the literature.^[3] However, as awareness about them grows, it is likely that the number of reported cases will increase. In our patient, we thought at first that the lesion might be an esophageal cyst, neurogenic tumor, or perhaps even a bronchogenic cyst of the posterior mediastinum, but most of the latter type of cysts are located in the visceral mediastinum rather than the posterior mediastinum.^[4]

Mullerian cysts arise from remnants of the Mullerian duct and can be located anywhere along

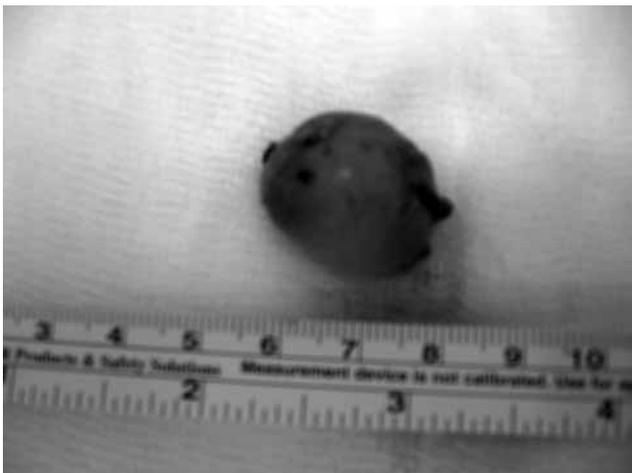


Figure 2. The cyst was dissected from the posterior mediastinum and had a diameter of 2.7 centimeters.

the path of Mullerian duct regression.^[5] The pelvis is the most common localization, but in extremely rare instances, they may be found in the mediastinum. The origin of mediastinal Mullerian cysts is unclear, but immunohistochemical studies may be helpful in the diagnosis process. Additionally, estrogen and progesterone receptors are known to be the best markers for this type of cyst.^[6]

Mullerian cysts are lined with a tubal-type epithelium and show estrogen and progesterone receptor expressions. The differential diagnosis can include foregut, gastroenteric, neuroenteric, mesothelial, or thoracic duct cysts.^[2] Bronchogenic cysts are lined by a ciliated, pseudostratified, columnar epithelium and generally contain bronchial glands, smooth muscle bundles, and other tissues found in the tracheobronchial tree, whereas enterogenous cysts are lined with alimentary tract mucosa. A classic neuroenteric cyst is lined with enteric and neural tissue, whereas mesothelial cysts are generally made up of a capsule of fibrous tissue with an inner single-cell layer of mesothelial cells. Thoracic duct cysts may or may not communicate with the duct itself and are composed of the same tissue as normal lymphatic channels. Although both enterogenous and bronchogenic cysts are lined by a ciliated, columnar epithelium with an abutting smooth muscle, the expression of estrogen and progesterone receptors along with the histological similarity to fallopian tubes indicate a Mullerian origin.^[2]

In the study by Kobayashi et al.,^[6] all of the patients with Mullerian cysts except for one were

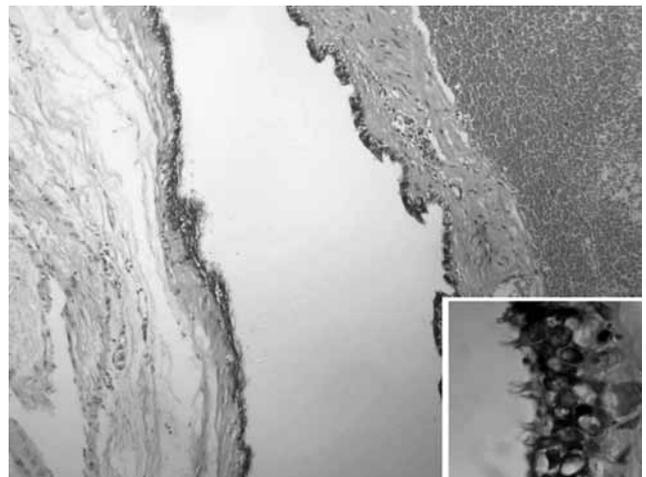


Figure 3. The cyst was lined by a ciliated, tubal-type epithelium and had a thin wall composed of smooth muscle [hematoxylin and eosin (HE) staining x 400; original magnification was x 40; inset x 400].

between the ages of 40 and 53. In addition, most of their patients also had symptoms of a cough as well as chest pain.^[6] In our case, our 51-year-old patient presented with dysphagia. Mediastinal Mullerian cysts primarily develop during premenopausal period and may be associated with obesity and a gynecological history that includes hormone replacement therapy, a hysterectomy, or an oophorectomy.^[6] However, our patient was postmenopausal and had no notable gynecological history.

In conclusion, although mediastinal Mullerian cysts are a recent discovery, they should be kept in mind for the differential diagnosis of posterior mediastinal cysts.

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 for the research and/or authorship of this article.

REFERENCES

1. Takeda S, Miyoshi S, Minami M, Ohta M, Masaoka A, Matsuda H. Clinical spectrum of mediastinal cysts. *Chest* 2003;124:125-32.
2. Hattori H. High prevalence of estrogen and progesterone receptor expression in mediastinal cysts situated in the posterior mediastinum. *Chest* 2005;128:3388-90.
3. Hattori H. Ciliated cyst of probable mullerian origin arising in the posterior mediastinum. *Virchows Arch* 2005;446:82-4.
4. Ribet ME, Copin MC, Gosselin B. Bronchogenic cysts of the mediastinum. *J Thorac Cardiovasc Surg* 1995;109:1003-10.
5. Coppens L, Bonnet P, Andrienne R, de Leval J. Adult müllerian duct or utricle cyst: clinical significance and therapeutic management of 65 cases. *J Urol* 2002;167:1740-4.
6. Kobayashi S, Inoue T, Karube Y, Hayama M, Oyaizu T, Honma K, et al. A case of Mullerian cyst arising in posterior mediastinum. *Ann Thorac Cardiovasc Surg* 2012;18:39-41.