

The rare case of a chylothorax caused by a retrosternal goiter

Retrosternal guatrın neden olduđu bir şilotoraks olgusu

Sezai Çubuk,¹ Orhan Yücel,¹ Ramazan Yıldız,² Erkan Öztürk,² Şeref Demirbaş³

Departments of ¹Thoracic Surgery, ²General Surgery and ³Internal Medicine,
Gülhane Military Medical Academy, Ankara, Turkey

ABSTRACT

Association of chylothorax and retrosternal goiter is very rare. In this article, we report a 49-year-old male patient having a retrosternal goiter and pleural effusion. The biochemical analysis of the effusion was consistent with chylothorax. The goiter was resected with a transcervical approach followed by partial sternotomy. Chylothorax disappeared after excision of the lesion. Large retrosternal goiters may cause chylous pleural effusions and be managed by excision of the compressing lesions.

Keywords: Chylothorax; pleural effusion; retrosternal goiter.

ÖZ

Şilotoraks ve retrosternal guatr birlikteliđi çok nadirdir. Bu yazıda, retrosternal guatr ve plevral efüzyonu olan 49 yaşında bir erkek hasta sunuldu. Efüzyonun biyokimyasal analizi şilotoraks ile uyumlu idi. Guatr transservikal yaklaşımı takiben parsiyel sternotomi ile rezeke edildi. Şilotoraks, lezyonun çıkarılmasını takiben kayboldu. Büyük retrosternal guatrlar şilöz plevral efüzyonlara neden olabilir ve bası yapan lezyonların çıkarılması ile tedavi edilebilir.

Anahtar sözcükler: Şilotoraks; plevral efüzyon; retrosternal guatr.

Retrosternal goiters represent 7% of all mediastinal masses, and surgery is usually recommended to relieve the compression symptoms and to exclude the malignancy.^[1] Pleural effusion is not usually associated with retrosternal goiters,^[2] and a chylothorax is seen in only very rare instances.^[1] Herein, we present a patient with a retrosternal goiter and a chylothorax who was operated via a transcervical approach in addition to undergoing a partial sternotomy.

CASE REPORT

A 49-year-old man was admitted to our hospital complaining of dyspnea and swelling in his neck. In addition, he had been taking medication for a multinodular goiter since he was 18. Computed tomography (CT) revealed an enlarged thyroid gland extending to the basis cranii via the left lobe and to the arc of the azygos vein via the right lobe retrosternally (Figure 1). We also found massive pleural effusion, compression, and deviations in the trachea. A pleural drainage catheter was initially introduced to decrease the dyspnea, and the milky

fluid had a triglyceride level of 135 mg/dL. An operation was then scheduled, but prior to the surgery, the patient received medication to achieve euthyroidism. We began the procedure by utilizing a Kocher's incision, and after freeing the upper part the gland, a partial sternotomy was performed to excise the retrosternal part. Next, the right pleura was opened to assist in the excision of the retrosternal goiter and evaluate the chylothorax. After removing the mass, no pleural thickening was found in the right hemithorax, and the dyspnea and chylothorax disappeared postsurgically. The pathology report showed the presence of a multinodular goiter.

DISCUSSION

A chylothorax, defined as chylous fluid in the pleural space, is caused by congenital, iatrogenic, traumatic, and neoplastic processes, with the most common cause being an iatrogenic chylothorax due to surgery. Operations carried out on the esophagus, mediastinum, and lungs can potentially cause this type of pleural effusion, and neck dissections performed for thyroid



Available online at
www.tgkdc.dergisi.org
doi: 10.5606/tgkdc.dergisi.2015.10279
QR (Quick Response) Code

Received: May 22, 2014 Accepted: August 11, 2014

Correspondence: Sezai Çubuk, M.D. Gülhane Askeri Tıp Akademisi Göğüs Cerrahisi Anabilim Dalı, 06010 Etilik, Ankara, Turkey.

Tel: +90 312 - 304 51 92 e-mail: sezaicubuk@gmail.com

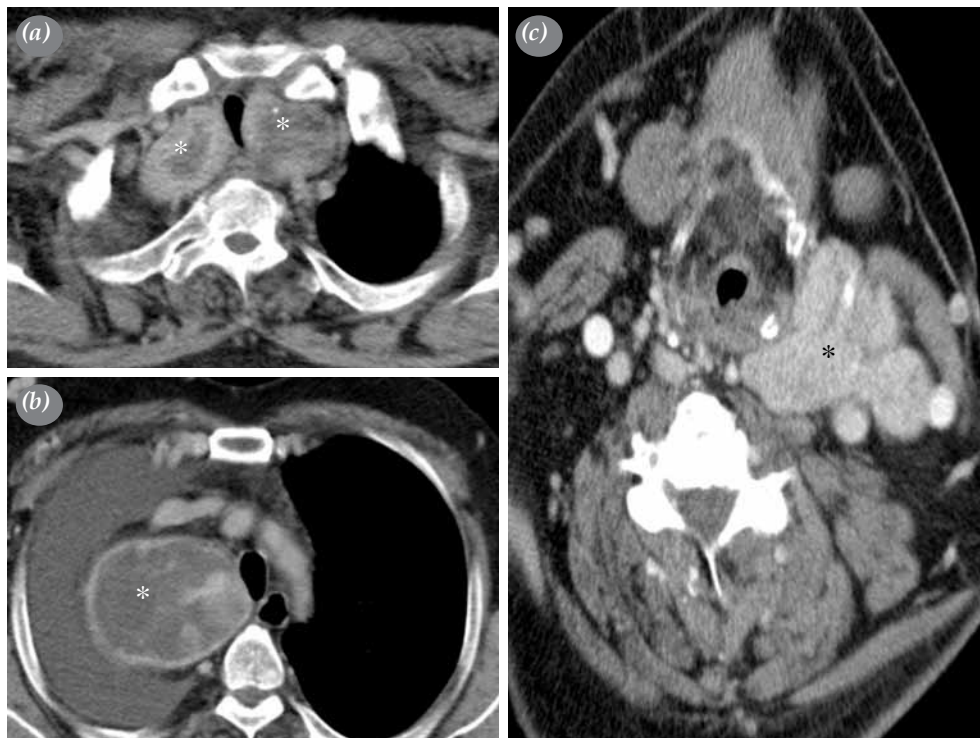


Figure 1. Axial computed tomographic image showing the (a) bilateral masses (asterisk) in the thoracic inlet, (b) large mass compressing the mediastinal structures (asterisk) and pleural effusion, (c) upper extension of the mass (asterisk).

malignancies are also sometimes associated with a chylothorax.^[3] However, chylothoraces resulting from retrosternal goiters are extremely rare. Only five cases have been reported in the English literature, which makes this the sixth case.

The presence of a chylothorax in retrosternal goiter cases is believed to cause compression of the thoracic duct and its tributaries.^[1] As this duct travels from its origin to Pirogoff's angle, it can become compressed at any point along the way. Lymphangiograms can reveal the exact point of the leakage and may also be used to help understand the mechanism leading to the chylothorax being pushed forward in these cases. Not in all retrosternal goiter patients have a chylothorax because the anatomy and course of the thoracic duct varies greatly from patient to patient. This might explain why only in a small population of these patients have a chylothorax. Conservative treatment, surgery, and radiation therapy can be used to manage chylothoraces, but in our case, the chylothorax disappeared after the lesion was excised. If the thoracic duct is not lacerated during the dissection, there is no need to explore for repair, but if this is not the case, it must be repaired or controlled via other procedures.

A transcervical resection with or without sternotomy can be used for the resection of a retrosternal goiter, but in some cases, a right thoracotomy may also be needed. Migliore et al.^[4] used minimally invasive approaches and robotic resections for their patients with a retrosternal goiter, but we preferred to use a transcervical resection in conjunction with a partial sternotomy to resect the tumor. To facilitate this, the right pleura was opened, and the resection was then successfully completed. Also, lack of adhesions to the surrounding structures helped our dissection while slipping the mass from the mediastinum. Wesche et al.^[5] determined that iodine treatment can be employed to decrease the volume of the goiter, but this can take a long time. Furthermore, iodine treatment can be applied to those patients who are not good candidates for surgery because of a medically inoperable condition. However, surgery should be performed on patients who can tolerate it in order to relieve their symptoms and prevent malignancy and hemorrhage of the gland.

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. Hunt JP, Wilson M, Buchmann LO. Chylothorax associated with substernal goiter treated with transcervical thyroidectomy. *Thyroid* 2011;21:551-3.
2. Gallelli A, Pelaia G, Calderazzo M, Rocchia F, Vero G, Gallelli G, et al. Transudative right pleural effusion due to compression of the brachiocephalic vein caused by an intrathoracic goitre. *Monaldi Arch Chest Dis* 2000;55:210-1.
3. Bae JS, Song BJ, Kim MR, Park WC, Kim JS, Jung SS. Bilateral chylothoraces without chyle leakage after left-sided neck dissection for thyroid cancer: report of two cases. *Surg Today* 2007;37:652-5.
4. Migliore M, Costanzo M, Cannizzaro MA. Cervico-mediastinal goiter: is telescopic exploration of the mediastinum (video mediastinoscopy) useful? *Interact Cardiovasc Thorac Surg* 2010;10:439-40.
5. Wesche MF, Tiel-V Buul MM, Lips P, Smits NJ, Wiersinga WM. A randomized trial comparing levothyroxine with radioactive iodine in the treatment of sporadic nontoxic goiter. *J Clin Endocrinol Metab* 2001;86:998-1005.