



Case Report / Olgu Sunumu

## Right chylothorax after thoracic sympathectomy: A very rare case

*Torasik sempatikotomi sonrası sağ şilotoraks: Çok nadir bir olgu*

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### ABSTRACT

Today, the most common indication for thoracic sympathectomy/sympathectomy is primary focal hyperhidrosis. The operation is performed thoracoscopically and usually the approach to the sympathetic chain is conducted through the third and fourth ribs. Although it is performed as a minimally invasive procedure with high success rates, there are also some common complications. In this article, we present a very rare case developing right chylothorax after right thoracic sympathectomy.

**Keywords:** Chylothorax; hyperhidrosis; sympathectomy.

### ÖZ

Günümüzde, torasik sempatektomi/semptikotomi için en yaygın endikasyon primer fokal hiperhidrozdur. Ameliyat torakoskopik olarak uygulanır ve genellikle sempatik zincire yaklaşım üçüncü ve dördüncü kaburgadan gerçekleştirilir. Yüksek başarı oranları ile minimal invaziv bir işlem olarak uygulanmasına rağmen, bazı yaygın komplikasyonlar da vardır. Bu yazıda, sağ torasik sempatikotomi sonrası sağ şilotoraks gelişen çok nadir bir olgu sunuldu.

**Anahtar sözcükler:** Şilotoraks; hiperhidroz; sempatektomi.

Today, the most common indication for thoracic sympathectomy is primary focal hyperhidrosis (PFH); however, thoracic sympathectomy has also been performed for the treatment of many other diseases such as Raynaud's phenomenon and complex regional pain syndrome.<sup>[1]</sup> The operation is performed thoracoscopically and usually the approach to the sympathetic chain is conducted through the third and fourth ribs. Although it is performed as a minimally invasive procedure with high success rates, there are also some common complications such as Horner's syndrome, pneumothorax and hemothorax.<sup>[2]</sup> In this article, we report a patient who applied to our institution with right chylothorax developing after thoracic sympathectomy. According to the literature, chylothorax after thoracic sympathectomy is a rare complication.<sup>[3]</sup>

### CASE REPORT

A 23-year-old male patient admitted for excessive sweating on his hands and feet. The patient mentioned that the sweating did not recover despite many different

medical therapies. Blood tests, electrocardiography and chest X-ray results were normal. Video assisted bilateral thoracic sympathectomy was performed from R3 and R4 levels via video assisted thoracoscopic surgery. No complications occurred intraoperatively and the sweating from the hands stopped immediately. On the postoperative second day, the patient had right chest pain. On his chest X-ray, right pleural effusion was diagnosed (Figure 1a) and a thoracic computed tomography screening was performed (Figure 1b). Computed tomography revealed right massive pleural effusion and a diagnostic thoracosynthesis was performed. White opaque fluid was aspirated. A chest tube was inserted to the right hemithorax. The fluid was tested biochemically and the results were compatible with chylothorax. After diagnosing the chylothorax, oral intake was stopped and total parenteral nutrition was started. The patient was followed-up for seven days and the mean daily drainage was between 550-800 mL/day. On the postoperative seventh day, we decided to perform a diagnostic video assisted exploration to the right hemithorax. On the right R4

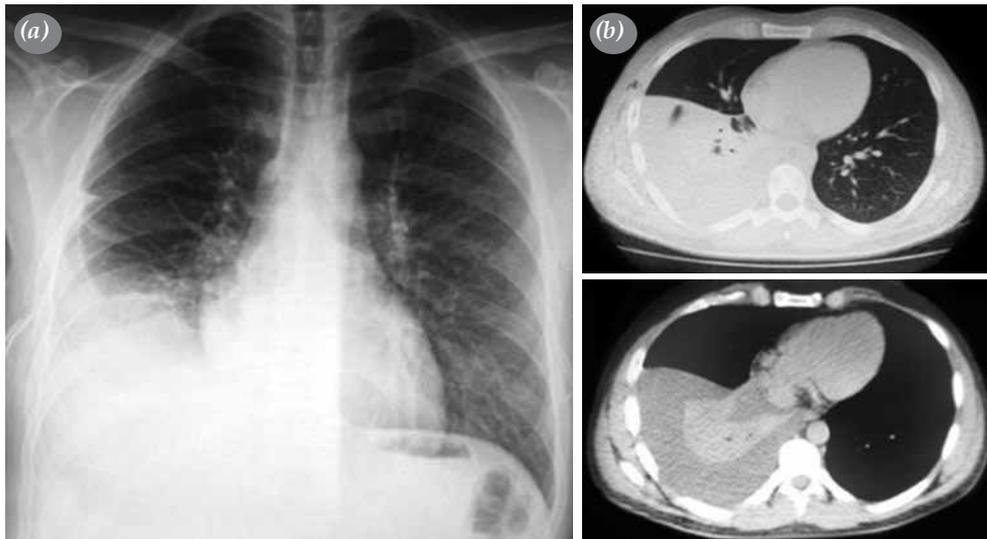
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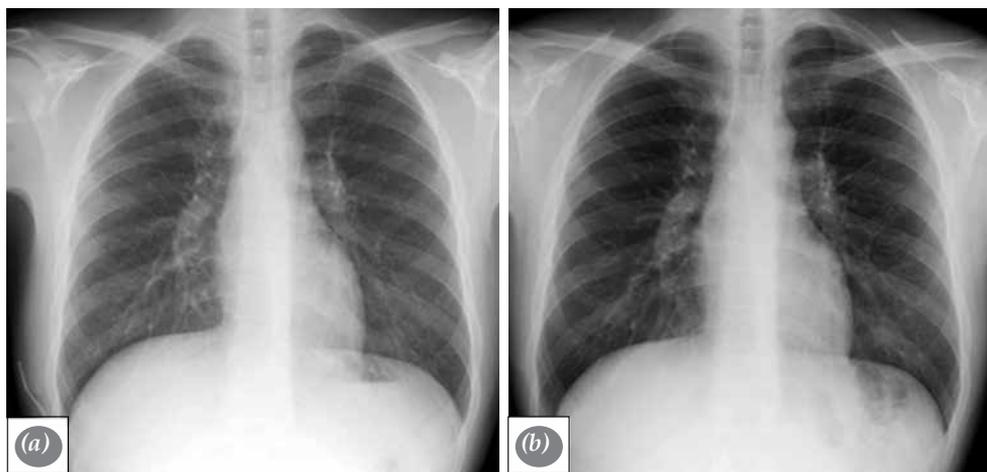
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**Figure 1.** (a, b) Right pleural effusion on chest X-ray and computed tomography.



**Figure 2.** (a) Postoperative seventh day, (b) postoperative 30<sup>th</sup> day.

level, bright clear liquid leak was detected. The leak was controlled with vascular clips. No complication occurred intraoperatively. On the postoperative follow-up, the drainage was 50 mL/daily and the chest tube was removed on the postoperative third day. Chest X-rays on the postoperative seventh and 30<sup>th</sup> days were normal after discharge (Figure 2a, b). A written informed consent was obtained from the patient.

## DISCUSSION

Primary focal hyperhidrosis is a disease that affects patients' social and professional life and needs to be treated.<sup>[4]</sup> There are some palliative treatment methods; however, the success rates of such treatments are considerably low compared to surgery's curative

results. Because of this reason, the most accepted method for the treatment of PFH is performing blockage to the R3 and R4 levels.<sup>[1]</sup> Many retrospective studies revealed that surgical treatment has some advantages like short duration of surgery, short hospitalization time, rare recurrences and high rates of satisfaction.<sup>[5]</sup> Although surgical treatment has many advantages, thoracic sympathectomy is not an innocent treatment. Besides frequent complications like pneumothorax and compensatory hyperhidrosis, there may be unusual complications like intraoperative cardiac arrest, Horner's syndrome, big vessel injury, permanent bradycardia and brachial plexus injury.<sup>[2]</sup>

Ductus thoracicus (DT) origins from the anterior wall of the L2 vertebrae and rises retroperitoneally

through the T<sub>5</sub>-T<sub>6</sub> vertebrae between the aorta and azygos vein, and from this level, it crosses the vertebrae from right to left. It forms an arcus and spills into the conjunction of the left subclavian vein and jugular vein as one or more truncus. Anatomically, DT may show many variations. Ductus thoracicus may have many collateral canals and be drained to the azygos vein or intercostal veins. Due to all of these unexpected anatomical variations, DT and its branches may be injured during thoracic surgeries and chylothorax may occur.<sup>[3]</sup> Chylothorax may be defined as the collection of chylous fluid in the chest cavity due to obstruction or injury of the DT or its branches. Although chylothorax is a common complication after thoracic surgeries, it is very rare after thoracic sympathectomy surgeries and there are very limited publications in the literature.<sup>[3]</sup> Normally, the DT is localized on the left side at the level of T<sub>3</sub>-T<sub>4</sub> and we expect to have chylothorax on the left side due to surgical complication. Our case had a right-sided chylothorax, which revealed an anatomical variation.

Treatment of chylothorax varies according to etiology. The first step is conservative treatment including drainage of the involved hemithorax with chest drain, stopping oral intake and administering supportive treatment for spontaneous healing. Besides conservative treatment, there are also surgical treatment methods. Ductus thoracicus may be ligated by the help of open surgeries, or, like in our case, the chylous leak may be found and controlled thoracoscopically by clips insertion or ligation.

In conclusion, although thoracic sympathectomy is a simple and short procedure, possible complications should be kept in mind. Chylothorax is a rare complication that is very rare on the right side. Anatomical variations of ductus thoracicus should be considered before surgery. Moreover, postoperative chest X-ray should be performed at the beginning of postoperative first day and any pleural effusion on the chest X-ray should be evaluated in terms of chylothorax.

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