

## Thoracic splenosis diagnosed 48 years after thoracoabdominal trauma

*Torakoabdominal travmadan 48 yıl sonra tanı konulan torasik splenozis*

Yeliz Erol,<sup>1</sup> Kutsal Turhan,<sup>1</sup> Ayşe Gül Ergönül,<sup>1</sup> Alpaslan Çakan,<sup>1</sup> Ufuk Çağırıcı,<sup>1</sup> Ali Veral<sup>2</sup>

Departments of <sup>1</sup>Thoracic Surgery, <sup>2</sup>Pathology, Medical Faculty of Ege University, İzmir, Turkey

### ABSTRACT

Thoracic splenosis is a rare condition including autotransplantation of splenic tissue into the left hemithorax and resulting from simultaneous rupture of the spleen and left hemidiaphragm. In this article, we report a 61-year-old female patient examined due to back pain and who was found to have left pleural nodules in her chest X-ray and computed tomography which were considered to be malignant. Patient had a history of traumatic spleen and left diaphragm rupture. Video assisted thoracoscopic biopsy of the nodules was performed and histological examination confirmed the nodules as splenic tissue. Thoracic splenosis is a pathology which should be kept in mind in patients having a left solitary pleural nodule or multiple pleural nodules and a history of spleen and left diaphragm rupture.

**Keywords:** Splenosis; thoracic; trauma.

Thoracic splenosis is a rare condition resulting from simultaneous rupture of the spleen and left hemidiaphragm, with autotransplantation of splenic tissue into the left hemithorax.<sup>[1]</sup> Thoracic splenosis should be considered in any patient with a left sided thoracic mass and a distant history of severe thoracoabdominal injury.<sup>[2]</sup> In this article, we report a case of thoracic splenosis, discussing it within the scope of the literature.

### CASE REPORT

A 61-year-old female patient was admitted to the hospital with back pain and referred for evaluation of her pleural nodules suspicious for malignancy. Her medical history was significant with a gunshot wound to the left upper quadrant of the abdomen and

### ÖZ

Torasik splenozis, dalak dokusunun sol hemitoraksa ototransplantasyonunu içeren, dalak ve sol hemidiyafragma'nın eşzamalı rüptürü sonucu gelişen nadir bir durumdur. Bu yazıda, sırt ağrısı şikayeti nedeniyle muayene edilen ve akciğer grafisi ve göğüs bilgisayarlı tomografisinde malign olduğu değerlendirilen sol plevral nodülleri olan 61 yaşında bir kadın hasta sunuldu. Hastanın travmatik dalak ve sol diyafragma rüptürü öyküsü vardı. Nodüller için video yardımlı torakoskopik biyopsi uygulandı ve histolojik inceleme nodüllerin dalak dokusu olduğunu doğruladı. Torasik splenozis, sol tek plevral nodülü ya da multipl plevral nodülleri ve geçmişinde dalak ve sol diyafragma rüptürü olan hastalarda akılda tutulması gereken bir patolojidir.

**Anahtar sözcükler:** Splenozis; torasik; travma.

left hemithorax which led to traumatic spleen and left diaphragm rupture, 48 years before. Apical and basal pleural based nodules were identified in chest X-ray (Figure 1) and further clarified by computed tomography (CT) scan of the chest (Figure 2). Video assisted thoracoscopic biopsy of the nodules was performed and histological examination confirmed the nodules as splenic tissue. The patient was discharged on postoperative second day and asymptomatic at follow-up visits.

### DISCUSSION

The crucial issue with asymptomatic splenosis is to establish a diagnosis of splenosis while excluding malignant lesions in an efficient and minimally invasive fashion.<sup>[3]</sup> In 1937, Shaw and Shafi<sup>[4]</sup> reported



Available online at  
www.tgkdc.dergisi.org  
doi: 10.5606/tgkdc.dergisi.2016.12160  
QR (Quick Response) Code

Received: July 08, 2015 Accepted: January 26, 2016

Correspondence: Yeliz Erol, MD, Ege Üniversitesi Tıp Fakültesi Göğüs Cerrahisi Anabilim Dalı, 35040 Bornova, İzmir, Turkey.

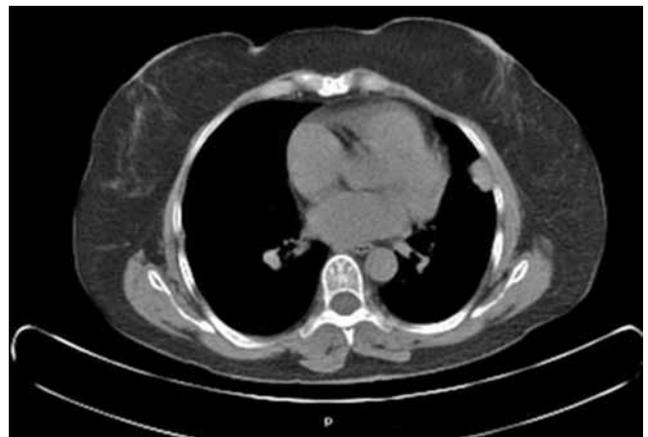
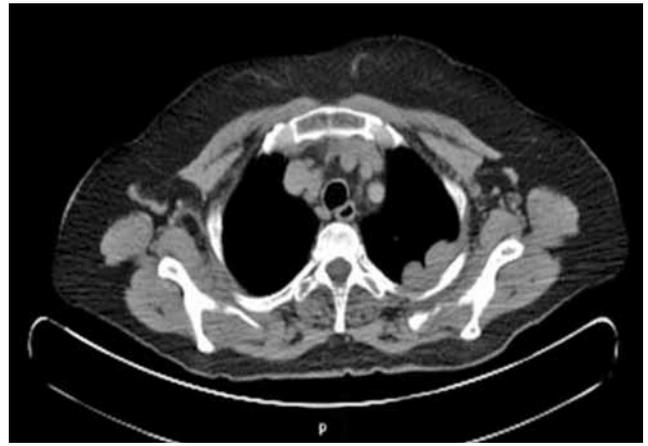
Tel: +90 505 - 476 27 48 e-mail: dryelizero@hotmail.com



**Figure 1.** Preoperative chest X-ray demonstrating left apical pleural based lesion.

the first case of thoracic splenosis in a 20-year-old Egyptian male. Since then, there have been numerous cases of abdominal splenosis; however, only 62 reports (n=66) of thoracic splenosis have been reported in the English literature.<sup>[5]</sup> Thus splenosis within the abdominal cavity is relatively common; however, occurrence outside the abdominal cavity is unusual. Thoracic splenosis can be suspected if the following factors are present: histories of trauma, splenic, and/or diaphragmatic injury. Patients are usually presented as asymptomatic. Diagnosis is established by chest X-rays, CT scans, radionuclide studies, but frequently intraoperatively. Radionuclide studies conducted with technetium-99m sulfur colloid and indium-111 platelets can confirm the diagnosis and provide an alternative for surgery.<sup>[6]</sup> Surgical treatment must be avoided when the diagnosis is established preoperatively as this residual splenic tissue may prevent from postsplenectomy sepsis and pneumococcal infections.<sup>[7,8]</sup> It remains unknown if immunological function of the spleen can return to normal after splenosis. On the other hand, studies on immunological function of a patient with previous traumatic splenectomy and intraabdominal splenosis identified normal circulating antibody levels and response to *S. pneumonia* antigens was within normal limits.<sup>[6]</sup> Major surgical intervention must be avoided if the diagnosis can be confirmed. If surgery is indicated eventually, a minimally invasive surgical procedure should be preferred.

In conclusion, although thoracic splenosis remains a rare diagnosis, it should be kept in mind based on a history of splenic trauma with diaphragmatic injury and a single left sided pleural nodule or multiple left sided pleural nodules.



**Figure 2.** Computed tomography scan of chest demonstrating pleural based lesions.

#### 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. Naylor MF, Karstaedt N, Finck SJ, Burnett OL. Noninvasive methods of diagnosing thoracic splenosis. *Ann Thorac Surg* 1999;68:243-4.
2. Kwan AJ, Drum DE, Ahn CS, Tow DE. Intrathoracic splenosis mimicking metastatic lung cancer. *Clin Nucl Med* 1994;19:93-5.
3. Beekmana RA, Louieb B, Singha R, Salamac S, Millerd JD. Asymptomatic thoracic splenosis after thoracoabdominal trauma: establishing a diagnosis. *Injury Extra* 2005;36:283-86.
4. Shaw AF, Shafi IA. Traumatic autoplasmic transplantation of the splenic tissue in man with observation on the late results of splenectomy in six cases. *Pathol Bacteriol* 1937;45:215-35.
5. Khan AM, Manzoor K, Malik Z, Avsar Y, Shim C. Thoracic

- splenosis: know it--avoid unnecessary investigations, interventions, and thoracotomy. *Gen Thorac Cardiovasc Surg* 2011;59:245-53.
6. Hardin VM, Morgan ME. Thoracic splenosis. *Clin Nucl Med* 1994;19:438-40.
  7. Tsunozuka Y, Sato H. Thoracic splenosis; from a thoracoscopic viewpoint. *Eur J Cardiothorac Surg* 1998;13:104-6.
  8. Roucos S, Tabet G, Jebara VA, Ghossain MA, Biagini J, Saade B. Thoracic splenosis. Case report and literature review. *J Thorac Cardiovasc Surg* 1990;99:361-3.