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Thoracic Splenosis Mimicking Thoracic Malignancy: 2 Cases Thoracic Splenosis

Aylin C, Ali Murat A, Melek E and Levent C*

Department of Thoracic Surgery, Yedikule Chest Diseases and Thoracic Surgery Training and Research Hospital, Turkey

Abstract

Introduction: Thoracic splenosis is a rare condition where splenic tissue is found in the thoracic cavity following abdominal trauma. Splenocytes traverse the diaphragm and implant in the chest, growing into visible splenic tissue. This report presents two cases of thoracic splenosis after trauma.

Methods: Case 1: A 51-year-old male with a history of splenectomy 25 years ago presented with a mass in the left hemithorax on chest X-ray. CT and PET-CT scans suggested thoracic splenosis. Case 2: A 58-year-old male with a history of splenectomy 25 years ago presented with chest pain and multiple nodular lesions in the left hemithorax on CT. Both patients underwent Video-Assisted Thoracoscopic Surgery (VATS) with samples taken for analysis.

Results: Case 1: VATS revealed a 4 cm mass adherent to the left lower lobe pleura and smaller nodules on the diaphragm. The mass was excised, confirming thoracic splenosis. The patient was discharged on the third postoperative day. Case 2: VATS found hemorrhagic nodules on the diaphragmatic and mediastinal surfaces. One nodule, initially suspected to be malignant, was excised and confirmed as ectopic splenic tissue. The patient was discharged on the second postoperative day.

Discussion: Thoracic splenosis should be considered in patients with a history of splenectomy and thoracoabdominal trauma presenting with thoracic masses. It can mimic malignancy, requiring extensive imaging and surgical intervention for diagnosis. Minimally invasive procedures like VATS are preferred.

Conclusion: Thoracic splenosis is rare but significant, often mimicking thoracic malignancies. Accurate diagnosis is essential, especially in patients with trauma history. Minimally invasive surgery, such as VATS, should be used for diagnostic purposes.

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Correspondence:
Aylin Canavar, Department of Thoracic Surgery, Yedikule Chest Diseases and Thoracic Surgery Training and Research Hospital, Kazlıçeşme Neighborhood, Belgradkapi Street, Zeytinburnu, Istanbul, Turkey, Tel: +905464776392;

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Introduction

Thoracic splenosis is a rare clinical condition that occurs when splenic tissue is seen on the chest wall following injury to the spleen and/or diaphragm in blunt and/or penetrating abdominal trauma [1-3]. Splenosis typically occurs in the peritoneal cavity. Splenocytes originating from traumatized splenic tissue can cross the diaphragm and enter the pleural cavity. Splenocytes implant into the parietal pleura in the thoracic cavity, grow, and develop into visible splenic tissue [3-7]. Routine chest radiographs, Computed Tomography (CT) scans of the thorax, and radionuclide imaging studies can be used for diagnosis. Histopathologic diagnosis is usually confirmed by intraoperative frozen sections or histopathologic examination [6-8]. The diagnosis and management of cases of thoracic splenosis require careful evaluation. We aimed to present 2 cases of intrathoracic splenosis that developed after blunt and penetrating trauma.

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Case 1

A chest X-ray performed due to flu-like symptoms revealed a mass lesion in the left hemithorax of the 51-year-old male patient. He had blunt chest trauma (traffic accident) and splenectomy for a ruptured spleen 25 years earlier. Routine laboratory tests were normal. The patient's CT scan revealed a 49 mm × 33 mm mass lesion in the left lower lobe and a 32 mm × 12 mm mass lesion between the pleural leaves at the level of the 9th rib (Figure 1). Because of suspected malignancy, Positron Emission Tomography (PET CT) was performed and interpreted as thoracic splenosis (Figure 2). The patient underwent Video-Assisted Thoracoscopic Surgery (VATS). In the left hemithorax, a 4 cm mass lesion adhesive to the lower lobe visceral pleura located in the posterior

Figure 1: Image of left lower lobe mass lesion on computed tomography of the thorax.

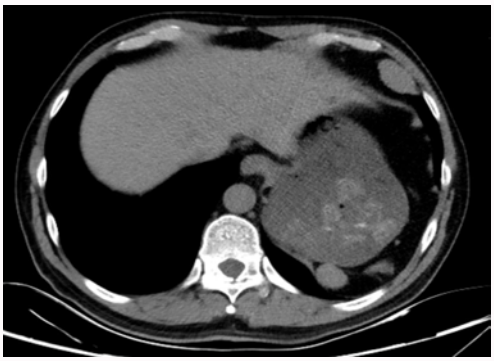

Figure 2: Nodular lesions over the diaphragm in the left hemithorax.

Figure 3: VATS image of the mass.

mediastinum on the 6th rib, a 2 cm nodule located in the lower lobe of the left lung, and large and small nodules on the diaphragm and para cardiac fatty tissue were detected (Figure 3). The four-cm mass was excised completely, and nodules in the lung parenchyma and on the diaphragm were sampled and sent for Frozen/Section (F/S) examination. The outcome was reported as thoracic splenosis. The patient was discharged on the third postoperative day.

Case 2

A 58-year-old man presented with chest pain. On examination, multiple nodular lesions were found in the left hemithorax. CT of the thorax revealed nodular lesions in soft tissue density in the parietal pleura (30 × 15 mm) and on the diaphragm surface (37 × 21 mm), adjacent to the posterobasal and laterobasal segments of the lower lobe of the left lung (Figure 4, 5).

The results of the patient's laboratory tests and respiratory

Figure 4: Computed tomography of the thorax showing nodular lesions of soft tissue density in the pleural region.

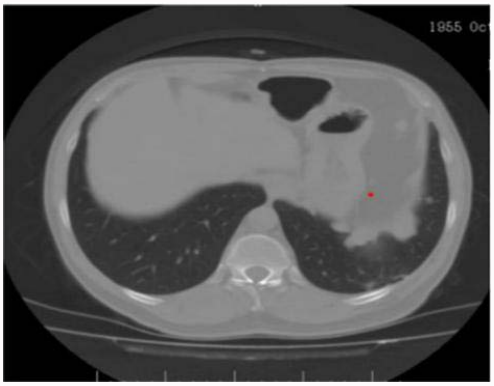

Figure 5: Computed tomography of the thorax showing similar lesions on the diaphragmatic surface.

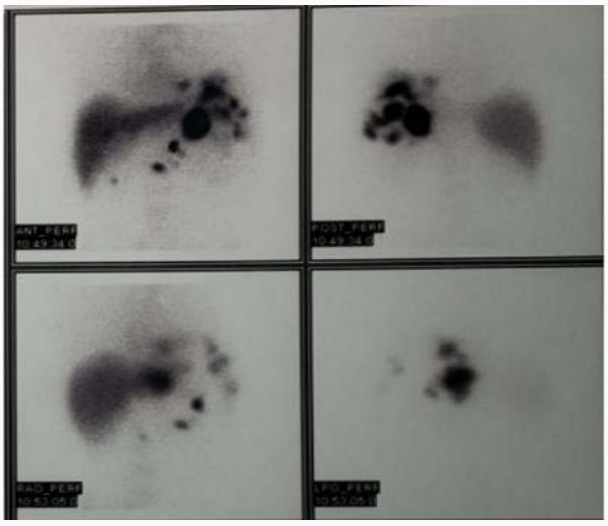

Figure 6: Tc-99m erythrocyte scintigraphy image showing accessory splenic tissue.

function were normal. The patient had a history of splenectomy following a gunshot injury 25 years ago. It was recommended to evaluate for malignancy in PET-CT performed due to suspicion of malignancy. During diagnostic Video-Assisted Thoracoscopic Surgery (VATS), multiple dark red, hemorrhagic, friable masses were noted on the paracardiac, diaphragmatic, and mediastinal surfaces. One of these masses on the paracardial and diaphragmatic surface was removed with an energy device. Frozen section analysis revealed

a possible malignant lymphoid mass. As all lesions were suspected to be malignant, no further procedure was performed. Postoperative pathologic examination revealed an ectopic splenic tissue. The patient was discharged on postoperative day 2. Postoperative Tc-99m-labelled red blood cell scintigraphy showed accessory splenic tissue in the abdominal cavity, splenic region, perisplenic tissue, anterior midline, undersurface of the liver, left lower lobe of the lung, and infrahilar region (Figure 5, 6).

Conclusion

The first case of intrathoracic splenosis in the literature was described by Shaw and Shafi in 1937 [1-3]. Spontaneous autotransplantation of splenic tissue after splenectomy for traumatic injury to the spleen is a rare case. Spleen cells can be localized in the splenic bed, omentum, mesentery, serosa of the intestine, liver, diaphragm, or pelvic organs. However, splenocytes may also be localized in the visceral or parietal pleura, pericardium, and interlobar fissures [4]. In reviewing the cases of thoracic splenosis in the literature, all patients had splenic injury and/or splenectomy secondary to thoracoabdominal injuries [1,4]. Patients with thoracic splenosis are often asymptomatic. As thoracic splenosis usually occurs repeatedly, it can be confused with thoracic malignancies at an advanced age. In particular, the presence of predisposing factors and a family history of malignancy require confirmation of the diagnosis. It is not recommended to remove the entire intrathoracic splenosis after a definitive diagnosis has been made (except in patients with a history of hematologic disease where splenectomy is indicated) [1,2,4,7]. Chest X-rays, CT scans, and radionuclide studies can be used for diagnosis, but surgery may be required to confirm the diagnosis. Radionuclide studies using Tc99m sulfur colloid and indium-111 platelets can confirm the diagnosis and provide an alternative to surgery [1,6-8]. Preoperative diagnosis of intrathoracic splenosis may require multiple investigations and imaging techniques. The diagnosis of thoracic splenosis is usually based on clinical suspicion.

In conclusion, thoracic splenosis should be considered in patients with single or multiple masses in the left hemithorax and a history of splenectomy and thoracoabdominal trauma [1,5]. In patients with thoracic splenosis, a minimally invasive surgical procedure such as VATS should be preferred for diagnostic purposes.

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