



Case Report

Thoracic splenosis: Case report of a symptomatic case

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ABSTRACT

Thoracic splenosis is the autotransplantation of splenic tissue in the left thoracic cavity as a result of a splenic injury. This rare pathology is usually asymptomatic and may be discovered on incidental imaging, but the diagnosis often requires invasive procedures such as surgery in order to eliminate a neoplastic origin. We report a rare symptomatic case of a 39-year-old man presenting with chest pain and multiple nodules revealed on a computed tomography scan. The patient underwent a surgical exploration and the pathological studies concluded to a thoracic splenosis. Indeed, the previous medical history of the patient revealed a left thoraco-abdominal traumatism during childhood. The aim of this paper is to emphasize that the diagnosis can now be performed using only imaging techniques such as technetium-99 sulfur colloid or labelled heat-denatured red blood cell scintigraphy to avoid unnecessary invasive procedures including thoracotomy.

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Introduction

Thoracic splenosis is characterized by the autotransplantation of splenic tissue in the left pleural space due to a splenic injury or surgery. This rare pathology remains usually asymptomatic but can lead to invasive procedures. Indeed, this affection is most often detected incidentally on imaging such as computed tomography (CT) scan or chest X rays. Its tumoral mimicking aspect urges to perform pathological exam and may require surgical intervention in most cases. The purpose of studying this case is to present an unusual and little-known phenomenon and to discuss its management.

Case report

A 39-year-old man underwent a chest X-ray and a CT scan in context of chronic chest pain assessment. In the medical history of the patient, we found a splenectomy 36 years ago subsequently to a traumatic splenic rupture at the age of three. Both radiological exams revealed the presence of multiple nodules on the left diaphragmatic pleura with the largest one having a 10 cm

transversal diameter and filling the bottom of the pleural cavity (Fig. 1). A single photon emission computed tomography (SPECT) was performed and revealed no metabolic activity of the mass.

Considering the suspicion of cancer, a multidisciplinary discussion proposed the patient for thoracic surgery in order to diagnose the lesion and, depending on the pathological findings, to remove it. A left-side thoracotomy was realized and a pleuro-parietal nodule of 4 cm × 1 cm was fully resected. The main lesion noticed on the CT scan was found to be a heap of six nodules firmly attached to the diaphragm and to the left inferior lobe (Fig. 2). Other nodules were observed at closer inspection of the left pleural cavity, especially in the left costo-diaphragmatic gutter. Initial preoperative diagnosis returned in favor of a lymphatic origin and the final pathological report concluded to ectopic splenic tissue.

The postoperative course was uneventful and the patient was discharged the fifth day with a prompt return to normal activity.

Discussion

The first reported case of thoracic splenosis was done by Shaw and Shafi in 1937 during an autopsy. The most common site of splenosis is the abdominal peritoneum but many other anatomical sites have been described before: bowel wall, stomach, mediastinum, uterine-serosal surface, skin, liver, adrenal gland, kidney, and even brain.¹ The thoracic localization is due to splenic tissue

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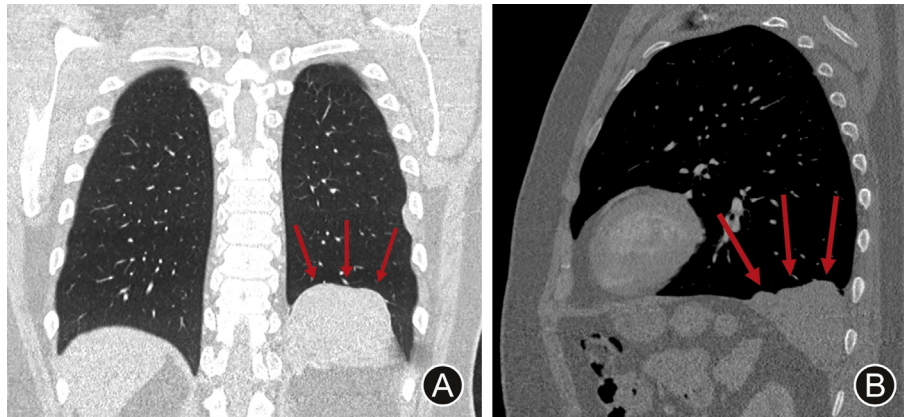


Fig. 1. Computed tomography scan of the lower chest showing multiples nodules on the left diaphragmatic pleura (A: frontal view; B: coronal view).

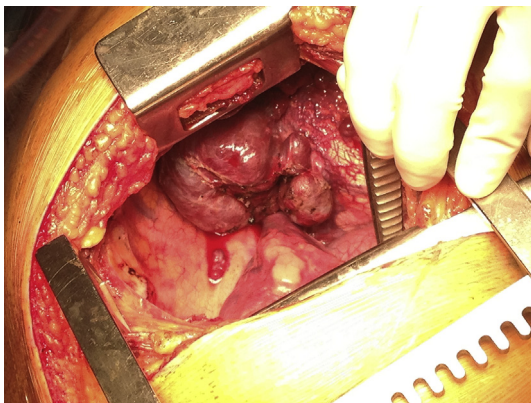


Fig. 2. Intraoperative view showing the heap of splenosis nodules.

autotransplantation on the left diaphragm after a traumatic or iatrogenic splenic capsule rupture. The splenic implants may grow into mature splenic tissue by deriving blood supply from surrounding tissue.

The overall splenosis incidence (including abdominal and other locations) is estimated to be about 76% after a splenic injury but the thoracic splenosis incidence is only 18% and requires an associated diaphragmatic rupture.² This low incidence can be explained by the need of these combined two factors (splenic and diaphragmatic injury) but also by an underestimation due to its clinical development. Indeed, after implantation of the splenic tissue on the diaphragm, the evolution is marked by a slow expansion of multiples nodules in the left thoracic cavity in an asymptomatic way. Therefore, thoracic splenosis is generally incidentally diagnosed and the splenic implants dimensions range from a few millimeters to a much more important mass.²

According to our knowledge, about 30 cases have been previously described in the literature with only four being symptomatic: two cases revealed by hemoptysis, one by a pleural chest pain and recently a case by irritation of the phrenic nerve.³ The averaged period between the traumatism and the diagnosis of thoracic splenosis is estimated to 18.8 years.⁴ However it can span from 6 to 43 years according to the literature. The imaging aspect of the disease is characterized by multiples nodules mimicking tumoral appearance. This tumoral aspect most often drives towards surgical treatment for biopsy or removal. However, several studies demonstrated that using technetium-99 sulfur colloid or labelled

heat-denatured red blood cell scintigraphy are a reliable noninvasive investigation to obtain the diagnosis when suspected.⁵ Moreover, the SPECT can be useful for identifying and localizing the ectopic splenic tissue as preoperative additional imaging.⁵

There is no recommendation established yet about how to manage thoracic splenosis, but it is admitted that removal of the splenosis in an asymptomatic patient seems not indicated. As a matter of fact, the spontaneous local evolution is benign, and these splenic implants remain functional and may decrease the risk of severe infection in a patient deprived of abdominal spleen.

In conclusion, an incidentally discovery of multiple left-sided pleural based nodules or masses with historical evidence of splenic traumatism must enhance investigation for thoracic splenosis. Diagnosis is made by 99mTc sulfur colloid or 99mTc-DRBC scintigraphy which may allow avoidance of surgical exploration. In asymptomatic patients a wait-and-see approach seems appropriate, with regular follow-up. Removal of the lesion can be beneficial in the symptomatic cases.

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Ethical Statement

The patient's consent has been obtained.

Declaration of Competing Interest

The authors declared no competing interest.

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