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Case report

A rare benign intrathoracic mass in a patient with history of rocket explosion

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A B S T R A C T

Thoracic splenosis is rare benign condition that follows trauma leading to diaphragmatic injury. Most of the patients including ours present with a clear traumatic event leading to autotransplantation of spleen in thoracic cavity. Mostly diagnosed incidentally and we need to avoid unnecessary workup including radiological and invasive. It is a very important case which signifies importance of good history taking and initial imaging for making diagnosis and making our pulmonogist and internist aware of this diagnosis.

Introduction

Thoracic splenosis is a rare condition that follows diaphragmatic injury leading to autotransplantation of splenic tissue into the pleural cavity. Trauma appears to the most common etiology with as many as sixty percent of patients endorsing a clear history of a traumatic event. It is mostly asymptomatic and incidentally diagnosed, which is why there is a delay in its diagnosis. Therapy is not indicated unless patient is symptomatic. Considering the wide differential of thoracic splenosis, majority of patients undergo extensive workups and invasive procedures which can be clearly prevented and complications avoided. We present this case of thoracic splenosis in an elderly male with a past history of traumatic event. Through this case we want to make the physicians and pulmonologists cognizant of this condition preventing unnecessary workup and patient morbidity.

Case presentation

A sixty year old white male with a past medical history of Type 2 Diabetes Mellitus with neuropathy, hypertension, and kidney stones, who presented with nasal congestion and cough productive of white sputum. Patient denied any shortness of breath, recent weight loss, night sweats, or increasing fatigue. He had a sinus infection for more than 1 week, and was previously treated with 10 days of moxifloxacin. A chest X-ray done was concerning for a lung nodule. Subsequently, a Computer Tomography of the chest was done which showed multiple pleural based noncalcified nodular densities along the base of the left hemithorax (Fig. 1). Pulmonology was consulted for further workup of lung nodule. After the scars on his chest and abdomen were seen on exam, further inquiry revealed a history of remote injury involving a rocket explosion with shrapnel causing severe throcoabdominal injuries. He had to have a splenectomy and rib cage repair in a MASH (Mobile Army Surgical Hospital) unit. A colloid liver spleen scan (Fig 2) was performed which confirmed the presence of explanted splenic tissue in the left hemithorax.

Discussion

Thoracic splenosis is a rare, benign condition which involves autotransplantation of splenic tissue into the pleural cavity secondary to trauma or surgery. It is parenthetically detected, asymptomatic, and treatment is not often indicated. The first case of thoracic splenosis was reported in 1937 by Shaw and Shafi in a 20-year old Egyptian man, and ever since, less than 50 new cases have been reported in the literature [1]. It involves 16%–67% of patients with past splenic trauma and or past splenectomy [2]. Pathogenesis of thoracic splenosis is depicted in Fig. 3 [3].

Autotransplanted spleens have no hilum and the arterial supply can pass through any site in the capsule; however, accessory spleens have hilum where the arteries enter [4]. Splenosis is

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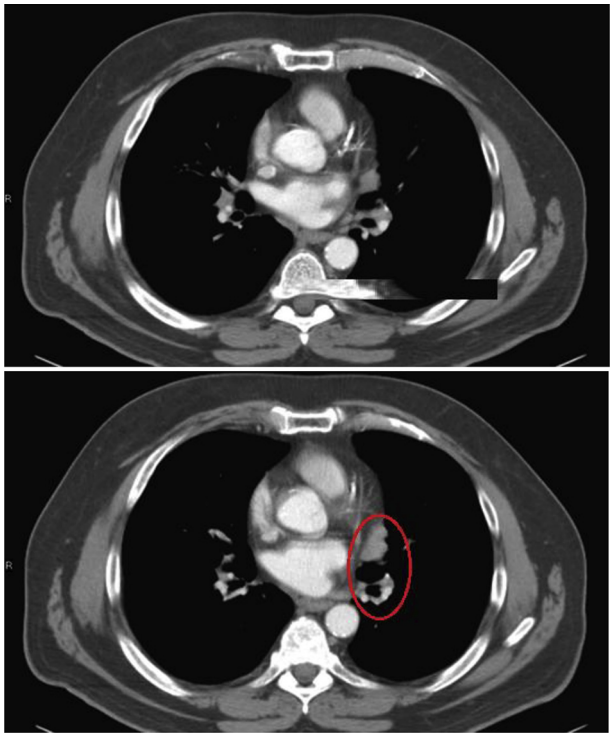

Fig. 1. Multiple pleural based noncalcified nodular densities along the base of the left hemithorax.

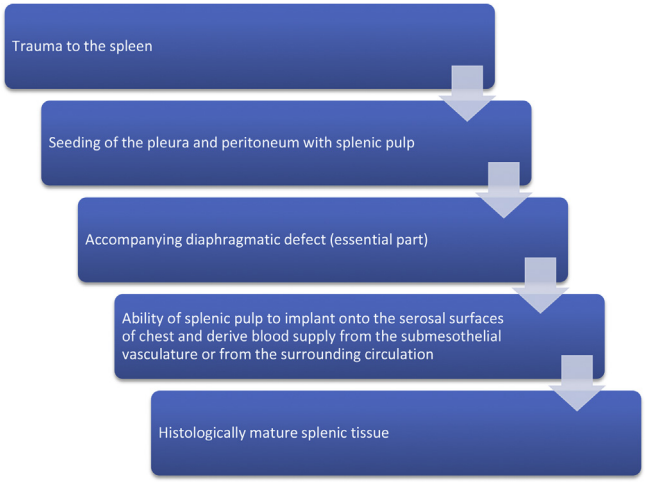

Fig. 3. Pathogenesis of thoracic splenosis.

microscopically identical to normal spleen with both having thick capsule, trabeculae, and white and red pulp [4,5]. Although it is usually asymptomatic and diagnosed incidentally; it can occasionally present as hemoptysis and pleuritic chest pain [6]. Diagnosis can be challenging without knowledge of preceding splenic injury, often leading to the use of biopsy, video-assisted thoracoscopic surgery (VATS) and even thoracotomy for diagnosis, causing significant morbidity and mortality among patient population [7,8].

There is a wide list of differentials for thoracic splenosis which include low grade lymphoma, thymoma, primary lung carcinoma, mesothelioma, thoracic endometriosis, mediastinal tumor, neurogenic tumors and metastatic lesions. It may present as soliatary (25% cases) or multiple nodules (75% of cases) on CT scans [8]. Scintigraphy performed with heat-damaged 99Tc-labelled red blood cells is considered the most sensitive and specific imaging modality for the diagnosis of splenosis [9–11] and can demonstrate splenic tissue even when minimally present. This is because splenic tissue takes up more than 90% of damaged red blood cells [12,13].

Removal of thoracic splenic tissue is inadvisable especially in patients without functional abdominal splenic tissue may render the patient a splenic, increasing the risk of infection, although this notion is still debatable [14]. Surgical removal is considered in symptomatic patients and patients with hematological disease [3,8].

In conclusion, if a patient has an appropriate history of splenic injury and multiple, asymptomatic, left-side pleural lesions, intrathoracic splenosis should be considered in the differential diagnosis.

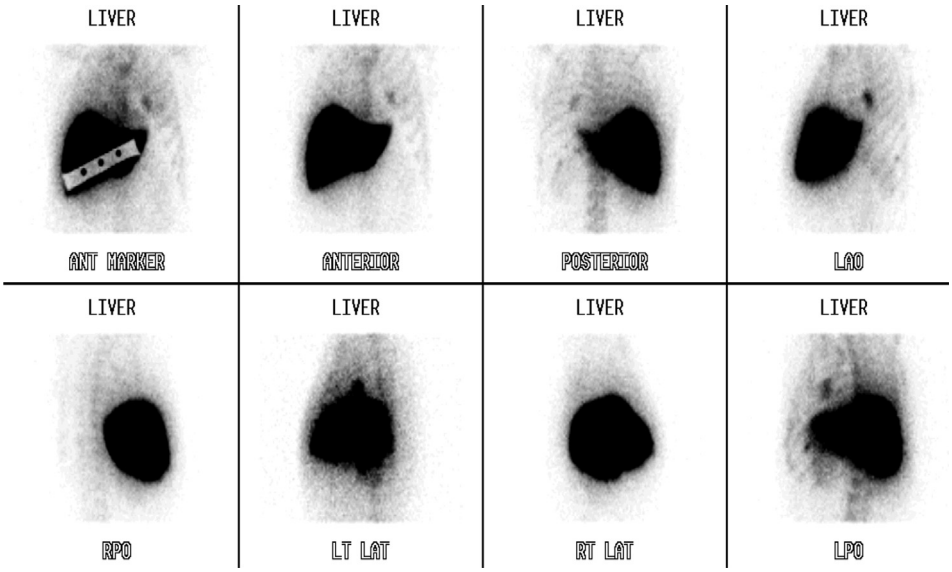

Fig. 2. Explanted splenic tissue in the left hemithorax.

References

[1] Shaw AFB, Shafi A. Traumatic autoplastic transplantation of splenic tissue in man with observations on the late results of splenectomy in six cases. J Pathol 1937;45:215–35.

[2] Normand JP, Rioux M, Dumont M, Bouchard G, Letourneau L. Thoracic splenosis after blunt trauma: frequency and imaging findings. AJR Am J Roentgenol 1993;161:739–41.

[3] Kim K, Choi HJ, Kim YM, Kwon WJ, Lee WC, Suh JH. Thoracic splenosis: a case report and the importance of clinical history. J Korean Med Sci 2010 Feb;25:299–303.

[4] Darling JD, Flickinger FW. Splenosis mimicking neoplasm in the perirenal space: CT characteristics. J Comput Assist Tomogr 1990;14:839–41.

[5] Fleming CR, Dickson ER, Harrison Jr EG. Splenosis: autotransplantation of splenic tissue. Am J Med 1976;61:414–9.

[6] Fukuhara Shinichi, Tyagi Samuel, Yun Jaime. Intrathoracic splenosis presenting as persistent chest pain. J Cardiothorac Surg 2012;7:84.

[7] Syed S, Zaharopoulos P. Thoracic splenosis diagnosed by fine needle aspiration cytology:a case report. Diagn Cytopathol 2001;25:321–4.

[8] Khan AM, Manzoor K, Malik Z, Yasim A, Shim C. Thoracic splenosis: know it—avoid unnecessary investigations, interventions, and thoracotomy. Gen Thorac Cardiovasc Surg 2011 Apr;59(4):245–53 [Epub 2011 Apr 12].

[9] Grande M, Lapecorella M, Ianora AA, Longo S, Rubini G. Intrahepatic and widely distributed intraabdominal splenosis: multi-detector CT, US and scintigraphic findings. Intern Emerg Med 2008;3:265–7.

[10] Stewart CA, Sakimura IT, Siegel ME. Scintigraphic demonstration of splenosis. Clin Nucl Med 1986;11:161–4.

[11] Zwas ST, Samra D, Samra Y, Sibber GR. Scintigraphic assessment of ectopic splenic tissue localization and function following splenectomy for trauma. Eur J Nucl Med 1986;12:125–9.

[12] Fremont RD, Rice TW. Splenosis: a review. South Med J 2007;100:589–93.

[13] Zwas ST, Samra D, Samra Y, Sibber GR. Scintigraphic assessment of ectopic splenic tissue localization and function following splenectomy for trauma. Eur J Nucl Med 1986;12:125–9.

[14] Pearson HA, Johnston D, Smioth KA, Touloukian RJ. The born-again spleen: return of splenic function after splenectomy for trauma. N Engl J Med 1978;298:1389–92.