Case report
Thoracic splenosis; from a thoracoscopic viewpoint

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Abstract

Thoracic splenosis is a rare entity after splenic and diaphragmatic injury. We report on a patient who had left pulmonary masses on a routine chest roentgenogram. It was impossible to rule out the possibility of other tumors or malignancies from past history, radiographic findings and needle biopsy. The patient underwent a video-assisted thoracoscopic surgery. The resected tumor was diagnosed as the splenic tissue. This represents the first reported case, that diagnosed by video-assisted thoracoscopic resection, of thoracic splenosis. The course of dissemination of the splenic tissue to chest is considered to be the costophrenic recessus by the intrathoracic findings thoracoscopically. © 1998 Elsevier Science B.V.

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1. Introduction

Splenosis is the autotransplantation of splenic tissue and occurs usually in the peritoneal cavity as peritoneum, omentum and the mesentery, usually after rupture of the spleen [1–9]. Thoracic splenosis results from implantation of splenic tissue that cross the injured diaphragm following trauma to the spleen. Usually, the condition is asymptomatic and discovered by routine chest roentgenogram examination [1]. Diagnosis generally, was made at thoracotomy, radionuclide imaging or needle biopsy, which were recently reported to be useful in diagnosing [5,6]. Surgical treatment was considered unnecessary, but it was reported hemoptysis improved after surgical exeresis of splenosis [9]. This is the first reported case of thoracic splenosis being definitively diagnosed with video-assisted thoracoscopy, we discuss the clinical feature thoracoscopically.

2. Case report

A 36 year old woman was referred to us because of continuous cough and she was found to have left pulmonary masses on a routine chest roentgenogram (Fig. 1). The patients records showed that she had undergone removal of an injured spleen due to a traffic accident at the age of 16 years, but did not have any repairs to the diaphragm. A computed tomographic scan confirmed that there were four nodules in the left hemithorax located posteriorly. The nodules, ranging from 10 to 45 mm in diameter, were present in the left hemithorax, all of the legions were round and noncalcified. Magnetic nuclear imaging showed that some of them had an isointensity with the paraspinal muscle on axial spin-echo T1-weighted (860/25[TR/TE]) image, with subcutaneous fat on T2-weighted (1670/70) image, the others, small sized tumors, had unclear intensity. The sample obtained at fine-needle biopsy was not histologically specific. Because of the clinical history, thoracic splenosis was considered a possible cause of these nodules, but it was impossible to rule out the possibility of other tumors or malignancies. The patient...
Fig. 1. Postanterior chest radiograph showing the nodules identified in the left hemithorax and at the left costophrenic angle.

underwent a video-assisted thoracoscopic surgery. Thoracoscope revealed reddish blue, smooth and lobular surface, well-encapsuled nodules rested on the parietal pleura, surrounded with radiative neovasculars from intercostal arteries. (Fig. 2) There were four nodules on the parietal pleura, the largest nodule was located at the costophregmatic recessus. The surface of the diaphragm, except the recessus, was intact, there was no suggested finding of injury. Concerning the risk of bleeding when cutting a section, we decided to resect only one of them with surround parietal pleura. The intraoperative microscopical study diagnosed the resected tumor as the splenic tissue. No bleeding or air leak was observed either during the surgical procedure or in the postoperative course. The 20 Fr. chest tube was placed through the lowest intercostal access site for the video-assisted thoracoscopic approach, that was removed 48 h postoperatively. Postoperative technetium-99m sulfur colloid scan revealed uptake of isotope by the splenic bed, a discretearea upper hemidiaphragm and by left hemithorax. The postoperative course was uneventful.

3. Comment

Post-traumatic intrathoracic splenosis was first reported at necropsy in 1937 by Shaw and Shafi [1]...
Thoracic splenosis follows a traumatic event involving the spleen and the diaphragma and is defined as autotransplantation of splenic tissue in thorax. Fewer than 30 cases have been previously published in English literature as this condition is a rare, to our knowledge [2,3]. All patients had a history of combined abdominal and thoracic trauma and almost generally were asymptomatic. The thoracic splenosis became evident 6–42 years after the thoracoabdominal injury. [4] Diagnostic investigations have included computed tomography, magnetic resonance examination [2], radionucleotide scanning (technetium-99m-labeled sulfur colloid, technetium-99m tagged heat-damaged red blood cells and indium-111-labeled platelets) [5], needle aspiration and the Tru-cut needle biopsy [6]. As almost all radiologic appearance is non-specific, many of these cases were performed thoracotomy on suspicion of pulmonary neoplasm. The MR imaging of two nodules reported here, were similar to the reported cases of thoracic splenosis [7], the others were unclear. As a fine needle aspiration biopsy was non diagnostic, our patient underwent video-assisted thoracoscopic tumor biopsy.

Video-assisted thoracoscopic surgery (VATS) is widely accepted for treatment and diagnosis of pleural and pulmonary disease. VATS has numerous desirable qualities including, minimum invasiveness, introduction of rapid resumption of general condition and it identifies the correct specimen. Moreover, compared to open biopsy, VATS can make more correct and adequate observations of small pleural tumors and diaphragma appearances in detail. We introduced the thoracoscopic living appearance of thoracic splenosis as the first reported case and hope that the photograph is of help in future diagnose of the disease. In our case, the diaphragm was intact thoracoscopically, but the fact that the largest nodule stayed at costodiaphragmatic recess suggested that the diaphragmatic tear was located there.

Surgical remove of the splenic tissue is generally considered inadvisable, except for sufferers of hematological disease because ectopic splenic tissue can protect against systemic bacterial infection for asplenic people [3,8]. However, in cases of symptomatic patients, surgical resection of splenic tissue may reduce their complaints [9]. On the grounds that the tumor was not solitary and preoperative diagnosis was not made in our case, one of four nodules was resected for histological examination with VATS, the other three nodules were left behind. There is no denying the possibility that the nodules are not splenic tissues completely and they may cause complications, for example, hemoptysis [9] and traumatic hemothorax in the future. Thus, it needs to be followed up carefully.

References