

Thoracic Splenosis

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ABSTRACT: A 22-year old man presented with the history of productive cough and also complained of some weight loss. Examination was essentially unremarkable. On detailed investigations like chest X-ray, CT thorax, Fine Needle Aspiration Cytology, Tc-99m scan, a diagnosis of thoracic splenosis was then made. To conclude, thoracic splenosis is a rare entity that needs patient's reassurance and radiological surveillance. It should also be considered as differential diagnoses of the pleural based masses

KEY WORDS: Thoracic Splenosis, Diagnosis, Pleural mass

INTRODUCTION:

Thoracic splenosis is the auto transplantation of splenic tissue into the peritoneal cavity, abdomen and pleural cavity, where the splenic tissue may grow in form of a nodule. It is usually as a result of trauma, rupture of spleen or previous operations. Although it is not a very uncommon entity, occurring mainly in the abdomen, its thoracic location is relatively rare.

The aim of presenting this case report is to highlight the fact that these rare thoracic lesions can raise the suspicion of malignancy and thus require a battery of investigations to rule out the same. There may be non-specific symptoms, which may be purely coincidental. Clinical consequences may be insignificant.

CASE REPORT:

A 22-year old man presented to his GP with a few week history of cough productive of green sputum. He had also complained of some weight loss, although admitted to reduced oral intake due to recent night shifts. He worked as a process operator in a factory making circuit boards. He was a non-smoker. His past medical history was unremarkable except for a road traffic accident at the age of 6 years, for which he underwent splenectomy, left nephrectomy and repair of the diaphragm. Examination was

essentially unremarkable. A chest X-ray ordered by the GP revealed a lobulated low density pleural based mass in the left upper zone, which prompted the referral to chest physicians.

A CT of the thorax was then performed which showed a pleural-based soft-tissue mass posteriorly in the left upper and mid zones. In view of the history of weight loss, malignancy needed to be excluded, hence resulting in CT Fine Needle Aspiration given the peripheral location of the mass. Cytology was however inconclusive, with blood stained smears containing chronically inflamed vascular connective tissue. Full Blood Count was also reported to be normal, although the blood film was not analyzed. The history of thoracoabdominal trauma however then came into light, and a Tc-99m scan was performed. Interestingly this showed evidence of splenic tissue uptake in areas of the lung corresponding to the lesions on the CT thorax. A diagnosis of thoracic splenosis was then made. The patient was reassured and informed that his initial respiratory symptoms may have simply been a red herring. It was planned that he remained for regular radiological surveillance, but the patient subsequently failed to attend any further clinics.

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DISCUSSION:

Splenic tissue can survive and grow when transplanted into extrasplenic sites such as peritoneal cavity, subcutaneous tissue and abdominal muscles. Abdominal splenosis was first described by Von Kütner et al in 1910, when splenic tissue seeding was noted in the peritoneal cavity of post-mortem cases. Thoracic splenosis, a condition involving the auto transplantation of splenic tissue in the left hemithorax secondary to trauma to the spleen and diaphragmatic rupture, was subsequently described by Shaw and Shafi in 1937 at autopsy¹. Splenic implants have been shown to derive their blood supply from the surrounding pleura and grow into mature splenic tissues.

Thoracic splenosis, was once considered to be uncommon, with the abdominal variety being more frequently encountered. However there is data, albeit limited, to suggest that thoracic splenosis may not be as uncommon as previously perceived; Normand et al. performed Tc99m tagged heat damaged erythrocyte scintigraphy on 17 patients who had sustained splenic and diaphragmatic injury². Interestingly, 65% of the patients had evidence of abdominal or pelvic splenosis, whilst 18% has thoracic splenosis.

Medline search between 1937 and 2005 has revealed 31 reported cases on thoracic splenosis so far³⁻¹⁴. There is unequivocally a history of thoracoabdominal trauma, with all patients undergoing splenectomy. The time interval from trauma to diagnosis of thoracic splenosis ranged from 3 to 42 years. In all cases, the lesions were in the pleural cavity, although in 1 of the cases, splenic tissue had seeded in to the lung parenchyma secondary to lung laceration. Only 3 cases were symptomatic, with 2 patients presenting with hemoptysis and the other with pleuritic chest pain^{3,5,14}. Radiographic findings included either solitary or multiple pleural based masses between 2-3 cm in diameter, although a nodule as large as 8.5 cm has been mentioned. In all cases the nodules were in the left hemi thorax and as they tended to be of low density, the sensitivity of CT chest to detect the lesions was higher than that of the plain CXR.

The differential diagnoses of these pleural based masses would be wide, but investigations tended to primarily exclude malignancy, especially if found in men aged above 50 years.

The peripheral location of the nodule would often prompt percutaneous biopsy, especially if splenosis was not considered as part of the differential. The previous case reports have shown that the cytological appearance can be

rather variable and by no means pathognomic but is usually predominantly characterized by a population of small and large lymphocytes, often in a background of hemorrhage and endothelial cells. The lymphocytic infiltrative picture can occasionally mislead to a possible diagnosis of lymphoproliferative disorder. A mixture of cell types including eosinophils and pigment laden macrophages could also be expected if nodules were intraparenchymal in location. If enough tissue were obtained, for example via Trucut biopsy, histology may also show evidence of splenic parenchyma^{13,16}.

Thoracoscopy was performed in 3 cases but the findings were limited by the dense amount of pleural adhesions necessitating thoracotomy, when multiple reddish-brown well-encapsulated masses adherent to either pleural layer were evident¹⁷.

Other less specific features which may lead to the suspicion of preserved splenic tissue in a patient who has had splenectomy includes the absence of Howell-Jolly or Heinz bodies, and the presence of pitted erythrocytes and siderocytes in the peripheral blood film, although these were not a universal finding in all the reported cases.

Radionuclide imaging^{5,9,10,12} studies can help confirm the presence of ectopic splenosis by the use of agents which are sequestered in the reticuloendothelial system. One of the earlier agents used was Tc99m sulphur colloid, but nowadays Indium-labeled platelets or Tc99m heat damaged erythrocytes are recommended due to decreased uptake by liver tissue thereby increasing target-to-background ratio. Auto transplanted splenic tissue has been shown to function in animal studies and to provide some degree of resistance to serious infections¹⁸.

CONCLUSION:

None of the studies reported any significant clinical sequelae to thoracic splenosis, Patients can simply be reassured and kept under radiological surveillance. Surgical resection is therefore not recommended. In fact, there are some controversies regarding the possible role of remaining ectopic splenic tissue in the immunological protection against overwhelming sepsis if sufficient splenic parenchyma is present.

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