

Oncology

Right retroperitoneal splenosis presenting as an adrenal mass



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ARTICLE INFO

Article history:

Received 3 August 2017

Accepted 18 August 2017

Available online 26 October 2017

Keywords:

Splenosis

Adrenal mass

Tc-99m heat-damaged autologous red blood cell scan

intraperitoneal masses with identical signal characteristics, initially felt to be concerning for a malignancy (Fig. 1A). A fine needle biopsy of the predominant adrenal mass showed benign lymphoid tissue. She was referred to urology for adrenalectomy to help establish a tissue diagnosis. Her history of splenic rupture raised clinical suspicion for splenosis. Splenosis was confirmed by Tc-99m labeled heat-damaged autologous red blood cell SPECT-CT, which showed uniform radiotracer uptake in all nodules (Figs. 1B and 2). No further work-up was pursued and unnecessary surgical intervention was avoided.

Discussion

Splenosis is autotransplantation of splenic parenchyma at the time of trauma or splenectomy. After rupture or capsule compromise, splenic pulp dislodges and 'seeds' accessible locations. Splenules are usually intraperitoneal, often in the splenic fossa and left upper quadrant. Extra-peritoneal splenosis, as in our case, is less common. Splenules have been reported in subcutaneous tissue, pericardium, liver, retroperitoneum, and the brain. Extra-peritoneal splenosis is possible when direct communication is made with the peritoneum at the time of injury or during surgery. Splenules are found most frequently in the left retroperitoneum in cases involving retroperitoneal splenosis. However, right retroperitoneal splenules have been reported.^{2–4} Presumably, the right posterior partial peritoneum was compromised at the time of the accident or during surgery, creating a pathway for splenic pulp to seed the right retroperitoneum.

Splenosis represents a benign condition as there are no reports of splenosis-related fatalities. However, complications do occur, including abdominal pain, GI bleeds, bowel obstruction, intussusception, pleurisy, and hemoptysis. Surgical intervention is not warranted in simple, uncomplicated splenosis.¹

Splenosis is typically found incidentally on imaging and uniformly associated with a history of splenic trauma or splenectomy. The differential diagnosis of abdominal splenosis may include metastatic disease, pheochromocytoma, lymphoma, carcinomatosis, hepatic or renal malignancy, endometriosis, or simple adenopathy. Traditional imaging techniques cannot differentiate splenosis from malignancy. This may result in unnecessary invasive procedures, which could be avoided using specialized contrast enhanced imaging studies to confirm the diagnosis. Both Tc-99m

Introduction

Ectopic splenic tissue may be congenital or acquired. Splenules can result from trauma or, less frequently, splenectomy, in which splenic parenchyma seeds accessible tissue to subsequently develop ectopic splenic tissue. This process of auto-transplantation is known as splenosis. Splenosis is a rare, benign condition most often found incidentally on imaging.¹ Here, we describe a patient with a suspected adrenal malignancy successfully diagnosed as splenosis through Tc-99m labeled heat-damaged autologous red blood cell single-photon emission computed tomography-computed tomography (SPECT-CT) imaging, thus avoiding surgical intervention.

Case presentation

A 69 year old woman was referred to our clinic for a right upper quadrant mass arising near the adrenal gland, found by ultrasound during work up for a urinary tract infection. She reported moderate back pain for the past year. Her history was significant for a ruptured spleen status post splenectomy for a motor vehicle accident fifty years prior.

MRI showed a solid 4.4 cm mass that appeared to be arising from within the right adrenal gland, and multiple smaller

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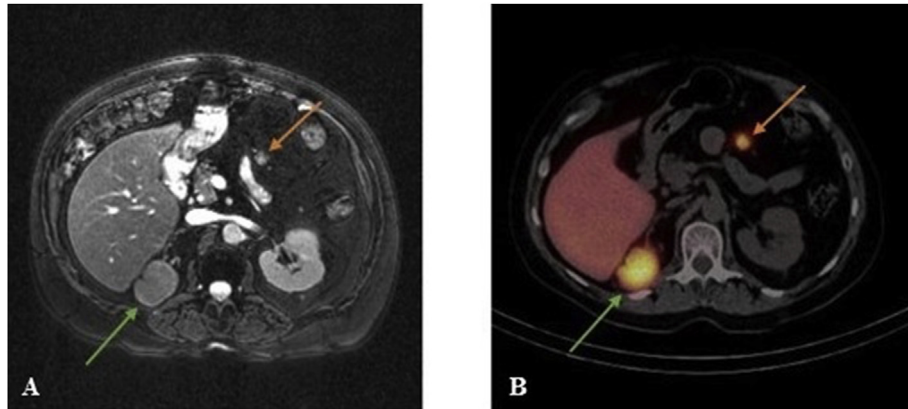


Fig. 1. Axial view of the patient's abdomen on magnetic resonance imaging with contrast (A) and Tc-99m heat-damaged autologous red blood cell scan SPECT/CT (B). The adrenal mass (green arrow) and intraperitoneal mass (orange arrow) show uniform uptake of Tc-99m heat-damaged autologous red blood cells, indicating splenic origin.

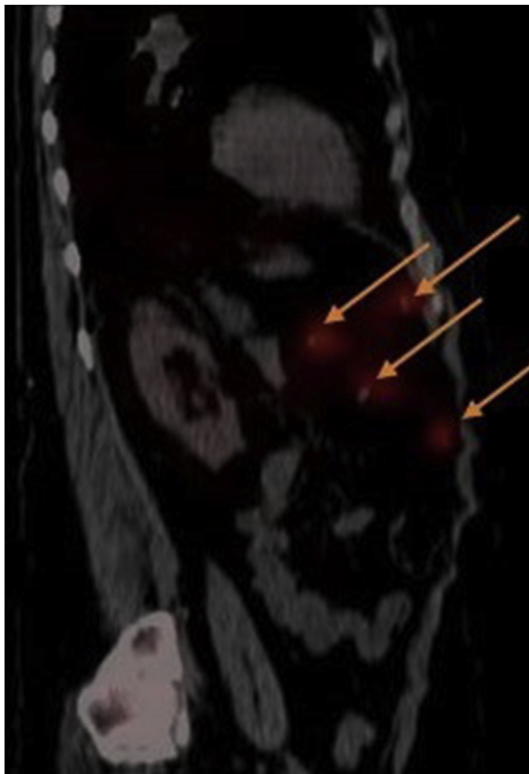


Fig. 2. Sagittal view of the patient's abdomen Tc-99m heat-damaged autologous red blood cell scan SPECT/CT. The scan shows uniform uptake of Tc-99m heat-damaged autologous red blood cells in the previously identified intraperitoneal masses (orange arrows), indicating splenic origin.

sulfur colloid scan and Tc-99m heat-damaged autologous red blood cell scan can diagnose splenosis non-invasively with high specificity and sensitivity. However, Tc-99m Heat-damaged autologous heat-damaged red blood cell scan had a 32% greater diagnostic yield when directly compared to sulfur colloid scan.⁵

Conclusion

Splenosis represents a benign entity that may mimic malignancy and should be considered during the work-up of an unknown peritoneal, retroperitoneal, or thoracic mass in patients with a history of splenic trauma or splenectomy. Tc-99m heat-damaged autologous red blood cell SPECT-CT can non-invasively diagnose splenosis.

Informed consent & ethics approval

Written informed consent was obtained from the patient for publishing this article and accompanying images.

Conflicts of interest

None.

Funding

This research did not receive any specific grant from funding agencies in the public, commercial, or not-for-profit sectors.

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