

Splenosis as a Malignancy Mimicker and its Diagnostic Challenge

Esplenose como Mimetizadora de Malignidade e o seu Desafio Diagnóstico

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Abstract

This case report demonstrated that ^{99m}Tc-heat-denatured red blood cells Single-Photon Emission Computed Tomography/Computed Tomography (^{99m}Tc-DRBC SPECT/CT) can have a major role in the definitive and noninvasive diagnosis of splenosis, a benign entity that can mimic peritoneal seeds.

Keywords

Splenosis; Splenic rupture; Nuclear medicine; Single photon emission computed tomography/computed tomography.

Resumo

Este caso clínico demonstrou que a cintigrafia com eritrócitos fragilizados e radiomarcados com ^{99m}Tc (^{99m}Tc-DRBC SPECT/CT) pode ter um papel importante no diagnóstico definitivo e não-invasivo da esplenose, uma entidade clínica benigna que pode mimetizar implantes peritoneais.

Palavras-chave

Esplenose; Ruptura esplénica; Medicina nuclear; Single photon emission computed tomography/computed tomography.

Received: 26/07/2024

Accepted: 22/08/2024

Published: 31/08/2025



Background

Splenosis is an acquired benign condition that refers to the heterotopic autotransplantation of splenic tissue following splenic trauma or splenectomy, whose incidence is unknown. The most affected locations are the peritoneal and pelvic cavities by contiguous spread, but there are cases described in the brain and heart, via hematogenous dissemination. Most patients are asymptomatic, and it is often found incidentally. If symptomatic, clinical presentation varies according to the affected site. Splenosis can radiologically mimic other conditions requiring differentiated imaging methods for its definitive diagnosis.^{1,2} We present the case of peritoneal splenosis mimicking peritoneal carcinomatosis.

Case Report

A 56-year-old male with cardiomyopathy with left ventricular hypertrophy, precapillary pulmonary hypertension, atrial fibrillation, arterial hypertension, dyslipidemia, obesity, alcohol consumption and a history of splenectomy over 30 years before, following trauma, presented with increase in abdominal perimeter and unspecific abdominal discomfort lasting for several months. Upon physical examination, clinically evident ascites was noted.

Laboratory work-up revealed no abnormalities in the complete blood count and no evidence of coagulopathy. There was an elevated aspartate aminotransferase (40 U/L) and gamma-glutamyltransferase (328 U/L) (Reference

Range: 10-34 and 10-66 U/L, respectively). Serologies for human immunodeficiency virus, hepatitis B and C viruses were negative. Autoimmune hepatitis, alpha-1-antitrypsine deficiency and hemochromatosis were excluded. Abdominal ultrasonography and contrast-enhanced computed tomography (CT) revealed hepatomegaly with signs of congestion, including massive ascites, and a heterogeneous aspect of the mesenteric fat with multiple unspecific isodense round/oval nodules, but no evidence of a primary tumor. A diagnostic hypothesis of peritoneal carcinomatosis was formulated.

Peritoneal histologic and cytologic assessment were negative for malignancy. Endoscopic studies, thoracic-abdominopelvic CT and [¹⁸F]F-FDG Positron Emission Tomography/CT (PET/CT) did not find suspicious neoplastic lesions.

After multidisciplinary discussion and given the patient's history of splenectomy, a diagnosis of splenosis was considered. A ^{99m}Tc-heat-denatured red blood cells (^{99m}Tc-DRBC) Single Photon Emission (SPECT)/CT (Fig.1) enhanced multiple and scattered foci with increased radiotracer uptake within the peritoneal cavity, that were coincident with the known unspecific abdominal nodules on CT (Fig. 2) with variable size, confirming the splenosis hypothesis.

After excluding malignancy, the patient started diuretic therapy on behalf of decompensated chronic liver disease, with resolution of ascites and abdominal discomfort.

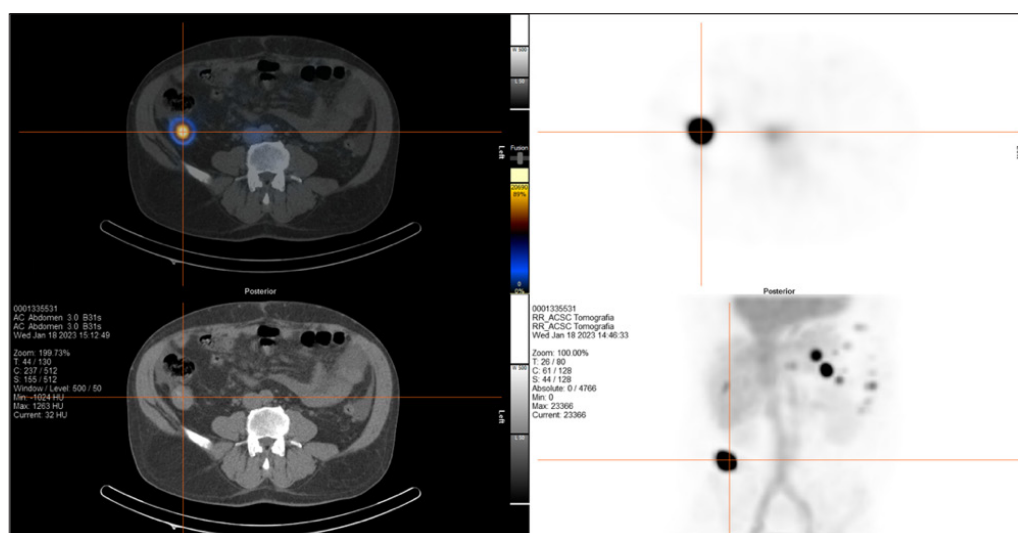


Figure 1 – ^{99m}Tc -DRBC SPECT and MIP image (top right and bottom right) showing multiple and scattered abdominal foci with increased radiotracer uptake that can be fused with CT morphological image (bottom left), displaying hybrid SPECT/CT (top left), consistent with splenosis.

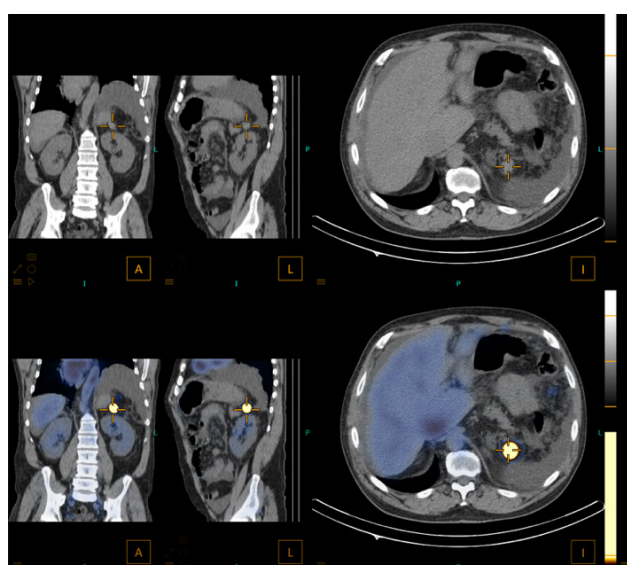


Figure 2 – Nodule measuring 20x19mm posterior to the stomach on morphological images (non-contrast CT; top line) that is coincident with the foci with increased radiotracer uptake on ^{99m}Tc -DRBC SPECT/CT (bottom line).

Discussion

This case highlights the consideration of splenosis as a possible cause of unspecific abdominal nodules, as it may mimic poor prognostic conditions, such as peritoneal carcinomatosis, especially when there is no evidence of primary malignancy and there is a previous history of splenic rupture or surgery. The use of non-invasive functional imaging, such as ^{99m}Tc -DRBC SPECT/CT, may reveal its definitive diagnosis.³ This case further emphasizes the importance of a multidisciplinary approach involving medical, surgical and imaging teams.

Ethical Disclosures / Divulgações Éticas

Conflicts of interest: The authors have no conflicts of interest to declare.

Conflitos de interesse: Os autores declaram não possuir conflitos de interesse.

Financing Support: This work has not received any contribution, grant or scholarship.

Suporte financeiro: O presente trabalho não foi suportado por nenhum subsídio ou bolsa.

Confidentiality of data: The authors declare that they have followed the protocols of their work center on the publication of data from patients.

Confidencialidade dos dados: Os autores declaram ter seguido os protocolos do seu centro de trabalho acerca da publicação dos dados de doentes.

Protection of human and animal subjects: The authors declare that the procedures followed were in accordance with the regulations of the relevant clinical research ethics committee and with those of the Code of Ethics of the World Medical Association (Declaration of Helsinki).

Proteção de pessoas e animais: Os autores declaram que os procedimentos seguidos estavam de acordo com os regulamentos estabelecidos pelos responsáveis da Comissão de Investigação Clínica e Ética e de acordo com a Declaração de Helsínquia da Associação Médica Mundial.

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