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A rare case of spontaneous splenic rupture

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ABSTRACT

Spontaneous splenic rupture is a rare and potentially fatal condition, most often associated with trauma or underlying splenic disease. Its occurrence in a previously healthy individual remains exceptional and may delay diagnosis. We report the case of a 37-year-old man with no past medical history who presented with acute left upper quadrant abdominal pain and hemodynamic instability. Abdominal contrast-enhanced computed tomography showed spontaneous splenic rupture with parenchymal laceration, subcapsular hematoma, and massive hemoperitoneum. Emergency splenectomy was performed due to hemodynamic instability, with a favorable outcome. This case highlights the importance of considering spontaneous splenic rupture in patients with acute abdominal pain and shock, even in the absence of trauma, and underlines the key role of CT imaging in diagnosis and management.

KEYWORDS

Spontaneous splenic rupture; Acute abdomen; Hemoperitoneum; Computed tomography

MAIN ARTICLE

Introduction

Spontaneous splenic rupture is an uncommon clinical entity, distinct from traumatic splenic injury, and is usually associated with infectious, hematological, inflammatory, or neoplastic conditions [1]. Truly spontaneous rupture of a normal spleen without identifiable predisposing factors is exceedingly rare [2]. Clinical presentation is often nonspecific and may rapidly progress to hemorrhagic shock, making early diagnosis essential. Imaging, particularly contrast-enhanced computed tomography, plays a pivotal role in confirming the diagnosis and guiding therapeutic management [3]. We report a rare case of spontaneous splenic rupture in a previously healthy adult male.

Case report

A 37-year-old man with no past medical history and no history of recent trauma presented to the emergency department with sudden-onset severe pain in the left upper quadrant of the abdomen. On examination, the patient was pale and distressed, with hemodynamic instability. Blood pressure was approximately 90/60 mmHg and heart rate was 115 beats per minute. Abdominal examination revealed intense tenderness in the left hypochondrium with guarding.

Laboratory investigations showed acute anemia with a hemoglobin level of 8.2 g/dL, consistent with ongoing hemorrhage. There was no biological evidence of infection or coagulation disorder.

An urgent abdominal ultrasound revealed a large-volume intraperitoneal effusion suggestive of hemoperitoneum. Contrast-enhanced computed tomography was subsequently performed and demonstrated spontaneous splenic rupture, with a splenic parenchymal laceration (Figure1) associated with a large subcapsular hematoma (Figure 2) and massive hemoperitoneum (Figure 3). The spleen was of normal size and morphology, without focal lesions or signs of underlying disease, and no traumatic injuries were identified elsewhere. Given the hemodynamic instability and the extent of intra-abdominal bleeding, emergency surgical management was indicated. The patient underwent splenectomy, which confirmed splenic rupture without underlying macroscopic pathology. Postoperative recovery was uneventful, and the patient was discharged in stable condition after appropriate vaccinations.

Discussion

Spontaneous splenic rupture is a rare but life-threatening condition that accounts for a small proportion of splenic injuries. In most reported cases, an underlying pathological condition is identified, including infections, hematological malignancies, inflammatory diseases, or anticoagulant therapy [1]. Rupture of a normal spleen, as observed in our patient, remains exceptional and continues to raise diagnostic and pathophysiological challenges [2].

Clinical presentation is often misleading due to the absence of trauma, which may delay diagnosis. Acute left upper quadrant abdominal pain associated with signs of hypovolemia should alert clinicians to the possibility of splenic rupture, even in previously healthy patients [1,2]. Imaging therefore plays a central role in early recognition.

Ultrasound is frequently used as an initial diagnostic tool, especially in unstable patients, allowing rapid detection of hemoperitoneum. However, contrast-enhanced CT is the gold standard for diagnosis, providing precise assessment of splenic parenchymal injury, associated hematomas, and the extent of intraperitoneal bleeding [3]. CT findings are essential to guide management and to rule out alternative diagnoses or underlying splenic pathology.

Management strategies depend primarily on the patient's hemodynamic status. Conservative treatment and splenic artery embolization may be considered in stable patients, while surgical intervention remains mandatory in cases of hemodynamic instability or massive hemoperitoneum [4]. In our case, splenectomy was required and led to a favorable outcome, underscoring the importance of prompt diagnosis and appropriate therapeutic decision-making.

Conclusion

Spontaneous splenic rupture is a rare diagnosis that should be considered in patients presenting with acute abdominal pain and hemorrhagic shock, even in the absence of trauma or known splenic disease. Prompt imaging, particularly contrast-enhanced CT, is crucial for diagnosis and management. Early surgical intervention remains life-saving in hemodynamically unstable patients.

FIGURES:

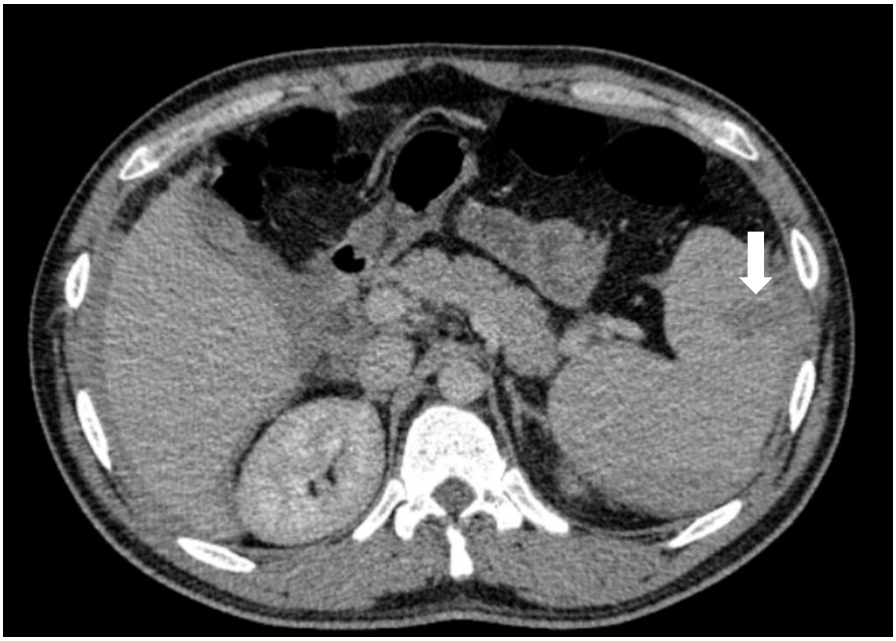

Figure 1 : Contrast-enhanced axial CT image demonstrating a linear splenic parenchymal laceration (arrow) consistent with splenic rupture.

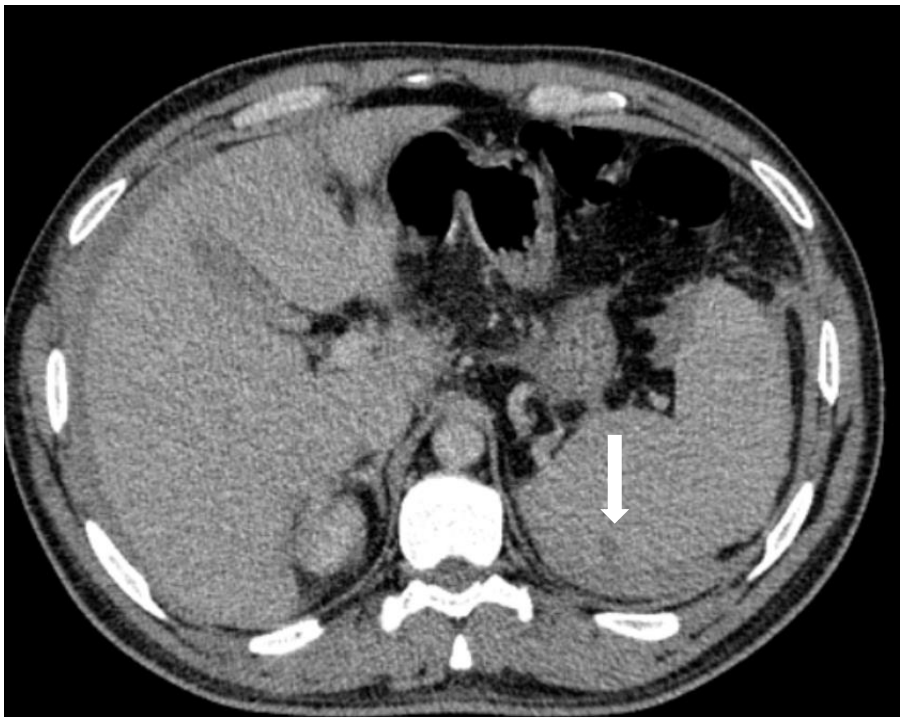

Figure 2 : Contrast-enhanced axial CT image showing a large subcapsular splenic hematoma (arrow).

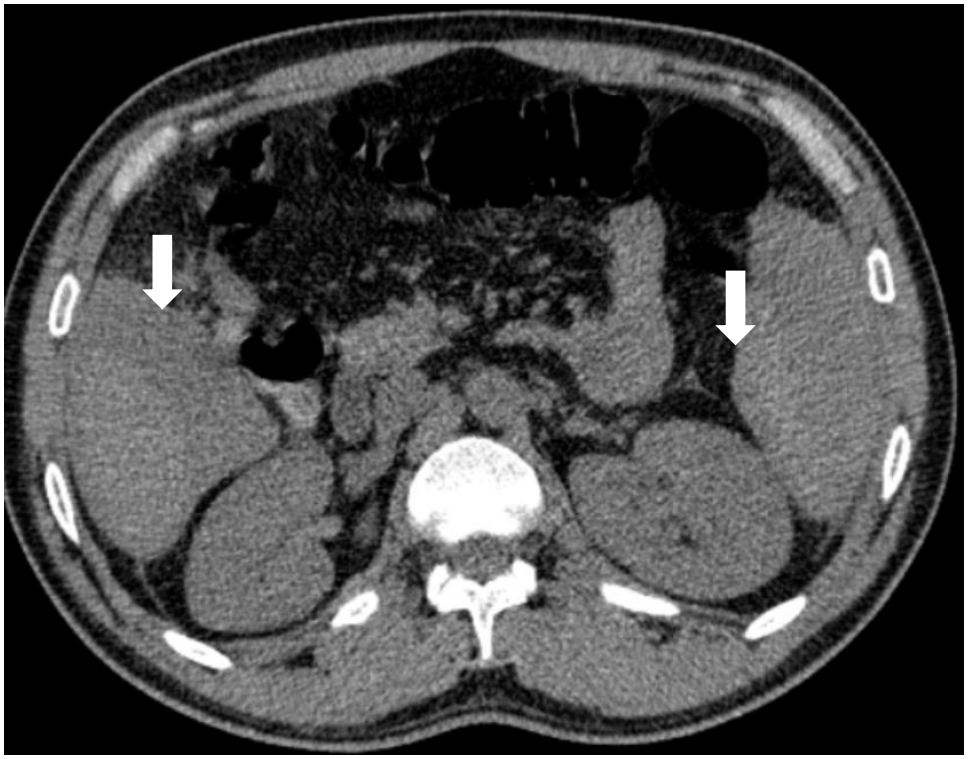

Figure 3 : Axial CT image demonstrating hemoperitoneum with high-attenuation fluid consistent with hemorrhagic effusion (arrows).

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