

Case Report

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Spontaneous Rupture of the Spleen: A Case Report

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ABSTRACT

This article discusses the complexities of diagnosing and treating splenic rupture, a potentially fatal condition typically associated with trauma, but also linked to a myriad of other pathologies. We detail a case study of a 61-year-old patient, presenting with spontaneous splenic rupture, diagnosed through various clinical examinations, blood tests, and imaging studies. A comprehensive discussion follows, shedding light on the different causes of non-traumatic splenic rupture, diagnostic challenges, and the significance of CT scan in confirming the diagnosis and grading the severity of the injury. This article further highlights the criteria established by Orloff and Peskin, as well as Crate and Payne, for diagnosing spontaneous splenic rupture. We conclude by emphasizing the need for heightened clinical suspicion in diagnosing spontaneous splenic rupture, the critical role of abdominal CT scan in such cases, and the necessity of considering laparotomy for patients with high-grade injuries who do not respond to resuscitation.

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Received: July 03, 2023; **Accepted:** July 10, 2023; **Published:** July 17, 2023

Keywords: Spleen, Rupture, Spontaneous, CT

Introduction

Splenic rupture, typically caused by trauma, is a potentially fatal condition. However, it may also be associated with various other pathologies, such as hematological, neoplastic, inflammatory, and infectious diseases.

While rare, spontaneous splenic rupture is crucial to consider when examining abdominal pain, given its potentially severe consequences. Diagnosis usually involves a laparotomy, especially in hemodynamically unstable patients, or a CT scan with various grading systems assisting in assessing severity and informing treatment choices. Despite numerous case reports of spontaneous splenic rupture, a thorough evaluation of incidence rates, causes, symptoms, management, and prognosis is yet to be conducted.

Case Report

We present a case of a 61-year-old patient presented to the emergency department with sudden-onset abdominal pain with vomiting. The patient had no significant medical history, particularly no history of recent or previous trauma and did not report any history of medication use.

The patient reported experiencing a nearly similar set of symptoms approximately one month ago. Clinical examination revealed a tender abdomen with abdominal guarding.

The patient was stable hemodynamically and respiratorily, and the rest of the examination was unremarkable.

Blood tests showed a hemoglobin level of 6g/dl. The patient underwent an urgent abdominal ultrasound, which revealed a moderate amount of echogenic peritoneal fluid with some

areas of septation, along with heterogeneous appearance of the spleen. Subsequently, a contrast-enhanced abdominal CT scan was performed for a more comprehensive evaluation, which demonstrated an enlarged disrupted spleen with spontaneously hyperdense areas. The spleen showed heterogeneous enhancement after contrast administration. An ultrasound-guided paracentesis was performed, which confirmed the presence of bloody ascitic fluid [1-4].

The clinical presentation and imaging data supported the diagnosis of splenic rupture. The etiological investigation, which came back negative, along with the absence of pathological history, allowed us to confirm the spontaneous origin of the rupture. Since the patient was clinically stable, he received a symptomatic treatment and was placed under observation.

Discussion

Non traumatic splenic rupture may occur on a pathological or normal spleen; it can be due to an infectious disease, hematological disorder, systemic disease, local inflammatory disorders or other conditions.

Rupture of the spleen can be also due to

- Reflex spasm of the splenic vein.
- Intermittent torsions of an abnormally mobile spleen.
- Chronic splenic congestion due to high pressure in the portal vein.
- Rupture of a splenic artery with a degenerative or aneurysmal condition.
- Unrecognized or forgotten trauma.
- Increase in abdominal pressure.

Without a trauma history, the diagnosis of splenic rupture is not straightforward, even when the clinical presentation is suggestive.

Although an ultrasound scan may be clinically helpful, a CT scan is frequently required to make the diagnosis and grade the splenic injury. The rupture of the spleen can be identified in imaging as a splenic lacerations, a subcapsular or intraparenchymal hematoma associated with an enlarged spleen and hemoperitonium.

Based on the results of the CT, we assign a grading scale. This rating takes into account any hilar involvement, the size of the splenic laceration, and any concomitant hemorrhage.

Higher-grade (IV-V) injuries typically require surgery, although lower-grade (I-II) injuries may be treated conservatively. If a patient is hemodynamically stable, they may even be treated conservatively for high-grade splenic damage as it was the case of our patient.

Orloff and Peskin established four criteria to label the rupture of the spleen as spontaneous: the absence of a history of trauma, the absence of perisplenic adhesions indicating past trauma, the absence of pathology with splenic involvement, and histological evidence of an intact spleen. Crate and Payne added a fifth criterion: negative serology for viruses that can cause splenic damage.

For our patient, since the treatment was conservative, we could not obtain histological evidence of the integrity of the splenic parenchyma, but since all other criteria were met, the diagnosis of spontaneous splenic rupture was upheld.

Conclusion

Since spontaneous splenic rupture is a rare condition, doctors should suspect the diagnosis with great caution. To diagnose this potentially lethal illness, an abdominal CT scan is frequently necessary, especially when the clinical diagnosis is uncertain. It's important to take into account additional viral, neoplastic, and inflammatory reasons of atraumatic splenic rupture. In cases with grade IV splenic injury, conservative therapy is unlikely to be effective, and laparotomy should be considered as a last resort if the patient's hemodynamic status does not improve despite resuscitation.

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