ECRONICON OPEN ACCESS

EC CLINICAL AND MEDICAL CASE REPORTS

Case Report

Spontaneous Rupture of the Spleen in the Context of Non-Hodgkin Lymphoma: A Rare Case Report

Sara Ez-zaky*, Kenza Bentalha, Sara Essetti, Jamal El Fenni and Rachida Saouab

Radiology Department, Mohamed V Military Instruction Hospital, Rabat, Morocco

***Corresponding Author:** Sara Ez-zaky, Radiology Department, Mohamed V Military Instruction Hospital, Rabat, Morocco.

Received: May 03, 2024; **Published:** June 18, 2024

Abstract

Spontaneous splenic rupture is a rare occurrence, typically seen in cases of pre-existing spleen pathology. We present a unique case of atraumatic splenic rupture in a 30-year-old male with Hodgkin's lymphoma. He presented to the emergency department with abdominal pain, and subsequent abdominal ultrasound and CT scan confirmed splenic rupture.

The symptoms of atraumatic splenic rupture mirror those of traumatic cases, including abdominal pain, particularly in the left upper abdomen or upper middle abdomen, along with dizziness, nausea, and/or vomiting.

In patients with underlying hematologic malignancies, splenic rupture should be considered in the differential diagnosis for acute abdominal symptoms or sudden onset of anemia, even in the absence of trauma. Ultrasound and CT imaging play crucial roles in confirming the diagnosis.Haut du formulaire

Keywords: *Ultrasound; CT Imaging; Spontaneous Rupture; Spleen; Non-Hodgkin Lymphoma*

Introduction

Non-traumatic or spontaneous spleen ruptures are uncommon but can lead to serious consequences, including death [1]. Identifying these ruptures can be challenging, often resulting in delayed treatment, which, combined with the severity of the underlying condition, contributes to high mortality rates [2]. These ruptures may occur in either a healthy spleen or one affected by a pre-existing condition. The most commonly reported non-traumatic causes include infectious diseases, hematological disorders, and cancers. In this study, we present a case of spontaneous spleen rupture associated with non-Hodgkin lymphoma.

Case Report

A 30-year-old man with non-Hodgkin's lymphoma presented to the emergency department due to abdominal pain. On physical examination, he appeared pale with a temperature of 37°C, blood pressure of 110/60 mmHg, and a regular heart rate of 90 beats per minute. Palpation revealed hepatosplenomegaly and mild signs of peritoneal irritation. Other aspects of the physical examination were unremarkable. Laboratory tests at admission showed a white blood cell count of 10,000/mm^3, hemoglobin level of 11 g/dl, and platelet count of 304,000/mm^3. Over the next 24 hours, the patient's abdominal pain worsened, accompanied by increased peritoneal irritation, low blood pressure (80/40 mmHg), tachycardia (120 beats per minute), and anemia (hemoglobin level of 8 g/dl). Abdominal ultrasound revealed a heterogeneous spleen with perihepatic and paracolic gutter peritoneal fluid, as well as fluid in the pouch of Douglas. Subsequent abdominal CT scan with contrast showed a subcapsular splenic hematoma and a large hemoperitoneum. Emergency surgery revealed an enlarged spleen with friable parenchyma, necessitating total splenectomy. The postoperative recovery was uneventful.

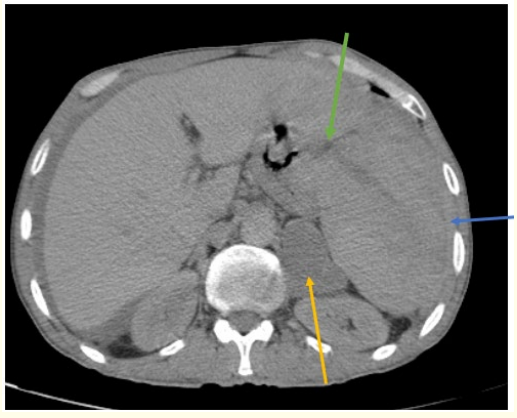

Figure 1: *Axial section of an abdominal CT scan following contrast injection demonstrating: a heterogeneous spleen with splenic lacerations (green arrow), a subcapsular splenic hematoma (blue arrow) and perihepatic fluid accumulation. Note: Left retroperitoneal adenopathy with necrotic center (yellow arrow).*

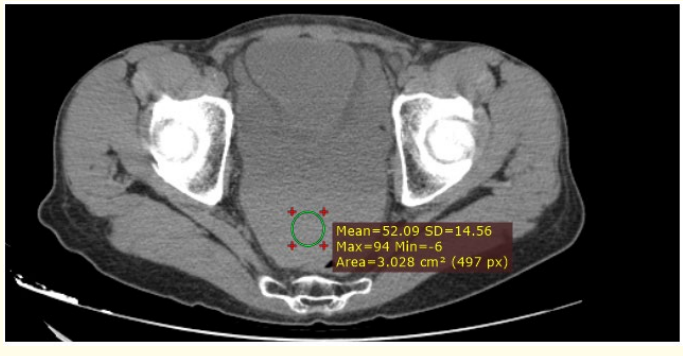

Figure 2: *Axial section of an abdominal CT scan without contrast injection showing a large pelvic fluid accumulation with hematoma density.*

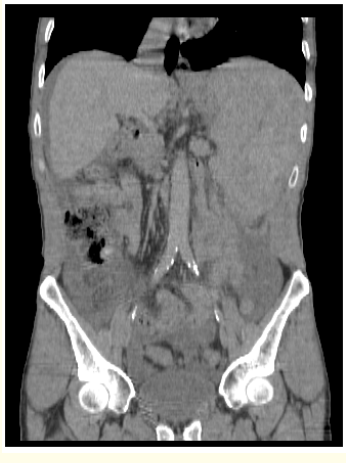

Figure 3: *Coronal reconstruction of an abdominal CT scan showing a heterogeneous spleen with splenic lacerations associated with hemoperitoneum.*

Discussion

Non-traumatic spleen rupture is an infrequent occurrence, as indicated by Liu., *et al*.'s study, which reported a 3.2% prevalence [4]. The initial instances of spontaneous non-traumatic spleen rupture were documented by Rokitansky in 1861 and Atkinson in 1874 [2,5]. Between 1950 and 2011, there were 613 cases of spontaneous spleen rupture documented in English and French literature [3-5].

In over 50% of cases, non-traumatic spleen rupture stems from infectious diseases like brucellosis, tuberculosis, septicemia, and hemolytic anemias, with infectious mononucleosis (IM) and malaria being the most common culprits [6]. Hematological causes include acute leukemia, autoimmune thrombocytopenia, and Gaucher's disease. Additionally, it may manifest in the presence of splenic tumors, pancreatitis, portal hypertension (HTP), or end-stage chronic kidney disease.

Spontaneous spleen rupture is a rare phenomenon in malignant hematological disorders, usually occurring in a spleen previously compromised by other factors. Our study presents a case of non-traumatic spleen rupture in a patient with lymphoma.

The exact pathophysiology of non-traumatic spleen rupture remains elusive, though three mechanisms have been proposed. Firstly, increased intra-splenic pressure due to congestion and cellular hyperplasia; secondly, spleen compression by abdominal muscles during physical activity or minor triggers (coughing, defecation, sneezing); and thirdly, vascular occlusion due to endothelial reticulum hyperplasia, leading to thrombosis and infarction. These mechanisms result in interstitial and subcapsular hemorrhages, as well as capsule detachment, potentially leading to further subcapsular hemorrhage and eventual capsule rupture [3].

Symptoms of non-traumatic spleen rupture mirror those of traumatic rupture, including acute abdominal pain, particularly in the left hypochondrium or epigastrium, dizziness, nausea, and/or vomiting. Left shoulder pain due to diaphragmatic irritation (Kehr's sign) may also manifest. Clinical examination typically reveals tender abdominal palpation, especially in the left hypochondrium, guarding, and sometimes signs of shock [4].

Acute abdominal pain and splenomegaly warrant ultrasound for diagnosis, followed by abdominal CT scans for etiological investigation and lesion characterization. CT scans typically reveal lacerations accompanied by subcapsular and/or intraperitoneal hemorrhage. Notably, spontaneous rupture often presents with splenomegaly as an additional characteristic. When non-traumatic spleen rupture occurs, it suggests underlying conditions associated with splenomegaly and a predisposition to spontaneous rupture, including various illnesses such as infectious mononucleosis, malaria, typhoid fever, viral hepatitis, leukemia, metastatic carcinoma, hemophilia, actinomycosis, sarcoidosis, amyloidosis, Gaucher's disease, and splenic cysts [7,8].

Therapeutically, splenectomy is the definitive treatment for spontaneous spleen ruptures. However, given the associated morbidity of splenectomy, advancements in surgical techniques and intensive care, and the spleen's role in the immune response, conservative treatment may be considered. This approach appears viable under specific conditions: hemodynamic stability, requiring fewer than 2 units of packed red blood cells transfusion, daily clinical and regular biological monitoring, rest, and hospitalization in a facility proximal to a surgical center [9].

Conclusion

Diagnosing spontaneous spleen rupture can be challenging due to its rarity, especially without any traumatic context. Ultrasound and CT scans play a crucial role in aiding the diagnosis.

Bibliography

1. Schwarz M., *et al*. "Spontaneous splenic rupture in infectious mononucleosis: conservative management with gradual percutaneous drainage of a subcapsular hematoma". *Pediatric Surgery International* 15.2 (1999): 139-140.

2. Farley DR., *et al*. "Spontaneous rupture of the spleen due to infectious mononucleosis". *Mayo Clinic Proceedings* 67.9 (1992): 846-853.

3. Gedik E., *et al*. "Non-traumatic splenic rupture: Report of seven cases and review of the literature". *World Journal of Gastroenterology* 14.43 (2008): 6711-6716.

4. Orloff MJ and Peskin GW. "Spontaneous rupture of the normal spleen a surgical enigma". *International Abstracts of Surgery* 106.1 (1958): 1-11.

5. Aubrey-Bassler FK and Sowers N. "613 cases of splenic rupture without risk factors or previously diagnosed disease: a systematic review". *BMC Emergency Medicine* 12 (2012): 11.

6. Kianmanesh R., *et al*. "Ruptures non traumatiques de la rate: trois nouveaux cas et revue de la literature". *Annales de Chirurgie* 128.5 (2003): 303-309.

7. Frecentese DF and Cogbill TH. "Spontaneous splenic rupture in infectious mononucleosis". *American Surgeon* 53.9 (1987): 521-523.

8. Young GP. "Abdominal catastrophes". *Emergency Medicine Clinics of North America* 7.3 (1989): 699-720.

9. Papp C., *et al*. "Rupture de rate au cours des maladies infectieuses: splénectomie ou traitement conservateur, Àpropos de trois cas". *La Revue de Médecine Interne* 23.1 (2002): 85-91.

Volume 7 Issue 7 July 2024