

Case report



Spontaneous splenic rupture: case report and review of literature

Tariq Ahbala, Khalid Rabbani, Abdelouahed Louzi, Benasser Finech

Corresponding author: Tariq Ahbala, General Surgery, Mohammed VI University Hospital Center of Marrakech, Marrakech, Morocco. ahbala.tariq@gmail.com

Received: 20 Aug 2020 - **Accepted:** 20 Aug 2020 - **Published:** 08 Sep 2020

Keywords: Splenic rupture, atraumatic, unknown etiology

Copyright: Tariq Ahbala et al. Pan African Medical Journal (ISSN: 1937-8688). This is an Open Access article distributed under the terms of the Creative Commons Attribution International 4.0 License (<https://creativecommons.org/licenses/by/4.0/>), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Cite this article: Tariq Ahbala et al. Spontaneous splenic rupture: case report and review of literature. Pan African Medical Journal. 2020;37(36). 10.11604/pamj.2020.37.36.25635

Available online at: <https://www.panafrican-med-journal.com//content/article/37/36/full>

Spontaneous splenic rupture: case report and review of literature

Tariq Ahbala^{1,&}, Khalid Rabbani¹, Abdelouahed Louzi¹, Benasser Finech¹

¹General Surgery, Mohammed VI University Hospital Center of Marrakech, Marrakech, Morocco

&Corresponding author

Tariq Ahbala, General Surgery, Mohammed VI University Hospital Center of Marrakech, Marrakech, Morocco

Abstract

Splenic rupture is a potentially life-threatening condition, often associated with chest or abdominal trauma. Spontaneous rupture is very rare and is usually reported as being secondary to underlying pathological conditions. We report a case of atraumatic splenic rupture in a patient with no underlying disease pathology. This case should remind the emergency physician spontaneous splenic rupture should be considered in the differential diagnosis of unexplained acute abdominal pain.

Introduction

Splenic rupture is mainly caused by trauma. But in some rare cases, it can also occur without obvious trauma, known as atraumatic splenic rupture (ASR) or spontaneous spleen rupture. ASR is often life threatening due to the delay of diagnosis and treatment.

Patient and observation

A 62-year-old man, with chronic smoking, arrived at the emergency department complaining of abdominal pain with sudden-onset. On arrival, there was a collapse, blood pressure 90/60mmHg and pulse 109/min, the patient was pale, afebrile and had an abdominal defense. The hemoglobin was at 8 g/dl and WBC at 19000/mm³. After resuscitation measures and transfusion of 4 units of red blood cells transfusions, the ultrasound examination showed echogenic peritoneal effusion with hypoechogenic mass of the left hypochondrium (Figure 1). As the patient remained haemodynamically unstable, he underwent an exploratory laparotomy. During laparotomy, there was a hemoperitoneum related to complete decapsulation of spleen (Figure 2). The decision was made to proceed to a splenectomy. Histological examination confirmed the non-pathological aspect of a decapsulated spleen. The patient's hospital course was unremarkable. The patient received pneumococcal, meningococcal and haemophilus vaccinations and was discharged on life-long penicillin prophylaxis.

Discussion

Atraumatic splenic rupture was first documented in the 19th century. The first cases of spontaneous splenic rupture were described by Laseter *et al.* [1] in 2004 and Badenoch *et al.* [2] in 1985. The real cause of the rupture has not yet been clearly identified [3]. The incidence rate of ASR has not been clarified. Liu *et al.* showed that the incidence of ASR was 3.2% (8/251) [4]. ASR are

twice as common in men. The age varies from 2 to 81 years (average = 42 years). In about a third of cases, there are signs of shock at the first examination. In 8% of cases, patients die before being operated on and the diagnosis is only made at autopsy [5]. Three mechanisms were involved in the process: the increase in intrasplenic tension linked to cell hyperplasia and engorgement; compression by the abdominal muscles during sneezing, coughing or defecating; vascular occlusion by hyperplasia of the endothelial reticulum responsible for infarction associated or not with a subcapsular hematoma [6]. The etiology of atraumatic rupture of the spleen can be examined under six subgroups namely, I) infectious, II) neoplastic, III) inflammatory, IV) congenital or structural, V) iatrogenic and VI) idiopathic [7]. Spontaneous rupture of the normal spleen represents a problem in diagnosis. In the absence of trauma, diagnosis of splenic rupture is not always made by considering just the classic signs and symptoms of left upper quadrant (LUQ) pain, guarding and haemodynamic instability [8]. The existence of abdominal pain and painful massive splenomegaly points to splenic involvement which must be confirmed urgently by ultrasound, which is the first line examination. However, computed tomography presents better sensitivity for the lesion assessment [9]. In terms of treatment, splenectomy is a radical cure for spontaneous rupture of the spleen. However, the morbidity of splenectomy, improved surgical techniques and intensive care, and the role of the spleen in the immune response have allowed us to provide conservative treatment. In some cases, this seems to be another option: hemodynamic stability, resort to blood transfusions with less than 2 red blood cell particles, daily routine and biological clinical monitoring, rest and hospitalization in departments near the surgery center treatment [10].

Conclusion

Spontaneous splenic rupture without a history of trauma is an uncommon life-threatening

abdominal emergency. The pathogenesis of the disease remains unclear. In patients with atraumatic left hypochondrial pain and low hemoglobin, splenic rupture should be kept in mind.

Competing interests

The authors declare no competing interests.

Authors' contributions

All the authors have read and agreed to the final manuscript.

Figures

Figure 1: ultrasound showing a hypoechogenic range of the splenic compartment

Figure 2: macroscopically healthy spleen

References

1. Laseter T, McReynolds T. Spontaneous splenic rupture. *Mil Med.* 2004 Aug;169(8): 673-4. **PubMed** | **Google Scholar**
2. Badenoch DF, Maurice HD, Gilmore OJ. Spontaneous rupture of a normal spleen. *J R Coll Surg Edinb.* 1985 Oct;30(5): 326-7. **PubMed** | **Google Scholar**
3. Abbadi S, Rhouni F, Jroundi L. Rupture spontane de la rate: à propos d'un cas et revue de la litterature. *Pan Afr Med J.* 2017;27: 27. **PubMed** | **Google Scholar**
4. Liu J, Feng Y, Li A, Liu C, Li F. Diagnosis and treatment of a traumatic splenic rupture: experience of 8 cases. *Gastroenterol Res Pract.* 2019;2019: 582769 Published 2019 Jan 28. **PubMed** | **Google Scholar**
5. Kianmanesh R, Aguirre HI, Enjaumb F, Valverdec A, Brugièred O, Vacher B *et al.* Ruptures non traumatiques de la rate: trois nouveaux cas et revue de la littérature. *Annales de Chirurgie.* Juin 2003;128(5): 303-309. **PubMed** | **Google Scholar**
6. Mokashi AJ, Shirahatti RG, Prabhu SK, Vagholkar KR. Pathological rupture of malarial spleen. *J Postgrad Med.* 1992 Jul-Sep;38(3): 141-2. **PubMed** | **Google Scholar**
7. Renzulli P, Hostettler A, Schoepfer AM, Gloor B, Candinas D. Systematic review of atraumatic splenic rupture. *Br J Surg.* 2009;96: 1114-1121. **PubMed** | **Google Scholar**
8. Lieberman ME, Levitt MA. Spontaneous rupture of the spleen: a case report and literature review. *Am J Emerg Med.* 1989; 7(1): 28-31. **Google Scholar**
9. Delgado Millan MA, Deballon PO. Computed tomography, angiography and endoscopic retrograde cholangiopancreatography in the nonoperative management of hepatic and splenic trauma. *World J Surg.* 2001 Nov;25(11): 1397-402. **PubMed** | **Google Scholar**
10. Papp C, Debord T, Imbert P, Lambotte O, Roué R. Rupture de rate au cours des maladies infectieuses: splénectomie ou traitement conservateur? À propos de trois cas. *Rev Med Interne.* 2002;23: 85-91. **PubMed** | **Google Scholar**



Figure 1: ultrasound showing a hypoechoic range of the splenic compartment

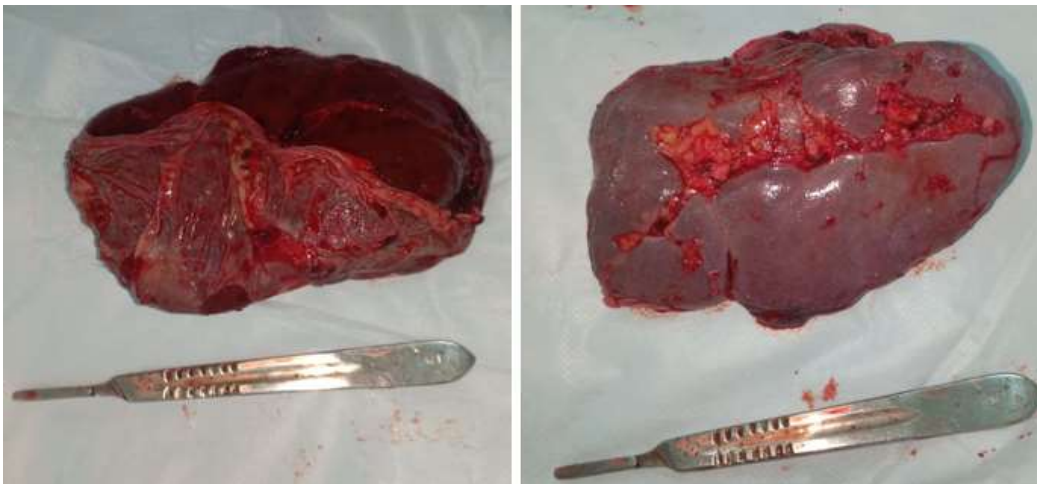


Figure 2: macroscopically healthy spleen