

## SPONTANEOUS SPLENIC RUPTURE – A COMPLICATION OF CIRRHOSIS WITH PORTAL HYPERTENSION

### ROTURA ESPLÉNICA ESPONTÂNEA – UMA COMPLICAÇÃO DA CIRROSE COM HIPERTENSÃO PORTAL

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#### ABSTRACT

**Introduction:** Splenic rupture is a potentially life-threatening condition, often associated with trauma. Spontaneous rupture is very rare and is usually reported as being secondary to underlying pathological conditions. **Case Report:** An 89-year-old female patient presented to the emergency department with a sudden-onset abdominal pain in the left hypochondrium following a coughing episode. Investigation revealed that the patient had a spleen with signs of laceration with evidence of acute hemorrhage. The patient's condition deteriorated clinically with hemodynamic instability and an exploratory laparotomy was proposed. During laparotomy a splenic rupture was identified and the decision was made to proceed to a splenectomy. **Discussion:** Non-traumatic splenic rupture, is a rare but life-threatening complication. Clinical manifestations consist of sudden-onset left upper quadrant pain, abdominal rigidity and hemodynamic instability. Chronic liver cirrhosis is associated with multiple complications and portal hypertension causes increased congestion in the portal system, leading to splenomegaly. Even a minor physical event, such as coughing, vomiting, or sneezing might cause rupture of a pathologically fragile, enlarged spleen. Total splenectomy is the mainstay of treatment and allows diagnosis of the underlying problem.

**Keywords:** splenomegaly; splenectomy; portal hypertension.

#### RESUMO

**Introdução:** A rotura esplénica é uma condição potencialmente fatal, frequentemente associada a trauma. A rotura espontânea é muito rara e geralmente relatada como sendo secundária a condições patológicas subjacentes. **Relato do Caso:** Uma doente de 89 anos apresentou-se no serviço de urgência com dor abdominal de início súbito no hipocôndrio esquerdo após um episódio de tosse. A investigação revelou que a doente tinha um baço com sinais de laceração e evidências de hemorragia aguda. A condição da doente deteriorou-se clinicamente com instabilidade hemodinâmica, e foi proposta uma laparotomia exploratória. Durante a laparotomia, foi identificada uma rotura esplénica e decidiu-se proceder a uma esplenectomia. **Discussão:** A rotura esplénica não traumática é uma complicação rara, mas potencialmente fatal. As manifestações clínicas consistem em dor súbita no quadrante superior esquerdo, rigidez abdominal e instabilidade



hemodinâmica. A cirrose hepática crónica está associada a múltiplas complicações, e a hipertensão portal causa aumento da congestão no sistema portal, levando à esplenomegalia. Mesmo um evento físico menor, como tosse, vômitos ou espirros, pode causar a rotura de um baço patologicamente frágil e aumentado. A esplenectomia total é o principal tratamento e permite o diagnóstico do problema subjacente.

**Palavras-chave:** *esplenomegalia; esplenectomia; hipertensão portal.*

## INTRODUCTION

Splenic rupture is a potentially life-threatening condition, often associated with trauma. Spontaneous rupture is very rare and is usually reported as being secondary to underlying pathological conditions.<sup>1</sup> This paper presents a case of atraumatic splenic rupture in a patient with cirrhosis and portal hypertension. This case should remind the emergency physician that spontaneous splenic rupture should be considered in the differential diagnosis of unexplained acute abdominal pain.

## CASE REPORT

An 89-year-old patient followed for hepatic cirrhosis with portal hypertension presented to the emergency department with sudden-onset severe acute abdominal pain in the left hypochondrium following a coughing episode while choking on water.

On arrival, the patient was pale, dehydrated, apyretic and hemodynamically unstable with a blood pressure of 74/39mmHg and a pulse of 109 beats per minute. Physical examination showed generalized abdominal pain with signs of peritoneal irritation. The patient denied any abdominal trauma before the pain.

The laboratory tests noted microcytic hypochromic anaemia with a hemoglobin level of 8.1 g/dl, and an acute renal failure (Cr 1.75mg/dl). Resuscitation with fluid therapy and blood was initiated with an

initial transient response and a contrast-enhanced computed tomography (CECT) scan confirmed that the patient had a heterogeneous spleen with signs of laceration, showing a voluminous hematic collection, measuring 73x82mm, with evidence of acute haemorrhage and extravasation of contrast in the collection (figure 1 and 2). Despite the measures taken the patient's condition deteriorated clinically with hemodynamic instability and an exploratory laparotomy was proposed.

During laparotomy around 1.5 liters of hemorrhagic fluid were removed from the peritoneal cavity and a splenic rupture was identified (figure 3 and 4). The decision was made to proceed with a splenectomy.

Histological examination confirmed the non-pathological aspect of the decapsulated enlarged spleen with 292 grams. The patient's hospital had an uneventful recovery until she was discharged after 8 days.

## DISCUSSION

Non-traumatic splenic rupture, called spontaneous splenic rupture (SSR) is a rare but life-threatening complication, first documented in the 19th century. Causes of SSR can be divided into six main categories: infectious, neoplastic, inflammatory, congenital, iatrogenic and idiopathic.<sup>2</sup>

Clinical manifestations of SSR consist of sudden-onset left upper quadrant pain, abdominal rigidity and hemodynamic instability. Patients sometimes have left shoulder-tip pain caused by diaphragmatic



Figure 1

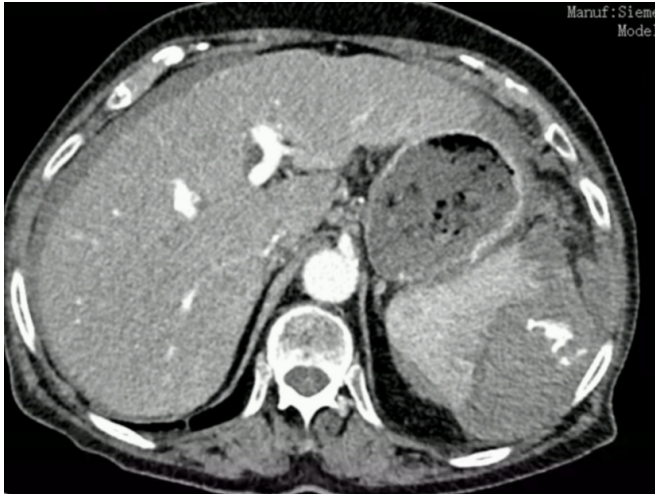
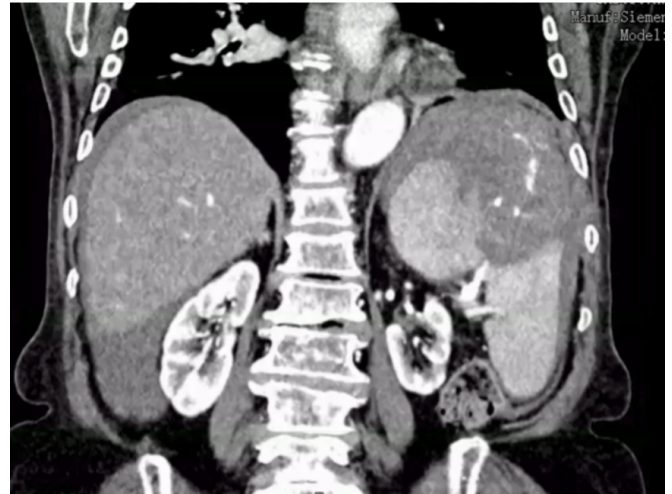


Figure 2

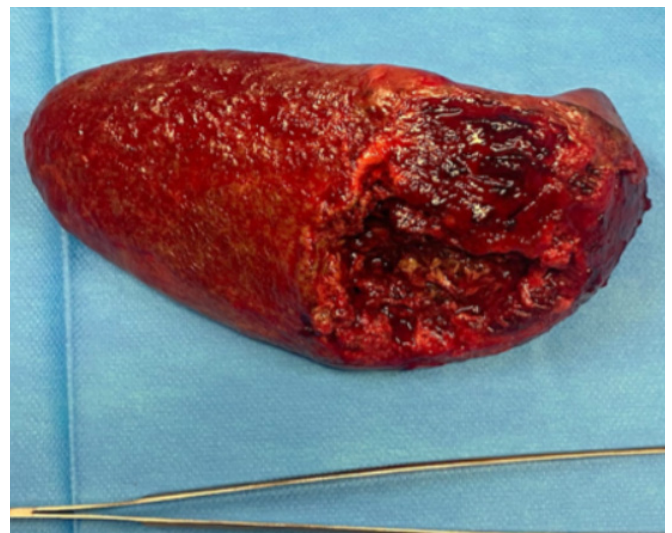


FIGURES 1 AND 2 – Evidence of acute haemorrhage and extravasation of contrast in the collection.

Figure 3



Figure 4



FIGURES 3 AND 4 – A splenic rupture.

irritation (Kehr's sign). Chronic liver cirrhosis is associated with multiple complications and portal hypertension causes increased congestion in the portal system, leading to splenomegaly. Even a minor physical event, such as coughing, vomiting, or sneezing might cause rupture of a pathologically fragile, enlarged spleen and treatment is quite different from that of blunt traumatic splenic rupture.<sup>3,4</sup>

Abdominal computed tomography is a sensitive and specific radiological test for affirming the diagnosis and assessment of the severity of splenic involvement.

Total splenectomy is the mainstay of treatment and also allows diagnosis of the underlying problem. A conservative approach should be attempted only in patients in whom the underlying cause is known to be benign and with hemodynamic stability.<sup>4</sup>



## CONCLUSION

Spontaneous rupture of the spleen is a rare and serious condition that can be life-threatening.

Symptoms are usually acute, but progressive forms are possible. The diagnosis is confirmed by abdominal imaging and treatment most often consists of a splenectomy.

## REFERENCES

1. Renzulli P, Hostettler A, Schoepfer AM, Gloor B, Candinas D. Systematic review of atraumatic splenic rupture. *Br J Surg* 2009; 96: 1114–21.
2. Ahbala T, Rabbani K, Louzi A, Finech B. Spontaneous splenic rupture: case report and review of literature. *Pan Afr Med J*. 2020 Sep 8;37:36
3. Aubrey-Bassler FK, Sowers N. 613 cases of splenic rupture without risk factors or previously diagnosed diseases: a systemic review. *BMC Emerg Med* 2012; 12: 11.
4. Safae Roudi, Z. Benjelloun, A. Ait Errami, S. Oubaha, Z. Samlani, K. Krati, Spontaneous Splenic Rupture – A Rare Complication of Cirrhosis with Portal Hypertension: A Case Report – SAS Journal of Medicine | Volume-9 2023 | Issue-04

