ARCHIVES OF HELLENIC MEDICINE: ISSN 11-05-3992

CONTINUING MEDICAL EDUCATION
ΣΥΝΕΧΙΖΟΜΕΝΗ ΙΑΤΡΙΚΗ ΕΚΠΑΙΔΕΥΣΗ

Surgery Quiz – Case 60

ARCHIVES OF HELLENIC MEDICINE 2026, 43(1):143–144
ΑΡΧΕΙΑ ΕΛΛΗΝΙΚΗΣ ΙΑΤΡΙΚΗΣ 2026, 43(1):143–144

A. Skarpas,
E. Mpalla,
N. Christoforou,
E. Kyrochristou,
I. Sionti,
E. Rapti,
I. Souggas

Department of Surgery, General Hospital of Filiates, Filiates, Thesprotia, Greece

A 79-year-old patient presented at the emergency room with pain in the lower left part of the thorax. Blood exam revealed hematocrit (Hct) 25%, hemoglobin (Hgb) 8.0 g/dL. From history taking the patient complained that he felt in the bathroom 10 days ago. The only finding was from the abdominal X-ray (figures 1 to 3).

Comment

This entity is an uncommon but potentially life-threatening complication following blunt abdominal trauma. It is characterized by the onset of splenic rupture days to weeks after the initial injury, often when the patient is no longer under close medical supervision. While abdominal pain is the most common presenting symptom, atypical manifestations such as shortness of breath or fatigue can obscure the diagnosis, leading to delays in treatment. The spleen is a tender, fist-sized organ in the upper left abdomen. It's primarily responsible for storing and filtering blood. It stores and filters 25% of the red blood cells and platelets at any given time, while helping to make white blood cells to fight infections. The anatomy of the spleen makes it relatively easy to injure, especially by a blunt trauma to the outer capsule. If this capsule tears or splits, it's called a splenic rupture. If the spleen ruptures, it's the most likely of all the abdominal organs to cause life-threatening internal bleeding. A ruptured spleen is a medical emergency. Non-traumatic or spontaneous splenic rupture is rare but possible. It can happen when an underlying condition causes the spleen to swell, gradually weakening the outer capsule until it breaks. Conditions that may cause spontaneous rupture of the spleen are cancer, such as lymphoma, infections, such as mononucleosis or malaria, chronic inflammatory diseases, such as hepatitis (liver disease) or pancreatitis.

Delayed splenic rupture (DSR) was defined in 1907 by Baudet

Figure 1.

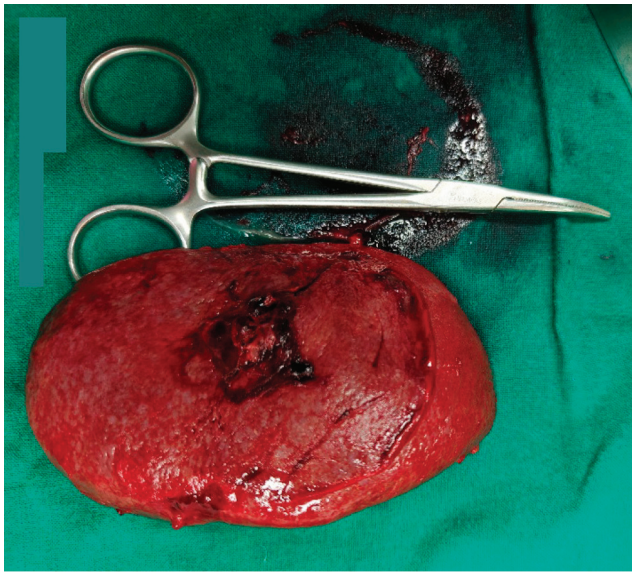

Figure 2.

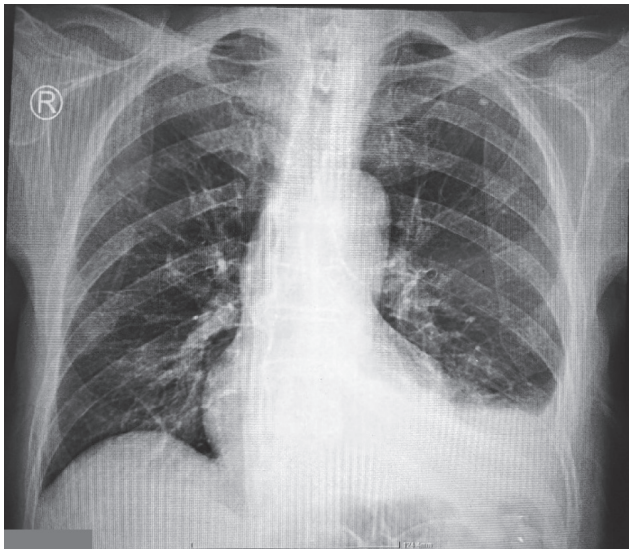

Figure 3.

as a rupture of spleen 48 hours or later after injury. This asymptomatic period is also known as the "latent period of Baudet". Most of the DSR occur within a week after injury. Over the past few decades, there has been an increasing shift from operative management (OM) to non-operative management (NOM) of blunt splenic injury (BSI) to preserve immunological functions of spleen and reduce the risk of surgery.

Most of the reported cases of high-grade splenic injury and DSR were following major traumatic events, such as road traffic accidents, fall from height or contact sports. Since the 1970s, the treatment of blunt splenic trauma has evolved from almost exclusively surgical to selective use of non-surgical treatment in hemodynamically stable patients. Understanding of the immunologic importance of the spleen and its role in protection against overwhelming post-splenectomy infection (OPSI) led to development first of surgical techniques for splenic salvage and later to protocols for nonsurgical treatment of adults with splenic injury. Missed splenic injury is the most common cause of preventable death after blunt abdominal trauma. Compared with patients in whom injury is promptly recognized, those with delay in diagnosis of splenic trauma have a ten-fold increase in mortality. It is therefore important to have a high index of suspicion for this diagnosis when evaluating patients with blunt trauma. The most common finding associated with splenic rupture is left lower rib fractures, which occur in >40% of cases (fig. 3). When such fractures are present, further assessment with abdominal and pelvic computed tomography (CT) is required. The classic triad associated with blunt splenic rupture is (a) left hemidiaphragm elevation, (b) left lower lobe atelectasis, and (c) left pleural effusion, which is frequently absent and cannot be considered a reliable indicator.

Any patient who does have left hemidiaphragm elevation after blunt trauma should be considered to have a splenic injury until it is proven otherwise. Once the diagnosis is made, treatment depends on the hemodynamic condition of the patient. Unstable patients require emergency splenectomy, whereas those in stable condition can undergo non-operative management. The incidence is approximately 1%, and it tends to occur between 4 and 8 days after injury. Mortality ranges from 5% to 15%, compared with 1% mortality for acute injury. Prompt recognition of the signs and symptoms of delayed splenic rupture is essential. Patients typically exhibit hypotension, tachycardia, worsening abdominal pain and distension, and a decreasing hematocrit. The treatment of choice is splenectomy, as splenorrhaphy can be extremely difficult in patients in whom surgical treatment has failed. Some centers will perform angioembolization in hemodynamically stable patients.

References

1. NIMMONS W, GETTO LP. Delayed presentation of splenic rupture after colonoscopy. *Am J Emerg Med* 2020, 38:1043.e5-1043.e6
2. KIM TY, ROH YI, CHA KC, HWANG SO, JUNG WJ. Delayed splenic rupture: A rare complication of snakebites. *Wilderness Environ Med* 2021, 32:78–82
3. ZHANG J, ZHU G, LIU L, XU S, JIA C. Delayed traumatic splenic rupture as a life-threatening clinical manifestation treatable with splenectomy: A study of twelve cases and literature review. *Ann Ital Chir* 2025, 96:296–308
4. HSIEH JM, LAND G, MIYATA N, SEFA T, ASOMAH F. Delayed splenic rupture secondary to chronic staple line leak following laparoscopic sleeve gastrectomy: A case report. *Cureus* 2025, 17:e78697

Corresponding author:

A. Skarpas, Department of Surgery, General Hospital of Filiates, 463 00 Filiates, Thesprotia, Greece
e-mail: andrewskarpas@gmail.com