

젊은 남자 환자에서 발생한 자발적 비장 파열: 증례보고

국군수도병원 외과, ¹고신의대 복음병원 외과

이성배, 최영일¹

- Abstract -

Spontaneous Normal Splenic Rupture: A Case Report

Sung Bae Lee, M.D., Young Il Choi, M.D.¹

Department of Surgery, The Armed Forces Capital Hospital, Seongnam, Korea,

¹Department of Surgery, Kosin University Gospel Hospital, Kosin University College of Medicine

Rupture of the spleen is relatively common, both immediately and in a delayed fashion following significant blunt abdominal trauma. However, atraumatic splenic rupture rarely occurs. Multiple underlying pathologies have been associated with splenic rupture without trauma, including hematological, neoplastic, inflammatory and infectious conditions. In our case, a 21-year-old male without prior medical history visited the hospital with left upper quadrant abdominal pain that had started one day earlier. He had no history of trauma. An abdominal computed tomography (CT) scan found a collection of perisplenic fluid, accompanying a splenic rupture. Due to the patient's stable vital signs and lack of clinical progression of hemorrhage, he underwent conservative treatment. The patient was discharged at day 14 without complication.

Rupture of a normal spleen without a history of trauma is not often reported, and it has long been a subject of debate. Ruptures of normal spleen almost always follow some kind of trauma, such as a car accidents or a fall from significant heights. Here, we report a case of spontaneous rupture of a normal spleen in the absence of other medical pathologies or triggering factors. [J Trauma Inj 2014; 27: 208-10]

Key Words: Splenic rupture, Spontaneous

I. Introduction

Rupture of the spleen is relatively common both immediately and in a delayed fashion following signif-

icant blunt abdominal trauma.(1) However, atraumatic splenic rupture rarely occurs. Multiple underlying pathologies have been associated with splenic rupture without trauma, including hematological, neoplastic,

* Address for Correspondence : **Young Il Choi, M.D.**

Department of Surgery, Kosin University College of Medicine,

34 Amnam-dong, Seo-gu, Busan 602-703, Korea

Tel : 82-51-990-6462, Fax : 82-51-246-6093, E-mail : tsojc@naver.com

Submitted : July 15, 2014 **Revised** : August 6, 2014 **Accepted** : August 10, 2014

inflammatory and infectious conditions.(2-5)

Rupture of a normal spleen without a history of trauma is reported less often, and it has long been a debating problem.(6) Normal spleen ruptures almost always following some kind of trauma, such as car accidents or fall down from significant heights. Now we are reporting a case of spontaneous rupture of normal spleen in the absence of other medical pathologies and triggering factor.

II. Case

A 21-year-old male was transferred to the emergency department with a chief complaint of left upper quadrant abdominal pain of one day. He denied any history of recent trauma. He had no medical history or examination regarding coagulation disorder.

The patient visited other local hospital and was checked by computer tomography. Then he was diagnosed splenic rupture and transferred to our hospital. On arrival, physical examination showed left upper quadrant tenderness and rebound tenderness. Conjunctival pallor and abdominal distension were noted. The blood pressure was 131/63 mmHg, pulse 85/min, and body temperature 37.3°C. Laboratory test revealed hemoglobin 10.1 g/dL, platelet count 145,000 μ l, aspartate aminotransferase 21 IU/L, alanine aminotransferase 20 IU/L, blood urea nitrogen 22.6 mg/dL, and creatinine 1.1 mg/dL and prothrombin time 13.1 sec (international normalized ratio 1.36).

Abdominal computed tomography (CT) scan found



Fig. 1. Abdominal compute tomography finding reveal splenic rupture, perisplenic and perihepatic fluid collection, and large amount of hematoma.

perisplenic fluid collection, accompanied with splenic rupture (Fig. 1, 2). He was seronegative for malaria antigen and Widal test. Blood test for Epstein-Barr virus was negative and Ecchinococcus Ab was also negative. Due to the patient's stable vital sign and lack of clinical progression of hemorrhage, the patient was put to conservative treatment. The patient underwent intensive treatment for 3 days in the intensive care unit. Abdominal tenderness started to improve and disappeared at day 5, and a follow-up CT scan performed at the 7th hospital day found diminution of hemoperitoneum and improvement of the damaged spleen. The patient was discharged at day 14th hospital day without complication.

III. Discussion

A non-traumatic ruptured spleen is a condition less common in patients presenting with acute abdominal pain and can result in severe morbidity and mortality when diagnosed late due to doctor's delay. Overall mortality rate is 10~15%.(7) Pain is a frequent presenting symptoms of splenic rupture. As the differential diagnosis of this kind of pain is wide and many patients have no known background disease, important time may be wasted waiting for the result of diagnostic tests.(8)

The diagnosis of splenic rupture is a clinical one,

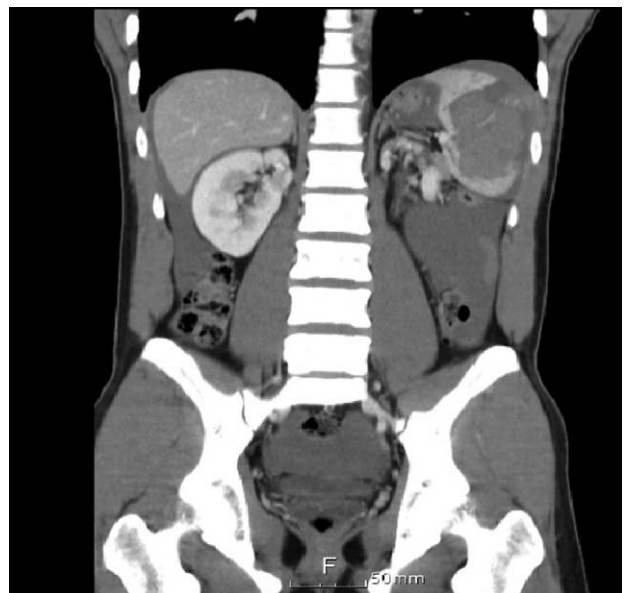


Fig. 2. Abdominal compute tomography finding reveals perisplenic fluid collection and splenic hematoma.

confirmed by either CT scan or laparotomy (in hemodynamically unstable patients). Several grading systems based on CT or ultrasound findings have been established for splenic rupture and each has been shown to be useful for guiding management decisions. Use of imaging procedures such as abdominal ultrasound or computed axial tomography can minimize this diagnostic difficulty.(9) We have found abdominal CT to be very helpful for diagnosis and follow up. It helped not only in the proper selection of patients for surgery or observation but also in focusing operative intervention in the face of massive hemoperitoneum.

Historically the treatment of choice for all kinds of splenic rupture used to be splenectomy; however, nowadays due to recent advances in surgical techniques and conservative treatment, it is now more common apply conservative treatment in the setting of stable vital sign and lack of progression of hemorrhage. Nonoperative management consists of observation for 7~14 days in the hospital, strict bed rest, and administration of fluid and blood as needed. Delayed rupture rarely occurs. Splenectomy remains the treatment of choice in patients with a hemoperitoneum and severe hypovolemic shock.(10) The clinical situation should be the most important factor in deciding management plans.

The three commonest causes of spontaneous splenic rupture are malignant hematological disorder, viral infectious disorders and local inflammatory and neoplastic disorders. Malignant hematological disorder include acute leukemia and non-Hodgkin's lymphoma. Among infectious disorder, infectious mononucleosis is considered the most likely to cause spontaneous splenic rupture and the second cause is malaria infection.(7)

According to the statistics provided by Korea Centers for Disease Control and Prevention, the annual incidence of malaria has increased since 1993, reaching a peak in 2000 with 4,142 cases, which then decreased until 2004 and has since increased again. During that same period, a large number of malaria infection occurred in military camps.(11) *Plasmodium vivax* that is especially prevalent in Korea is characterized by mild clinical progression, and occasional splenic complications

are known to occur.(12) For our patient was young soldier who perform military service around the 38th parallel line of South Korea, we speculated malarial infection. However, peripheral blood smear and malaria antigen test showed that there was no evidence for malarial infection. There was no evidence of infection or malignant disease in our case.

We have reported on a unique case of spontaneous rupture of a normal spleen. We showed the successful management of severe splenic ruptured patient with conservative treatment. Physicians should consider the diagnosis of spontaneous splenic rupture in patient with abdominal pain and hypotension even without a history of trauma.

REFERENCES

- 1) Olsen WR, Polley TZ Jr. A second look at delayed splenic rupture. *Arch Surg* 1977; 112: 422-5.
- 2) Wada S, Kitazume K, Suzuki T, Fujita A, Shimizu S. Splenic rupture associated with aggressive conversion of indolent T-cell prolymphocytic leukemia. *Rinsho Ketsueki* 2013; 54: 284-9.
- 3) Low SE, Stafford JS. Malignant histiocytosis: a case report of a rare tumour presenting with spontaneous splenic rupture. *J Clin Pathol* 2006; 59: 770-2.
- 4) Jaquier F, O'Callaghan B, Gehrig D, Burdet L. Hemorrhagic shock due to splenic rupture in non-severe acute pancreatitis. *Praxis (Bern 1994)* 2003; 92: 1821-2
- 5) Bansal VK, Krishna A, Misra MC, Khan RN, Noba AL, Kishore N. Spontaneous splenic rupture in complicated malaria: non-operative management. *Trop Gastroenterol* 2010; 31: 233-5.
- 6) Crate ID, Payne MJ. Is the diagnosis of spontaneous rupture of a normal spleen valid? *J R Army Med Corps* 1991; 137: 50-1.
- 7) Renzulli P, Hostettler A, Schoepfer AM, Gloor B, Candinas D. Systematic review of atraumatic splenic rupture. *Br J Surg* 2009; 98: 1114-21.
- 8) Laester T, McReynolds T. Spontaneous splenic rupture. *Mil Med* 2004; 169: 673-4.
- 9) Jeffrey RB, Laing FC, Federle MP, Goodman PC. Computed tomography of splenic trauma. *Radiology* 1981; 141: 729-32.
- 10) Hamel CT, Blum J, Harder F, Kocher T. Nonoperative treatment of splenic rupture in malaria tropica: a review of literature and case report. *Acta Tropica* 2002; 82: 1-5.
- 11) Zingman BS, Viner BL. Splenic complications in malaria: case report and review. *Clin Infect Dis* 1993; 16: 223-32.
- 12) Clezy JK, Richens JE. Non-operative management of a spontaneously ruptured malarial spleen. *Br J Surg* 1985; 72: 990.