

Accessory spleen discovered during hemostasis splenectomy: What protective role against the risk of infection in the postoperative period ?

Authors:

Jaouad NADDOURI, Wahiba HAMDOUN, Fatima Zohra BEN MOULA, Younes BAKALI, Mouna EL ALAOUI, Mohamed RAISS, Farid SABBAH, Abdelmalek HRORA
Chirurgie 'C', Ibn Sina hospital, Rabat, Morocco

ABSTRACT

*The increased risk of infection starts immediately in the postoperative period, is highest in the first two years after splenectomy, but persists throughout life. The potential gravity of infections in splenectomized patient (historically dominated by *S. pneumoniae*, *N. meningitidis* and *H. influenzae*) becomes maximal with the extreme gravity represented by overwhelming post-splenectomy infection (OPSI), and justifies rigorous management of immunizations (Anti-pneumococcal, Meningococcal, and *H. influenzae* in particular), as well as antibiotic prophylaxis started in the immediate postoperative period, and patient education. Prompt reaction by the splenectomized patient and attending physician when fever or signs suggest the possibility of OPSI is essential to avoid rapid deterioration, and stresses the importance of these preventive and educational measures.*

Keywords: Splenectomy, Accessory spleen, Overwhelming post-splenectomy infection

Introduction :

Although the indications for splenectomy have decreased in current trauma surgery management, splenectomy remains a frequently performed surgical procedure; the surgeon must be familiar with both surgical as well as medical complications. The most frequent complications of splenectomy are infectious. In addition to acute postoperative complications (in 40% of cases), severe infections such as overwhelming postsplenectomy infection (OPSI) may occur in from 3-5% of patients over the long-term [1-2].

We report on this work a case of accessory spleen discovered during hemostasis splenectomy for splenic trauma. The objective is to discuss the various infectious risks to which the patient is exposed as well as the preventive measures to be adopted even in the presence of an accessory spleen.

Case report :

A 19 year old male patient was received in the emergency department of the Ibn Sina Hospital in Rabat (Morocco) for generalized abdominal pain following a road accident. The general examination had found a conscious patient with signs of shock: unstable haemodynamic parameters, coldness of the extremities. The abdominal examination found significant abdominal distension with diffuse dullness. Faced with this state of shock, the patient was taken directly to the operating room for exploratory laparotomy without further investigation.

This laparotomy had objectified a very abundant hemoperitoneum (2 liters of pure blood aspirated) secondary to a proven splenic trauma. After a total splenectomy and control of the bleeding, we proceeded to establish the lesion assessment of the peritoneal cavity. During this exploration, we discovered an accessory spleen sitting at the level of the greater omentum, of good coloration; we decide to save it.

The postoperative course was simple and the patient had received his prophylactic vaccination.



Figure-1 : Image of splenectomy for splenic trauma

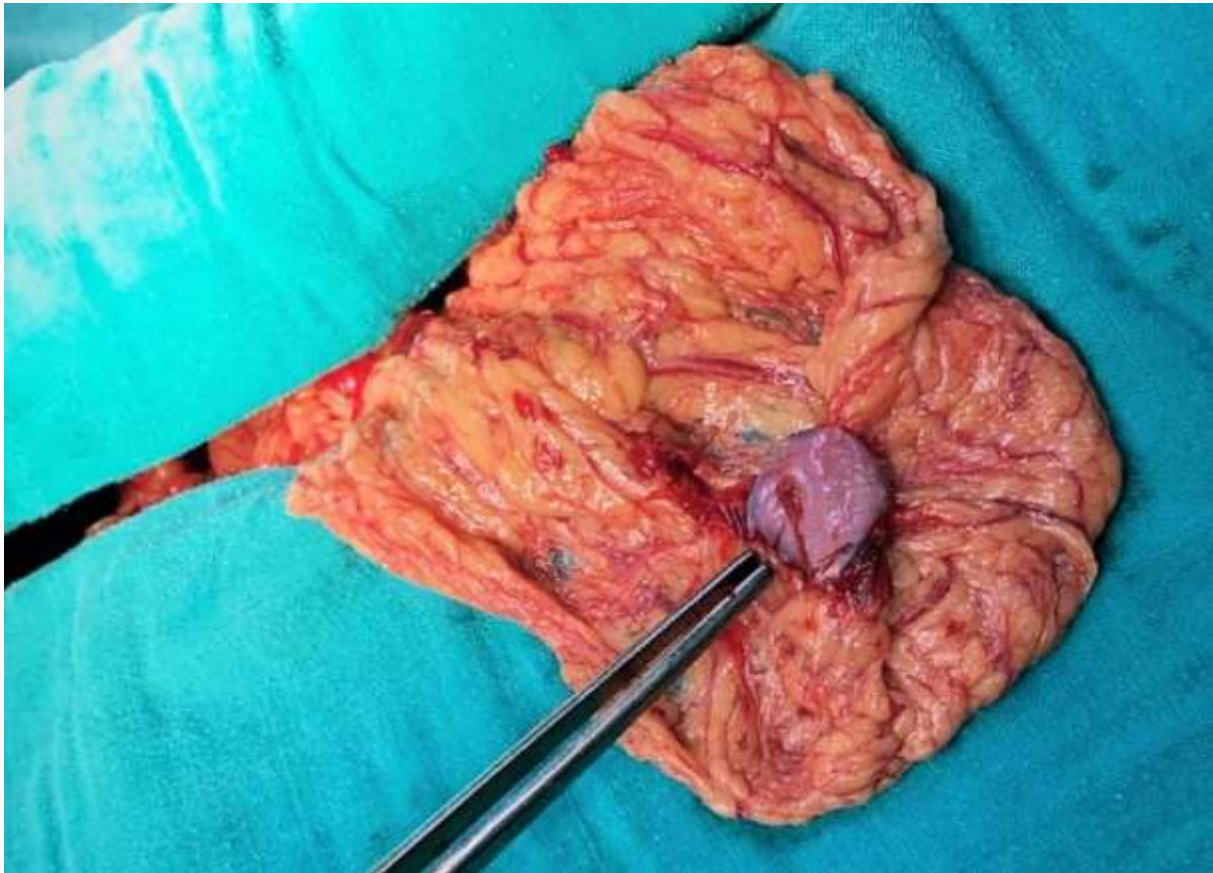


Figure-2 : Accessory spleen discovered after splenectomy hemostasis

Discussion :

Due to decreased response to encapsulated bacteria, the principal bacteria involved in post-splenectomy sepsis are primarily *Streptococcus pneumoniae* (50% to 70%), and *Neisseria meningitidis* and *Haemophilus influenzae* B (15—25% each), although the epidemiology of postsplenectomy infection has not been reassessed since the advent of vaccines against *Pneumococcus*, *Meningococcus* and *Hemophilus*. There is also an increased risk of serious infection due to *Capnocytophaga canimorsus* after animal bites, *Bordetella holmesii*, *Ehrlichia* species and intraerythrocytic parasites such as *Babesia* after tick bites, and *Plasmodium* species in malaria-endemic areas [3-4]. No excess risk of infection by other pathogens such as *Escherichia coli*, or *Staphylococcus aureus* has been established.

The infection risk varies with associated co-morbidities and the time interval following splenectomy. Emergency splenectomy is associated with an excess risk of acute infection during the early postoperative period compared to elective splenectomy or emergency abdominal surgery without splenectomy (incidence 30- 45% for all types of infection) [5-6].

Overwhelming post-splenectomy infection (OPSI) is the most formidable infectious complication in the splenectomized patient. OPSI is a rapidly progressive fulminant infection linked to spontaneous bacteremia, particularly involving *S. pneumoniae* in over 50% of cases [7-8]. The presentation is non-specific and there is often no obvious portal of infection. The initial clinical presentation typically involves fever, gastrointestinal symptoms, and diffuse pain; it can progress rapidly to septic shock with coagulation disorders or disseminated intravascular coagulation and purpura fulminans [9]. The mortality of OPSI is close to 50% [1-10], and is even higher in patients with hematologic disease.

Post traumatic splenosis and accessory spleens do not seem to have a protective role since authentic OPSI have occurred despite the presence of accessory spleens [11]. splenectomized patients with accessory spleens should have prevention of the risk of infection. This prevention is based on three axes: vaccination against the most common causative pathogens, antibiotic prophylaxis, and patient education.

Conclusion :

Because splenectomy may be attended by infectious complications, the splenectomized patient with accessory spleen requires careful monitoring in the early postoperative period as well as in medium and long-

term follow-up. Patient education, antibiotic prophylaxis and regular updating of vaccinations are key elements of management.

References :

- [1]. Bisharat N, Omari H, Lavi I, Raz R. Risk of infection and death among post-splenectomy patients. *J Infect* 2001;43:182—6.
- [2]. Schwartz PE, Sterioff S, Mucha P, Melton LJ, Offord KP. Post-splenectomy sepsis and mortality in adults. *JAMA* 1982;248:2279—83.
- [3]. Rubin LG, Schaffner W. Clinical practice. Care of the asplenic patient. *N Engl J Med* 2014;371:349—56.
- [4]. Shepard CW, Daneshvar MI, Kaiser RM, et al. *Bordetella holmesii* bacteremia: a newly recognized clinical entity among asplenic patients. *Clin Infect Dis* 2004;38:799—804.
- [5]. Ellison EC, Fabri PJ. Complications of splenectomy. Etiology, prevention, and management. *Surg Clin North Am* 1983;63:1313—30.
- [6]. Wiseman J, Brown CV, Weng J, Salim A, Rhee P, Demetriades D. Splenectomy for trauma increases the rate of early postoperative infections. *Am Surg* 2006;72:947—50.
- [7]. Waghorn DJ. Overwhelming infection in asplenic patients: current best practice preventive measures are not being followed. *J Clin Pathol* 2001;54:214—8.
- [8]. Dahyot-Fizelier C, Debaene B, Mimoz O. [Management of infection risk in asplenic patients]. *Ann Fr Anesth Reanim* 2013;32:251—6.
- [9]. Di Sabatino A, Carsetti R, Corazza GR. Post-splenectomy and hyposplenic states. *Lancet* 2011;378:86—97.
- [10]. Davidson RN, Wall RA. Prevention and management of infections in patients without a spleen. *Clin Microbiol Infect* 2001;7:657—60.
- [11]. Gopal V, Bisno AL. Fulminant pneumococcal infections in 'normal' asplenic hosts. *Arch Intern Med* 1977;137:1526-30.

