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Case Report

Spontaneous splenic rupture post-gynecological surgery – Case report

Leszek Frąckowiak [a,b,*], *Konrad Wroński* [a,b], *Luiza Kańczuga-Koda* [c], *Mariusz Koda* [d], *Maciej Biernacki* [a,b]

[a] *Hospital Ministry of Internal Affairs with Warmia and Mazury Oncology Centre in Olsztyn, Poland*
[b] *Faculty of Medical Sciences, University of Warmia and Mazury in Olsztyn, Poland*
[c] *Bialystok Oncology Center, Poland*
[d] *Department of General Pathology, Medical University of Bialystok, Poland*

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ABSTRACT

Introduction: Splenic rupture is a rare postoperative complication in gynecological practice. In the literature, there are only isolated reported cases of ruptured spleen after gynecological procedures. Splenic rupture has been reported following hysterectomy, cesarean section, laparoscopy, and ruptured ectopic pregnancy.

Aim: Presentation of splenic rupture as a complication of gynecological surgery.

Case study: A case of 68-year-old patient operated for giant ovarian tumor with spontaneous splenic rupture following total abdominal hysterectomy with bilateral salpingo-oophorectomy is described. Internal hemorrhage was a main clinical presentation. Diagnosis was made intraoperatively. Splenectomy was performed in cooperation with a surgical oncologist.

Results and discussion: Diagnosis of splenic rupture as a postoperative complication after gynecological surgery is frequently established intraoperatively due to the suddenness of symptoms of shock and the need for immediate surgical intervention.

Conclusions: Possibility of complications such as splenic rupture in the postoperative period needs to be taken into account by gynecologists in the case of postoperative intra-abdominal hemorrhage. Cooperation between gynecologist and general surgeon is advisable for management of splenic rupture.

* *Correspondence to*: Hospital Ministry of Internal Affairs with Warmia and Mazury Oncology Centre in Olsztyn, Wojska Polskiego 37, 10-228 Olsztyn, Poland. Tel.: +48 601 611 435.
E-mail address: lesf@esculap.pl (L. Frąckowiak).

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1. Introduction

Splenic rupture is a disease entity rarely reported in obstetrics and gynecology. Obstetrician-Gynecologist must sometimes face the situation of spontaneous rupture of the spleen in their practice.[1] Splenic rupture most commonly occurs in road traffic accidents. Patients require hospitalization and several days of in-hospital observation due to the possibility of delayed splenic rupture.[2]

Rupture of the spleen may also occur even with minimal injuries, during and after certain abdominal surgical procedures. As a complication of gynecological surgery, hysterectomy,[1,3] cesarean section,[4,5] laparoscopy,[6–8] and ruptured ectopic pregnancy,[9] splenic rupture is extremely rare.

The possibility of such complication must be taken into account in differential diagnosis of sudden postoperative intra-abdominal hemorrhage also in cases where trauma was not present.[10]

Suddenness of the situation and clinical symptoms of increasing shock require emergent surgical intervention. In these cases diagnosis is made intraoperatively during thorough inspection of the abdominal cavity. Preparation of the patient for reintervention with adequate fluid and blood products supply is essential.[10]

In less urgent cases diagnostic process may be broadened by including CT scan of the abdomen and pelvis, which may allow localization of the site of intra-abdominal bleeding. In the event of such complication during gynecological procedure, assistance of general surgeon may become necessary.

2. Aim

This paper presents a case of splenic rupture as a complication of gynecological surgery.

3. Case study

A 68-year-old patient was admitted to the Department of Gynecology for surgical removal of giant ovarian tumor. On admission the patient's general condition was good. Gynecological examination revealed a mass filling the entire abdominal cavity, extending from the pouch of Douglas to the umbilicus. The patient had a history of three vaginal deliveries. She gave a history of gastric ulcer and hiatal hernia.

On admission the patient reported lower abdominal pain, difficulty urinating and constipation. Physical examination showed distended abdomen, with no other deviations.

On the third day of hospitalization surgery was performed under general endotracheal anesthesia – total abdominal hysterectomy with bilateral salpingo-oophorectomy, omentectomy, right ilio-obturator lymph node dissection, peritoneal biopsy and swabbing left and right diaphragmatic dome parts.

Directly after surgery the patient's general condition was good. Vital signs were normal. The patient was monitored in the recovery room.

On the first postoperative day, at night, after 16 hours from surgery symptoms of shock suddenly occurred (BP 74/40 mmHg, rapid, weak pulse of 110 bpm), patient began to experience shortness of breath. Physical examination revealed a tense abdomen with negative peritoneal signs. Approximately 350 mL liquid blood in the abdominal drain was collected.

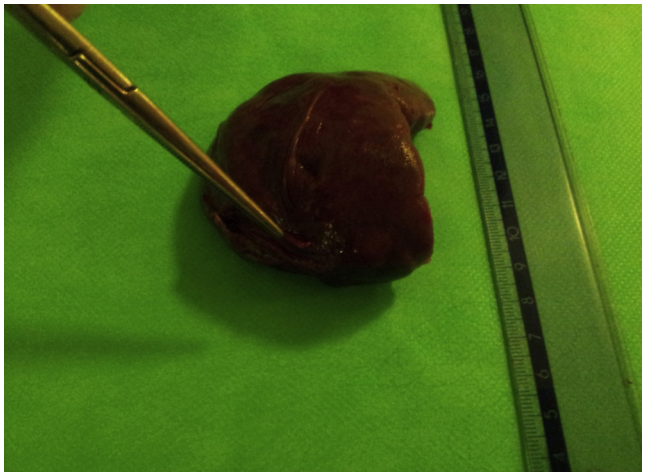

Fig. 1 – Excised spleen with marked bleeding site.

Diagnosis of acute intra-abdominal hemorrhage was made and after obtaining consent for revision of the abdominal cavity, the patient was qualified for surgery. She was immediately transferred to the operating theater. A team of a gynecologist and a surgical oncologist performed a revision of the abdominal cavity. In the abdominal cavity approximately 1.5 L of blood with clots was found. There was no bleeding from the operated site within pelvis minor. However, bleeding in the left upper abdomen, around ruptured spleen was noticed. Normal size ruptured spleen was resected typically (Fig. 1).

Due to the major blood loss 6 units of packed red blood cells and 2 units of fresh frozen plasma were transfused. The patient's postoperative general condition was good. Vital signs were normal. BP was 170/80 mmHg and pulse at 60 bpm. Postoperative course was uneventful, wound healing was proper with no fever present. On postoperative day 4, abdominal drain was removed. On postsplenectomy day 7, several stitches were removed and on day 11, the patient was discharged home in good general condition.

4. Results and discussion

Splenic rupture is a very rare complication of gynecological surgeries. In the literature, isolated cases of splenic rupture are described post-hysterectomy,[1,11] cesarean section,[4,5] and laparoscopy.[3,6,7] Rupture of the spleen has also been reported after minimal abdominal trauma and colonoscopy. Splenic rupture is most common in abdominal trauma caused by road traffic injury, which is in the field of interest of emergency medicine and surgery.[9] The majority of cases presents with intra-abdominal bleeding and shock, that requires immediate surgical intervention. Delayed splenic rupture occurs several or even several dozen days after the injury. This applies only to 2%–5% of splenic ruptures.[10] Patients are usually observed in

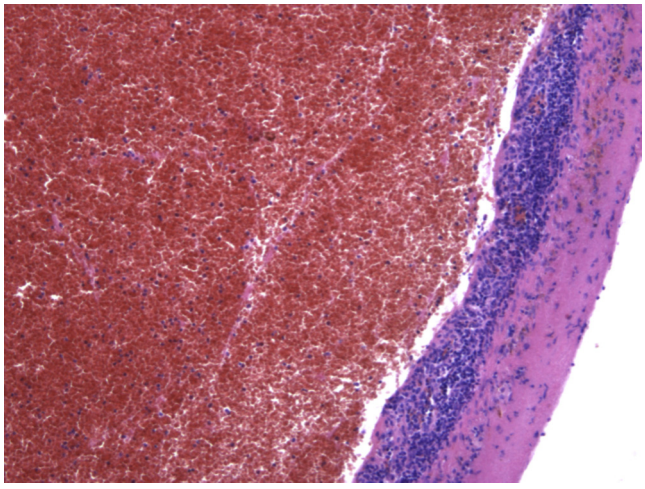

Fig. 2 – Subcapsular hematoma (H&E staining, 40×).

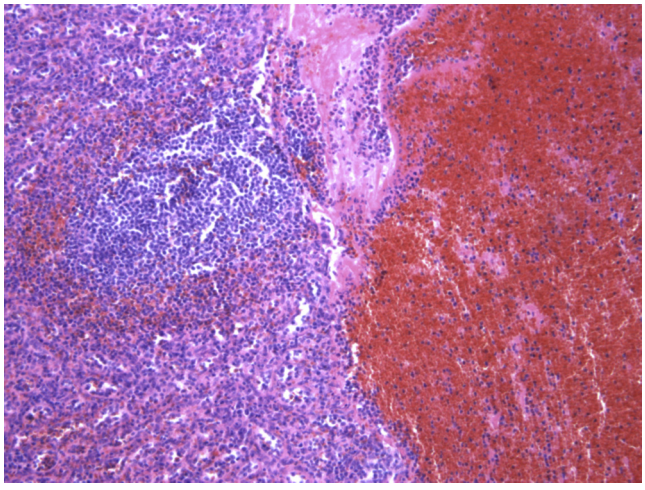

Fig. 3 – Hemorrhagic focus (H&E staining, 100×).

surgical departments before the correct diagnosis is made. A significant role in differential diagnosis is played by abdominal CT scan, which frequently allows locating site of the bleeding. This complication in a large proportion of cases requires surgical splenectomy.

Spleen plays an important role in the human immune system, but it is not essential for life. Postsplenectomy patients are prone to develop more severe infections, frequently associated with unfavorable prognosis.

Splenic rupture often occurs in older patients, above 65 years of age, as it was in the presented case.[10] Internal trauma caused by cough or vomiting in pre-existing splenic pathology may be the initiating factor.[9]

Splenic rupture described in the literature is most frequently associated with pathological changes including infections, malignancies, and amyloidosis.[9]

Other anatomical abnormalities of the spleen associated with its rupture include cysts, infarction and hamartromatas. Splenic rupture may be associated with anticoagulant and thrombolytic treatment.[9]

Other causes include endoscopy, surgery of the lungs, heart and abdomen, empyema, splenic vein thrombosis, hemangiomata, splenic artery aneurysm, pheochromocytoma, pancreatitis, and diaphragmatic hernia.[9] In the presented case the spleen was normal size and consistency, with no histopathological changes.

Histopathological examination revealed subcapsular hematoma of the spleen (Figs. 2 and 3).

Splenectomies are performed by surgeons, who are trained in this field. Obstetrician-gynecology residency program does not include splenectomy procedure, in case of such complication cooperation between gynecologist and surgeon is thus required.

5. Conclusions

Possibility of complications such as splenic rupture in the postoperative period needs to be taken into account by gynecologists. Diagnosis of splenic rupture is frequently made intraoperatively. Suddenness of symptoms of shock in the postoperative course draws attention. Internal hemorrhage is a major determinant of the clinical presentation. Cooperation between gynecologist and surgeon in management of splenic rupture after gynecological intervention is indicated.

Conflict of interest

None declared.

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