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Spontaneous Splenic Rupture Revealed by Hemorrhagic Shock in the Peripartum Period: A Case Report

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Abstract | **Case Report**

Background: Spontaneous splenic rupture during pregnancy is an extremely rare and life-threatening condition, often diagnosed late due to nonspecific symptoms and absence of trauma. ***Case Presentation:*** We report the case of a 36-year-old woman, gravida 5 para 4, admitted at 36 weeks of gestation for acute fetal distress. An emergency cesarean section revealed massive hemoperitoneum. Surgical exploration identified a spontaneous grade 4 splenic rupture. A hemostatic splenectomy was performed with favorable maternal and neonatal outcomes. ***Conclusion:*** Although rare, spontaneous splenic rupture should be considered in pregnant women presenting with unexplained hemorrhagic shock. Prompt diagnosis and surgical intervention are critical to improve prognosis.

Keywords: Spontaneous splenic rupture, hemorrhagic shock, peripartum, cesarean section, emergency surgery.

INTRODUCTION

Spontaneous splenic rupture is a rare but potentially life-threatening condition, often difficult to diagnose in the absence of obvious trauma. It may occur as a primary event or in association with various underlying pathologies. We report the case of a 36-year-old woman, gravida 5 para 4, referred at 36 weeks of gestation for acute fetal distress. The diagnosis of splenic rupture was made intraoperatively, with a favorable outcome despite the severity of the clinical presentation.

CASE REPORT

This is a 36-year-old female patient with a history of cholecystectomy performed three years ago. Her gynecological and obstetric history includes five pregnancies: one early miscarriage, two premature infants who died at 7 and 10 days of life respectively in the neonatal intensive care unit, and one living child born via vaginal delivery. The current pregnancy, her fifth, was well monitored and estimated at 36 weeks and 4 days of gestation. It was complicated by gestational diabetes, well controlled through diet alone.

The current episode began on the morning of her admission with a sensation of dizziness at home, which the patient initially interpreted as a hypoglycemic episode. The persistence of symptoms despite oral glucose intake led her to seek care at the nearest hospital. Initial evaluation revealed hypotension at 83/47 mmHg and, obstetrically, an abnormal fetal heart rate tracing.

Laboratory workup showed normal results, with a hemoglobin level of 10 g/dL and a platelet count of 233,000/mm³. The patient received initial fluid resuscitation with 1 liter of normal saline (0.9% NaCl) and was then transferred to the maternity emergency department of our university hospital after a 10-hour delay in initial management.

On admission, the patient was alert, oriented to time and place, and presented with mucocutaneous pallor, capillary refill time <3 seconds, and no signs of external bleeding. She was normothermic, her blood pressure was 134/86 mmHg, heart rate was 97 bpm, urine output was preserved, and capillary glucose was 1 g/L.

Abdominal examination revealed a soft, non-tender abdomen without guarding.

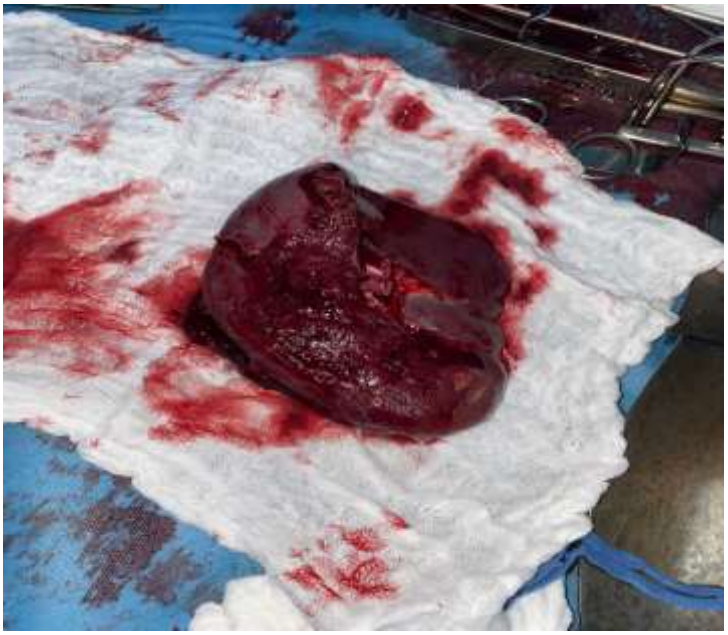
Obstetric assessment revealed a long, closed, and posterior cervix, intact membranes, and no abdominal rigidity. Obstetric ultrasound showed a single viable fetus in cephalic presentation with a fundal placenta. Fetal monitoring revealed an irregular heart rate with decelerations consistent with acute fetal distress (AFD), prompting an emergency cesarean section for fetal rescue.

In the operating room, the patient was initially hemodynamically stable, and the cesarean section was performed under spinal anesthesia. Upon incision, a large-volume hemoperitoneum was discovered, with ongoing active bleeding leading to sudden hemodynamic instability — blood pressure dropped to 72/35 mmHg, and heart rate increased to 122 bpm. Management included initiation of norepinephrine at 0.3 µg/kg/min, invasive blood pressure monitoring, administration of a 1g bolus of tranexamic acid (Exacyl), and conversion to general anesthesia following hysterotomy and delivery of a female neonate weighing 3160 grams. The Apgar scores were [4, 5], and [7] at [1, 5], and 10 minutes, respectively, and the newborn was transferred to the neonatal intensive care unit.

Surgical exploration found no evidence of uterine rupture, adnexal injury, retroplacental hematoma, or any other gynecological source of hemorrhage. As a result, general surgeons were called in. Laparotomy revealed a spontaneous rupture of a grade 4 splenic hematoma with active bleeding. The hepatic region was intact.

An emergency splenectomy was performed following clamping of the splenic pedicle. The patient received transfusion of 4 units of packed red blood cells (PRBCs) and 3 units of fresh frozen plasma (FFP). Laboratory results showed hemoglobin at 6.5 g/dL and plasma fibrinogen at 1.5 g/L. Estimated blood loss was 3600 mL.

The postoperative course was marked by progressive hemodynamic stabilization and complete weaning from norepinephrine. The patient was admitted to the intensive care unit, and postoperative recovery was favorable with good clinical and biological outcomes.



DISCUSSION

During pregnancy, the spleen is more vulnerable to injury due to various factors, including organ displacement caused by uterine growth, physical strain during labor, and pregnancy-related changes such as splenic hypertrophy and increased blood volume [1 - 7].

The prevalence of non-traumatic splenic ruptures is generally low compared to traumatic ones. Traumatic ruptures—commonly caused by accidents or direct blows—are far more frequent. In contrast, non-traumatic ruptures, although rare, represent a clinically significant entity with a high mortality rate (around 20%) due to delays in diagnosis and treatment [2].

They may occur in either a normal or diseased spleen and are often associated with conditions such as infections (e.g., infectious mononucleosis) or hematologic disorders [3].

More specific to pregnancy, splenic rupture may have a toxemic origin. This condition is often linked to syndromes such as preeclampsia and HELLP syndrome, which can cause significant vascular alterations. [8-9]

Regardless of the underlying cause, splenic rupture typically results in hemoperitoneum, which may present as a severe and immediate emergency or appear later after a latent phase, known as a “two-stage rupture,” as observed in our case [4–5].

In the majority of cases, including ours, the diagnosis of splenic rupture is made only at the time of laparotomy. This is partly because the diagnosis is considered in only 25% of abdominal trauma cases and

is rarely suspected in the absence of trauma. Additionally, the clinical course can be misleading: the patient may initially present in shock, followed by a period of stabilization, before shock recurs a few days later, complicating both diagnosis and management [6].

As reported in all cases in the literature, the treatment of choice remains emergency splenectomy, especially given the critical condition of the patient at the time of diagnosis.

CONCLUSION

Although rare, spontaneous splenic rupture during pregnancy constitutes a true emergency, threatening both maternal and fetal life, and requires immediate and appropriate management.

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