

## Rupture of Splenic Aneurysm: A Rare Case Report

Case Report

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### Abstract

Although, trauma is the most cause of spleen rupture, spontaneous rupture of the splenic aneurism is a rare problem which causes a massive bleeding inside the abdomen, and ultimately reduces blood pressure, shock, and death. Here we reported a rare rupture of splenic aneurysm in pregnant woman with abdominal pain and reduced blood pressure. Splenectomy was performed after the stabilization. This problem is a life-threatening condition during the pregnancy and surgical intervention is the best treatment option.

**Keywords:** Splenic Rupture; Atraumatic; Aneurysm; Laparotomy; Splenectomy.

### Introduction

Spleen is a fragile and hemorrhagic organ which is prone to a huge bleeding due to a small trauma [1]. Splenic artery aneurysm (SAA) is the third and most common type of abdominal and visceral artery aneurysms [2, 3]. Spleen rupture is normally in line with a trauma and spontaneous rupture is known for the rupture in patients without any history of trauma, systemic disease, and clear pathological results [4]. Spontaneous spleen aneurysm rupture during the pregnancy leads to a high ratio of mortality because of the late diagnosis and treatment [5]. It has been reported that the mortality rate of spontaneous spleen rupture is 35% in pregnant and 70% in fetus [6]. Spontaneous spleen rupture was reported in 1803 for the first time and 9 cases were observed until 1880 who were the consequences of autopsy. However, the first case of rupture was reported in 1898 in which the patient was undergone the splenectomy. In both of pregnant and normal patients the clinical manifestations are severe abdominal bleeding, left flank pain, blood pressure reduction, and anemia [1]. In the present study, we reported a pregnant case with spontaneous splenic aneurysm rupture to represent the importance of such problem during the pregnancy.

### Case Report

The case was a pregnant 30 years old woman who was in her third pregnancy and with three children including one twin

and one single (Gravid 3, Live 3). She claimed about a sudden generalized abdominal pain with more severity in the left flank and hypogastric region. Moreover, nausea and periodic vomiting without any history of trauma, systemic disease, surgery, and drugs were observed in the case. She was alerted, agitated, and pale with abdominal distention at the time of hospitalization (Blood pressure = 90/60, Respiratory Rate = 16/min, Heart Rate = 105/min, and Temperature = 36.6°C) (clinical examinations are illustrated in Table.1). Vaginal examination also had not shown any bleeding. Sonographic examination (in 19 weeks + 3 days of pregnancy) had shown a fetus with cephalic presentation and normal Amniotic Fluid Index (AFI), fetal heart rate (FHR), and activity inside the uterus. Regarding the presence of free liquid in left pelvic cavity and abdominal tenderness the patient was nominated for the laparotomy. In midline laparotomy an apparent bleeding was in splenic hilum then liquid suction was done and splenic hilum artery ligation and splenectomy were performed due to the observing the bleeding in upper left abdomen. Then the patient was hospitalized in intensive care unit (ICU) for two days and dismissed with a normal status after three days in public ward and receiving the Influenza and Pneumococcal vaccines (the clinical tests are presented in Table 1). Pathological assessment also showed hemorrhagic parenchyma.

### Discussion

Spleen is a congested organ and receives 5% of blood. Therefore

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**Table 1. Clinical Examinations before and After the Splenectomy.**

	Hospitalization	Discharge
Hemoglobin (g/dL)	9.3	13.2
Hematocrit (%)	27.4	37.9
Platelet (count)	189000	283000
Red Blood Cells (cells/mm <sup>3</sup> )	3.06*10 <sup>6</sup>	4.39*10 <sup>6</sup>
White Blood Cells (cells/mm <sup>3</sup> )	15.3*10 <sup>3</sup>	16.2*10 <sup>3</sup>
Neutrophil (count)	88%	89%

every rupture will results in severe abdominal bleeding, Hypovolemia, Tachycardia, upper left abdominal pain, Kehr's sign, and diaphragm stimulation [7]. Several reasons are involved in spontaneous splenic rupture in pregnant such as uterus growth in the last months of pregnancy, contraction of abdominal muscles, enlarged spleen, and small aneurysms ruptured spleen [8-10]. Regarding the present case of a pregnant female with spontaneous spleen rupture without any specific reason, it will be prescribed to consider the spontaneous spleen rupture in pregnant who claims about the severe abdominal pain and bleeding. Although, the spontaneous splenic rupture is a rare problem among the pregnant, it is commonly observed between 6-9 months of pregnancy. Among the reported splenic ruptures between 1950-2011, 332 out of 631 cases were consequences of colonoscopy, 210 cases were related to an inflammation, and 39 cases were related to the anomalies, non hemorrhagic neoplasm, internal trauma, and pregnancy. Only 15 out of 631 cases have shown a spontaneous splenic rupture without any reason [8].

## Conclusion

Splenic rupture will results in a high ratio of mortality among the fetuses and pregnant. The best treatment option is splenectomy along with Pneumococcal and Influenza vaccines. In present study we reported a pregnant woman who claimed about low blood pressure, Tachycardia, and severe abdominal pain. Clinical and sonographic examinations also showed abdominal distention, generalized tenderness, and free liquid in left pelvic cavity. Therefore the laparotomy and splenectomy were performed to save the women and fetus.

## Informed Consent Form

The consent form which was approved by the ethic committee of North Khorasan University of Medical Sciences was obtained from the patient.

## Ethical Standards

This study has been approved by the appropriate ethics committee and has therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

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