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CASE REPORT

Spontaneous Uterine Artery Rupture at Delivery

Duhan Nirmala · Sangwan Neetu · Rajotia Nidhi · Kadian Yogender S. · Singla Shyam L.

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Introduction

Spontaneous rupture of uterine vessels, though rare, is a life threatening condition occurring during pregnancy or the peripartum period. The maternal and perinatal mortality may be as high as 40 and 30 % respectively [1]. Though more than 100 cases of rupture of uterine vessels have been reported during pregnancy and puerperium, only five cases have been reported during labor [2]. The case under reference developed shock soon after vaginal delivery and was explored due to suspected intraperitoneal hemorrhage. This case is being reported to emphasize the need for careful post-delivery monitoring not only for revealed postpartum hemorrhage, but also for this rarer life-threatening cause of obstetric shock, as active and early operative intervention can save a precious young life.

Duhan N. (✉), Professor · Sangwan N., Assistant Professor · Rajotia N., Resident
Department of Obstetrics and Gynecology, Pt B D Sharma Postgraduate Institute of Medical Sciences, 6/9J, Medical Campus, Rohtak, Haryana 124001, India
e-mail: nkadian@gmail.com; nkadian@rediffmail.com

Kadian Y. S., Associate Professor · Singla S. L., Senior Professor
Department of General Surgery, Pt B D Sharma Postgraduate Institute of Medical Sciences, Rohtak, Haryana, India

Case Report

A 24 years old primigravida presented at 40 weeks gestation after a normal antenatal course with labor pains for 6 h. She denied abdominal trauma, vaginal bleeding or recent intercourse. Physical examination revealed pulse rate of 90 beats per min and blood pressure of 122/84 mmHg. A term size uterus with good contractions and cephalic presentation was palpable abdominally. Fetal heart rate was 132 beats per min. The cervix was 2 cm dilated, soft and posterior with intact membranes and a presenting vertex at zero station. Her hemoglobin was 10 gm/dl. Labor progressed normally and a healthy baby boy weighing 3.1 kg was delivered vaginally. Uterus was felt intact on bimanual examination.

Patient complained of pain in abdomen 3 h after delivery. Her pulse rate increased to 108 beats per min and the blood pressure dropped to 80/60 mmHg. Tenderness could be elicited in left lumbar region. Ultrasonography revealed free fluid with internal echoes in abdominal cavity and a hypo echoic lesion of 13 × 4.5 cm on left side of abdomen extending from lower pole of spleen to the iliac fossa, along with a bulky postpartum uterus. Suspecting splenic rupture the patient was taken up for laparotomy after resuscitation and consultation with surgical colleagues.

About 1,500 ml of blood was present in the peritoneal cavity, along with a large oblong clot on left side of abdomen. A bleeding left uterine artery was evident through an opening in the posterior leaf of broad ligament, adjacent to the intact uterus (Fig. 1). There was no evidence of aneurysmal dilatation of the bleeding vessel

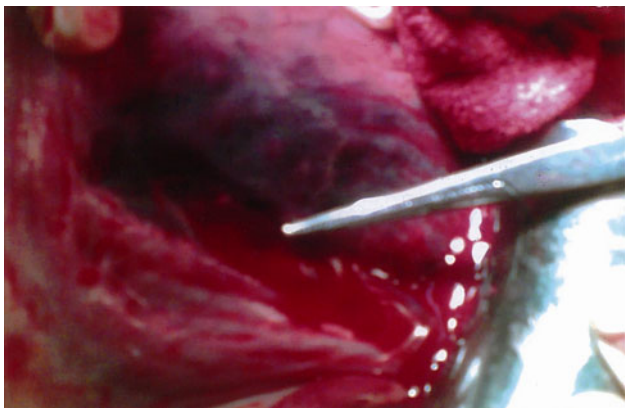

Fig. 1 Intraoperative photograph showing rent in posterior leaf of left broad ligament with the bleeding uterine artery

which was ligated to effect hemostasis. The woman fared well postoperatively.

Discussion

Spontaneous rupture of uterine vessels has been reported during pregnancy and less commonly in postpartum period. Though the exact site of rupture may not be found in all cases, the broad ligament is the site in 75 % of them. The clinical manifestation is mostly sudden abdominal pain with hemodynamic collapse along with a decrease in hemoglobin and hematocrit levels [3]. Shock unexplained by external bleeding may be the only finding in laboring patients or those recently delivered, in whom anesthesia may mask the abdominal findings. The overall maternal mortality is around 49 %.

The diagnosis of ruptured uterine vessels has rarely been made preoperatively, especially in cases detected after delivery [4]. Atonic and/or traumatic postpartum hemorrhage, rupture uterus and amniotic fluid embolism could be the differential diagnoses. Hypovolemic collapse coupled with free fluid in the abdomen should raise a possibility of uterine or ovarian vessel rupture in antenatal or postpartum period.

Although the exact cause of spontaneous utero-ovarian vessel rupture in relation to pregnancy remains unknown, pressure dynamics and various anatomic and hormonal factors have been implicated [4]. Estrogen induced intimal changes, the tortuous path of uterine and ovarian veins, their lack of valves and distention with intraluminal pressure may predispose them to spontaneous bleeds. Similarly, no definite trend regarding trauma, gravidity, parity, age or length of gestation has been documented. The case under report was a primiparous woman with an uncomplicated pregnancy.

In most of the reported labor/postpartum cases including the present one, a consistent feature was the involvement of left sided uterine vessels. No explanation for this could be found in literature. Dextro-rotation of uterus, more so during late pregnancy and the more common left occipito-transverse or left occipitoanterior position of the fetus, apart from increased tortuosity during pregnancy, could be the possible predispositions for the more frequent left sided involvement.

Clinicians should be aware of this rare cause of obstetric shock which can present during labor or soon thereafter, so that active resuscitation and timely surgical intervention can reduce maternal and perinatal mortality.

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