

Emergency hysterectomy for a ruptured intramural ectopic pregnancy: A case report

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ABSTRACT

Intramural ectopic pregnancy is usually complicated by uterine rupture requiring emergency laparotomy and appropriate intervention. The diagnosis poses a serious challenge and the type of surgical intervention required depends on the hemodynamic status and the extent of damage to the uterus. A 38-year-old gravida 3, Para 2, abortion 0, who had an emergency hysterectomy due to a ruptured intramural pregnancy with massive hemoperitoneum. Pre-operative ultrasound was suggestive of the diagnosis which was confirmed by operative findings and histopathology report on the specimens. Intravenous infusion of normal saline, blood transfusion and emergency hysterectomy is essential for prevention of maternal mortality in intramural pregnancy complicated by uterine rupture.

Key words: Emergency hysterectomy; intramural ectopic pregnancy; ruptured uterus.

Introduction

Intramural pregnancy is an ectopic pregnancy in which the conceptus is located within the myometrium without connection with the endometrial cavity and the fallopian tubes.^[1] A ruptured intramural ectopic pregnancy is potentially life-threatening, due to severe hemorrhage and hypovolaemic shock which may necessitate exploratory laparotomy and hysterectomy, as illustrated by the case presented. Maternal mortality is about 2.5%.^[2]

Case Report

A 38-year-old Gravida 3, Para 2, Abortion 0, woman was brought to the gynecological emergency unit of our hospital with a history of dizziness and severe abdominal pain of six hours duration. She was 16 weeks amenorrhoeic, there was no vaginal bleeding. On examination, she was pale, drowsy, with cold and clammy extremities. There was tachycardia, the pulse rate was 120/min, respiratory rate was 35/min and

the blood pressure was not recordable. The abdomen was distended with generalized tenderness, guarding, rebound tenderness, and fluid thrill. The uterus could not be accessed due to tenderness. Vaginal examination revealed a normal vulva and vagina. The cervix was soft and the os was closed. There was cervical motion tenderness the adnexae were not assessable and the pouch of Douglas was full. The examining fingers were not blood stained.

Examination and resuscitation were done simultaneously. She was resuscitated with normal saline which was rapidly infused through two 16 G cannulas. An indwelling urethral catheter was passed to monitor her urinary output. Her packed cell volume was 16%, urinalysis, electrolytes urea

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and creatinine were within normal range. Ultrasound showed significant peritoneal cavity fluid collection and a gestational sac containing a life fetus at 16 weeks gestational age. The endometrial echo plate was seen below the gestational sac. Four units of blood were grouped and cross matched and she was taken for emergency exploratory laparotomy.

The abdomen was opened through a midline incision. There was hemoperitoneum of about 3 liters, an extensive fundal rupture of the uterus with an intact gestational sac within it [Figure 1]. The placenta was implanted at the site of the rupture within the myometrium [Figure 2]. The endometrium below the site of rupture was intact [Figure 3]. The fallopian tubes and ovaries were normal. In view of the extent of the uterine rupture, the significant blood loss and the unstable hemodynamic status of the patient, a subtotal hysterectomy was performed with the consent of the spouse. She was transfused with 4 units of whole blood intraoperatively and 2 units, postoperatively.

The patient recovered and remained stable postoperatively. Post Transfusion Packed Cell Volume was 31%. She was discharged home on the 8th post-operative day after removal of skin sutures.

Discussion

The clinical presentation of a ruptured intramural ectopic pregnancy depends on the amount of blood loss. Vaginal bleeding and lower abdominal pain may be the initial symptoms. Massive hemoperitoneum and hemodynamic shock usually occur in the second trimester of pregnancy, as illustrated by the case in review.^[1-3] Although history and physical examination were suggestive of ruptured ectopic pregnancy, the diagnosis of intramural pregnancy was only confirmed by intraoperative findings and histopathologic examination of hysterectomy specimens which showed chorionic invasion of the myometrium. This was how the diagnosis was established in most of the cases reported in the literature.^[4-8] The role of ultrasound in the diagnosis of a ruptured intramural pregnancy is limited. The finding of a gestational sac with a life fetus is the only specific sign.^[7,9] The ultrasound finding in our case fulfilled only two out of the five criteria proposed by Memtsa *et al.*^[10] for ultrasonographic diagnosis of intramural pregnancy. The others that not seen are evidence of trophoblast breaching the endometrial-myometrial junction; lack of decidual reaction in the vicinity of trophoblast; and evidence of increased peritrophoblastic blood flow on color Doppler examination. In some cases, the diagnosis may require a combination of ultrasound, diagnostic laparoscopy and hysteroscopy concurrently.^[1,5,8,9]



Figure 1: Ruptured uterine fundus with an intact gestational sac within it



Figure 2: Placenta within the myometrium



Figure 3: Hysterectomy specimen showing intact endometrium below the ruptured site

The treatment of intramural pregnancy depends on whether it is ruptured or not and the clinical status of the patient. When hemoperitoneum and hypovolemic shock develops

from uterine rupture, hysterectomy is usually necessary. Ginsburg *et al.*^[6] performed a total abdominal hysterectomy for a ruptured case in which the extent of the uterine defect was adjudged irreparable. However, Fadhlouli *et al.*^[11] reported a successful treatment of a 38-year-old grand multigravida who developed hypovolemic shock from a ruptured intramural pregnancy. The gestational sac was enucleated and the residual myometrial cavity was padded. If the diagnosis is made early before rupture, expectant or conservative management may be considered to preserve the patient's fertility. In a case managed expectantly by Bernstein *et al.*,^[9] the gestation resolved spontaneously. Conservative treatments reported in the literature include; surgical enucleation, injection of potassium chloride or methotrexate into the gestational sac, systemic methotrexate injection, and uterine evacuation.^[1,4,5,8,10,12]

Conclusion

Intramural ectopic pregnancy, if not diagnosed early, is commonly complicated by uterine rupture, massive hemoperitoneum, hypovolemic shock, and fetal wastage. Hysterectomy is often unavoidable. Early diagnosis before rupture is essential for prevention of maternal mortality and for preservation of fertility.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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