Reminder of important clinical lesson

Rupture of bicornuate uterus

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Correspondence to Dr Sheela Jayaprakash, drvishwanathortho@yahoo.co.in**Summary**

A primigravida aged 20 years was referred to Vydehi Institute of Medical Sciences with diagnosis of 30 weeks of period of gestation with eclampsia and failure to respond to induction with misoprostol and she was on Pritchard regimen for the treatment of eclampsia and there was no response to induction of labour and emergency ultrasound was taken and it showed an extrauterine gestation of 30 weeks gestation with fetal demise and free fluid in peritoneum. A tentative diagnosis of secondary abdominal pregnancy with eclampsia was made and she was taken for emergency laprotomy. Intra operative findings showed haemoperitoneum, fetus with placenta and membranes in the peritoneal cavity, there was bicornuate uterus and right horn was ruptured from the fundus to about 8 cm down in the posterior aspect and ruptured part was sutured in two layers. After securing perfect haemostasis, abdomen was closed. This paper illustrates a case report of uterine anomaly with 30 weeks period of gestation and eclampsia and rupture following induction with prostaglandins.

BACKGROUND

Pregnancy with uterine anomalies is rare in clinical practice and only few cases are reported in literature. Most of the obstetricians do not keep it in mind during induction of labour. In developing countries like India majority of the pregnant women are not booked for early antenatal care due to financial constraints. Most of the uterine anomalies go unnoticed because they are often symptomless. Majority are first recognised during pregnancy and judicious use of prostaglandins should be advocated in unbooked cases.

This paper illustrates a rare case of rupture of bicornuate uterus following induction with prostaglandins and gives us a message that antenatal diagnosis of uterine anomalies

is very important to prevent rupture in later pregnancy and uterine anomalies should be kept in mind when there is failure of induction of labour.

CASE PRESENTATION

Primigravida aged 20 years presented to a private hospital with two episodes of convulsions and she was treated there with magnesium sulphate with Pritchard regimen¹ and labour was induced with misoprostol. Four doses of misoprostol 50 microgram were inserted pervaginally 4 hourly, but there was no progress of labour and emergency ultrasound was taken and it showed an extra uterine gestation of 30 weeks gestation with fetal demise and free fluid

Figure 1 Ruptured uterus with haemoperitoneum.

Figure 2 The rent in the right horn of bicornuate uterus.

in peritoneum. The patient was referred to Vydehi Institute of Medical Sciences for further management. Her married life was 2 years and she has not taken any antenatal visits. Her personal and family history was not significant.

At presentation, the patient was pale, drowsy, irritable, with grade 2 pedal oedema, blood pressure was 110/70 mm hg and thready pulse was 104 beats per min. Her respiratory and cardiovascular examinations were within normal limits. Central nervous system examination patient was drowsy, irritable and deep tendon reflexes were present. The abdomen was very tender and irregularly shaped with easily palpable fetal parts and the fetal heart sounds could not be heard. Vaginal assessment revealed scanty vaginal bleeding and cervical os was 2 cm dilated and soft in consistency. The station of the presenting part could not be made out and there was tenderness in both the fornices.

INVESTIGATIONS

Her haemoglobin was 8.4 g%, blood group was O positive and urine routine proteinuria was present. Her liver function and renal function tests were normal and platelet count was two lakhs. Emergency ultrasound showed an extra uterine gestation of 30 weeks with fetal demise and free fluid in peritoneal cavity.

DIFFERENTIAL DIAGNOSIS

Primigravida at 30 weeks period of gestation with abdominal pregnancy with fetal demise with eclampsia was presented, this case may be rarely confused for acute abdominal conditions, but presence of gravid uterus helps in diagnosis.

TREATMENT

A tentative diagnosis of primigravida at 30 weeks period of gestation with abdominal pregnancy with fetal demise with eclampsia was made and patient was taken for

emergency laprotomy and magnesium sulphate was continued according to Pritchard's regimen for the treatment of eclampsia.

Intraoperatively there was haemoperitoneum of around 500 cc, dead fetus lying with intact membranes, baby extracted by breech and the placenta came along with the cord during breech extraction. There was clot of around 50 g in the peritoneal cavity and after removing the blood clot, a bicornuate uterus was seen with left horn of normal size and intact and the right horn showed rupture in the posterior aspect extending from fundus to about 8 cm below (figures 1 and 2). The ruptured horn is sutured in two layers, perfect haemostasis was achieved. There was a thick fibrous band extending between the two horns (figure 3). Peritoneal wash was given. Abdomen was closed in layers.

Post operatively two units of packed cells were transfused in the intra and immediate post operative period. Post operative recovery was uneventful. Magnesium sulphate was discontinued after 24 h and the patient was discharged on the seventh post operative day. Contraceptive advice was given and importance to continue for minimum of 2 years was explained to the patient.

OUTCOME AND FOLLOW-UP

Patient was followed up for 6 months regularly and post-operative period was uneventful. She resumed her menstrual cycles after 6 months and her menstrual cycles were regular and scan was done after 1 year after surgery which showed bicornuate uterus.

DISCUSSION

Incidence of uterine anomalies is 0.1%–3% in general population, 3.5% in infertile women and about 13% in the women with recurrent pregnancy loss. Among that bicornuate uterus constitutes 1.2%.² Bicornuate uterus belongs to

Figure 3 Thick fibrous band between the two horns.

to the class IV according to The American Fertility Society Classification of Mullerian anomalies (1988).³

The uterus is formed during embryogenesis by the fusion of the two paramesonephric ducts (also called Mullerian ducts). This process usually fuses the two Mullerian ducts into a single uterine body. Lack of fusion of these Mullerian ducts can lead to various types of malformations of the female genital tract.⁴

Uterus bicornis unicollis (bicornuate uterus), which is a common type seen represents an uterine malformation where the uterus is present as a paired organ resulting from the failure of the embryogenetic fusion of part of the Mullerian ducts. As a result there is a double uterus with a single cervix and vagina. Each uterus has a single horn linked to the ipsilateral fallopian tube that faces its ovary. The bicornuate uterus often have an unusually thick strong round ligaments and a thick vesicorectal fold running between them. Implication of uterine malformation relates inversely to the degree of fusion defect and may be associated with renal tract anomalies.⁵

Incidence of pregnancy in rudimentary horn is 1/40 000 pregnancies. Rupture in such cases occurs because of inability of malformed uterus to expand as a normal uterus.⁶ The walls of the anomalous uteri tend to become abnormally thin as pregnancies advances. Thickness can be inconsistent over different aspects of the myometrium, and the placenta does not adhere properly.⁷ The rupture in rudimentary horn is likely to occur in late first trimester or even in second trimester. Rarely pregnancy can go on till late second trimester before rupturing. The haemorrhage occurring because of rupture is massive and can be life-threatening, unless diagnosed and treated promptly.

Ravasia *et al* reported an 8% incidence of uterine rupture in women with congenitally malformed uteri compared with 0.61% in those with normal uteri ($p=.013$) who were attempting vaginal birth after caesarean.⁸ Induction with prostaglandin E1 is an important risk factor associated with rupture. Pregnancies implanted in the rudimentary horn of the uterus pose special risk for those women undergoing induction of labour, with a uterine rupture rate of up to 81%, 80% of ruptures occurred before the third trimester, with 67% occurring during the second trimester. The timing of rupture can occur from fifth week onwards. Rupture is usually associated with catastrophe and bleeding is torrential and 90% of maternal deaths have been reported within 10–15 months after rupture.

Rudimentary horn pregnancy should be suspected whenever difficulty is experienced while terminating a pregnancy and every attempt should be made to rule out the same. Uterine abnormalities, though rare can be encountered in pregnancy. There is need to build capacity for making an antenatal diagnosis in order to ensure appropriate management.⁹

Prostaglandin E1 is a cheap drug and it is stored in room temperature, so it is often used for the induction of labour. There are no specific guidelines for induction of labour with prostaglandin E1, but American Congress of Obstetricians and Gynaecologists (ACOG) recommends use of prostaglandin E1 at lower dose (25 mcg every 3 to 6 h) for the induction of labour as level A recommendation. ACOG said that the data on the safety of high-dose misoprostol (50 mcg every 6 h) were 'limited or inconsistent', making its recommendation on high-dose misoprostol an evidence level 'B' recommendation.

Learning points

- ▶ Bicornuate uterus belongs to the class IV according to The American Society for Reproductive Medicine Classification of Mullerian anomalies (1988) and results from failure of fusion of Mullarian ducts in the upper part.
- ▶ Rupture in such cases occurs because of inability of malformed uterus to expand as a normal uterus. The walls of the anomalous uteri tend to become abnormally thin as pregnancies advances. Thickness can be inconsistent over different aspects of the myometrium, and the placenta does not adhere properly.
- ▶ Rupture of anomalous uterus pregnancy should be suspected whenever difficulty is experienced while terminating a pregnancy and every attempt should be made to rule out the same particularly in unbooked cases.

Competing interests None.

Patient consent Obtained.

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