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PREGNANCY IN A RUDIMENTARY HORN : A DIAGNOSTIC DILEMMA

Gynaecology

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ABSTRACT

A unicornuate uterus with a rudimentary horn is a uterine anomaly resulting from the incomplete development of one of the Müllerian ducts and an incomplete fusion with the contralateral side. Pregnancy in a rudimentary horn is a rare condition that can lead to a catastrophic outcome when it ruptures. The majority of cases are diagnosed late. The use of ultrasonography helps clinicians to diagnose uterine malformations earlier, which can then be confirmed by a MRI or a laparoscopy. The standard treatment for a rudimentary horn pregnancy is surgical excision to prevent complications and recurrence.

KEYWORDS

unicornuate, rudimentary horn, Mullerian

Introduction

Uterine anomalies result from the failure of complete fusion of the Müllerian ducts during embryogenesis. The incidence in the general population is estimated to be 4.3%[1].

A unicornuate uterus with a rudimentary horn results from the failure of one of the Müllerian ducts to develop completely and an incomplete fusion with the contralateral side[2].

The incidence of this anomaly is approximately 0.4%1. In the majority (83%) of cases, the rudimentary horn is non-communicating[2].

Rupture during pregnancy is the most dreaded complication which can be life threatening to the mother.

Case Report

Mrs. Z was a G2P1L1 at 18 weeks 4 days period of gestation (POG) with history of previous LSCS. She presented with complains of acute pain abdomen since 5 hours prior to her admission. Prior surgical records were suggestive of a bicornuate uterus with pregnancy in the right horn and she had undergone a Caesarean delivery 3 years back, with no history suggestive of intra-operative or post-operative complications.

On examination, her general condition was fair and vital signs were stable with a pulse rate of 80/min and blood pressure of 110/70 mmHg. On per abdominal examination, abdomen was non-tender and uterine size corresponded to the period of gestation. No evidence of bleeding noted on per speculum examination. Bimanual examination was found to be normal, with no evidence of palpable adnexal mass.

A transabdominal ultrasound scan was performed which showed a bicornuate uterus with communicating horn and a live gestation corresponding to 18 weeks in the left horn. Her laboratory investigations were found to be normal. Since the patient's vital signs were stable, she was managed conservatively.

Despite symptomatic treatment, intensity of abdominal pain increased 3 days later. Her pulse rate was 96/min and blood pressure was 11/70 mmHg. Abdominal examination revealed uterine size corresponding to 20 weeks, with abdominal tenderness and guarding. On per vaginal examination, cervical motion tenderness was noted.

A follow up transabdominal ultrasound scan was done, which showed rupture of left uterine horn with fetal demise and evidence of moderate free fluid in the abdomen.

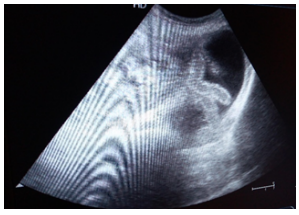

Figure 1 : Transabdominal ultrasound showing rupture of horn of uterus with free fluid in peritoneum

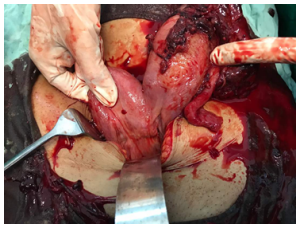

Figure 2 : Ruptured left rudimentary horn attached to unicornute uterus

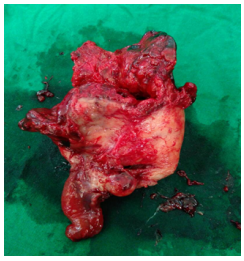

Figure 3 : Posterior view of the rudimentary horn

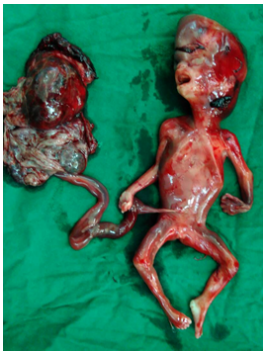

Figure 4 : Fetus extracted from the peritoneal cavity

Patient was hemodynamically stable, and posted for an emergency laparotomy.

Intra-operatively, hemoperitoneum was present, approximately 1 litre of blood was drained. A unicornuate uterus with rudimentary horn was noted. Rupture of the rudimentary horn noted posteriorly, with products of conception partly in the peritoneal cavity. Left ovarian cyst was noted. Excision of rudimentary horn was planned, however in view of failure to secure hemostasis, subtotal hysterectomy with left salpingo-oophorectomy was carried out.

2 units of packed red cells were transfused post-operatively and post-op recovery was uneventful. She was discharged on 6th postoperative day.

Discussion

Rudimentary horn pregnancy occurs in approximately 1/76 000 to 1/150 000 pregnancies[3]. Pregnancy in a non - communicating rudimentary horn occurs through transperitoneal migration of sperm or fertilized ovum.

These cases usually result in the rupture of the horn in the second or third trimester, typically between the 10th and 20th week of gestation. Only 10% of cases such as these reach term, and the fetal salvage rate is only 2%[4]. The rupture occurs because of the underdevelopment of the myometrium and a dysfunctional endometrium[4]

Although the incidence of rudimentary horn pregnancy is relatively small, the risk of serious maternal morbidity and mortality is high. The clinical presentations of rudimentary horn are variable and hence an early diagnosis of the condition remains a challenge.

A history of severe dysmenorrhoea may be a clue for diagnosis. However, the rudimentary horn may be underdeveloped and its endometrium nonfunctional, so dysmenorrhoea may be absent. A careful pelvic examination in the first trimester showing a deviated uterus with a palpable adnexal mass should provoke suspicion of a Müllerian anomaly. It can be confirmed by an ultrasound or MRI. The key for diagnosis prior to the rupture is a high index of clinical suspicion. Early prerupture diagnosis is therefore very important.

The following criteria have been suggested by Tsafri et al for sonographic diagnosis of rudimentary horn pregnancy[5]:

(1) pseudopattern of an asymmetrical bicornuate uterus,
(2) absent visual continuity between the cervical canal and the lumen of the pregnant horn, and
(3) the presence of myometrial tissue surrounding the gestational sac.

Ultrasound sensitivity remains only 26%[4]. The enlarging horn with the thinned myometrium can obscure the adjacent anatomical structures and the sensitivity further decreases as the gestation progresses Additionally, hypervascularization typical to placenta accreta may support the diagnosis of rudimentary horn pregnancy. This feature can be diagnosed with colour flow Doppler and power Doppler sonography.

Approximately 38% of patients have coexisting renal abnormalities. Unilateral renal agenesis is most commonly found; this is always ipsilateral with the rudimentary horn. The differential diagnosis includes a tubal, corneal or intrauterine pregnancy in a bicornuate uterus.

Management consists of excision of the pregnant rudimentary horn and ipsilateral fallopian tube, traditionally by laparotomy

Conclusion

Since the outcome of rudimentary horn pregnancy is catastrophic, it warrants earlier detection of the location of embryonic development by sophisticated diagnostic tools. A high index of clinical suspicion for uterine malformations early in the gestation can reduce the mortality rate, along with early intervention. When a rudimentary horn pregnancy is diagnosed, the excision of the horn with ipsilateral salpingectomy is the recommended surgical treatment for the best prognosis. This case highlights the need for high clinical suspicion of this rare condition Patients attending Gynecologic clinic and women in general population must be educated on the gynecologic and obstetric complications of extrauterine pregnancies.

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