### CASE REPORT

# RUPTURED ECTOPIC PREGNANCY IN RUDIMENTARY HORN OF THE UTERUS

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#### ABSTRACT

Rudimentary horn is one of the rarest congenital uterine anomalies and consists of a relatively normal appearing uterus on one side with a rudimentary horn on the other side. It is difficult to diagnose before surgery and hazardous to maternal life as rupture of pregnant horn result in severe hemoperitoneum. Case of rudimentary horn pregnancy is reported in a lady with history of habitual abortion and signs and symptoms of acute adnexal pathology. Exploratory laparotomy revealed ruptured rudimentary horn pregnancy. Excision of accessory horn was done.

**KEY WORDS:** Rudimentary horn. Ectopic pregnancy. Mullerian duct malformation. Rupture.

#### **INTRODUCTION**

Congenital uterine malformations are the result of abnormal Mullerian duct development, fusion, canalization and septal resorption. The prevalence of congenital uterine anomalies among fertile women is reported as 1:200 to 1:600. Where there is atresia of one of the mullerian duct, there is a unicornuate uterus with a single tube. Its true incidence is unknown and is approximately estimated at a rate of about 1 in 250.1 Unicornuate uterus may also have a rudimentary horn. Rudimentary horn is one of the rarest congenital uterine anomalies. The prevalence of unicornuate uterus with rudimentary horn is even rarer i.e. 1:100,000.1 The rudimentary horn may consist of a functional cavity, or it may be a small solid lump of the uterine muscle with no functional endometrium. In a series of 366 cases with rudimentary horn, non-communicating horn accounted for 92% of cases, and renal anomaly was found in 36% cases.<sup>2</sup> Unilateral renal agenesis was found in 38% cases in another series.<sup>3</sup> Contrary to the American fertility society classification of uterine anomalies, rudimentary horn may occur without a corresponding unicornuate uterus.<sup>2</sup>

Provided there is no obstruction to menstrual flow, these uterine anomalies present few problems in the absence of pregnancy. Pregnancy in a rudimentary horn is rare. The incidence of rudimentary horn pregnancy is difficult to calculate. Frequently quoted figures are between 1 per 76,000 and 1 per 140,000 pregnancies.<sup>4</sup> A case of pregnancy occurring in a rudimentary horn with consequent rupture is reported.

# CASE REPORT

A 36 years old woman, married for 14 years, presented in emergency with 13+ weeks' gestation and history of fever for the past 1 week. Fever was intermittent, high grade associated with chills. She also had increased frequency of diarrheal stools (10-12 times/day) with abdominal cramps for the past

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three days. There was history of two episodes of slight

bleeding per vaginum 24 hours and 3 hours back, associated with acute severe lower abdominal pain. She also had 6-8 episodes of non-projectile vomiting, 1/2 cup in amount and contained food particles.

She had history of three consecutive abortions in the past. All of her previous conceptions were spontaneous. The abortions had occurred 4 years,  $2-1/_2$  years and 6 months back at 7, 8 and 14 weeks of gestation respectively.

Blood pressure was 100/60 mmHg with pulse rate of 98/min, temperature at 100ÞF and respiratory rate of 22/minute. She was dehydrated and anemic. Per abdominal examination revealed deep tenderness and rebound tenderness in the right iliac fossa. Bimanual pelvic examination showed a soft cervix, bulky uterus, full, tender right fornix and positive cervical excitation. There was no bleeding per vaginum. Her investigation showed hemoglobin-10.3g%, while blood counts, urea, creatinine and electrolytes was within normal limits. A previous ultrasound done one month back had shown an intrauterine pregnancy of 9 weeks and no adnexal pathology. This led to misdiagnosis of the condition. A diagnosis of acute appendicitis/appendicular lump was made. She was managed conservatively with intravenous hydration, antibiotics, antispasmodic and antacids. Her vitals did not deteriorate further but pain did nto settle. Abdomino-pelvic ultrasound was done. It showed an anteverted uterus measuring 8.5x4.1x5.6 cm, having regular contour and endometrium measuring 0.4 cm without any focal mass or gestational sac. A complex mass was described as arising from the right ovary measuring 6.1 x 4.6 cm, which could be an ectopic pregnancy. Left ovary measured 1.8 x 1.6 cm. No other adnexal mass was seen. No free fluid seen in the cul-de -sac.

An emergency laparotomy was planned due to acute presentation. Operative findings were bulky uterus and normal left tube and ovary. No haemoperitoneum was seen. A matted and hemorrhagic loop of small intestine was adherent to the uterus on the right side completely obscuring fallopian tube, round ligament and broad ligament on the right side. It was mimicking a haematoma in the broad ligament. When gentle sharp and blunt dissection was done to mobilize the loop of bowel, an accessory horn was identified arising from the right side of the uterus which was non-communicating. It was ruptured and products of conception were partially expelled from the ruptured segment. Resection of accessory horn of the uterus was done with repair of the resected segment of uterus and plication of the round ligament was done on the right side to the main cornu of the uterus.

Patient had a smooth postoperative recovery. Histopathological examination of the specimen confirmed the diagnosis of rudimentary horn pregnancy. IVP was done later, which showed no associated renal abnormality. Karyotyping showed 46 XX pattern. The anti-cardiolipin antibodies and serum LH/FSH, which were done later, were normal. She was counseled for contraception with oral pills for one year.

## DISCUSSION

Conception in the rudimentary horn arises either from a small communication with the uterine cavity or by transperitoneal migration of the fertilized ovum from the contralateral side. The natural history of Rudimentary Horn Pregnancy (RHP) is usually rupture of the pregnant horn during the second or third trimester, resulting in life-threatening heavy bleeding. Although the reported lady presented with an acute abdomen, but typical presentation of ruptured horn leading to hemoperitoneum and shock was not there, which is rare.

In this case, the patient had presented with an acute abdomen but previous ultrasound led to misdiagnosis of the condition. In order to diagnose ectopic pregnancy at an early stage, every woman, who present with unexplained abdominal pain, should be first suspected to have ectopic pregnancy until proved otherwise.<sup>5</sup> Mohsin et al. conducted a prospective study in 2001, which showed ultrasound examination clearly diagnostic in 96.3% patients without the help of Beta hCG<sup>6</sup> in ectopic pregnancy. Although ultrasonography is reported to be a useful tool in diagnosing rudimentary horn pregnancy, this may not be the case in inexperienced hands. Criteria for early sonographic diagnosis of RHP includes pseudopattern of an asymmetrical bicornuate uterus, absent visual continuity between the cervical canal and the lumen of the pregnant horn, and the presence of myometrial tissue surrounding the gestational sac. Additionally, hypervascularization typical to placenta accreta may support the diagnosis of RHP. Magnetic resonance imaging has proven to be a useful, noninvasive tool for the diagnosis of Mullerian abnormalities7 but was not feasible in this case because of acute presentation requiring early exploratory laparotomy.

Although early diagnosis of RHP remains challenging, few cases of early (first-trimester), prerupture sonographic diagnosis of this condition have been reported.<sup>8,9</sup>

This patient also had recurrent abortions in the past. Rudimentary horn is a cause of recurrent abortion, successive pregnancies tending to be longer. In patients with recurrent miscarriage, the reported frequency of uterine anomalies varies widely, from 1.8% to 37.6%.<sup>1</sup> Using three dimensional ultrasound as a diagnostic tool, a recent large prospective study reported that the frequency of uterine anomalies was 23.8% in women with recurrent first trimester miscarriage compared with a frequency of 5.3% in low risk women who were referred for ultrasound for a variety of reasons unrelated to pregnancy outcome.<sup>10</sup> The significance of such anomaly, in women with recurrent miscarriage is unclear. The exact etiology is unknown, although, implantation over a septum or similar defect may result in decreased vascularity of the placenta with consequent abortion.

Rupture of rudimentary horn is one of the remote causes of acute abdomen with pregnancy. However, missing the diagnosis can lead to fatal complications while early detection can save the life of patient. Ideally, history of repeated abortions must be investigated before conception to exclude Mullerian duct malformation. In all such cases, surgical excision is mandatory. In addition, an intravenous pyelogram is indicated because of high incidence of associated urinary anomalies in the presence of genital anomalies. In this case, intravenous pyelogram had revealed no associated renal anomaly.

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