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## **Pregnancy in Rudimentary Horn of Uterus: A Case Report**

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### **ABSTRACT**

Conception in rudimentary horn is reported to cause severe obstetric and gynecological complications. Despite the crucial importance of the observation, there is an acute paucity of literature. Although, there are some reports available in the world literature, such a condition in Saudi population is very rare. In the present study a case report on pregnancy in rudimentary horn is presented and discussed. In this case, there was a left unicornuate uterus with a normal ovary and fallopian tube. To the right, there was a rudimentary horn, with a sac visualized on the surface. The sac ruptured with manipulation, expelled the fetus and placental pieces. Resection of accessory horn of the uterus was done with repair of resected segment of uterus. The patient had a smooth postoperative recovery. In conclusion, (1) it will be interesting to know, if history of previous caesarean sections for breech (as observed) might be a probable etiological factor for rudimentary horn pregnancies and (2) it is suggested that earlier detection of the location of embryonic growth by sophisticated diagnostic tools will save any such catastrophic outcome.

**Key words:** Unicornuate uterus, rudimentary horn, pregnancies, fetus, placental pieces, complications

### **INTRODUCTION**

Congenital malformations of the uterus, also known as Mullerian duct anomalies, are rare in general population (approx 1%) (Winkel, 1993; Carrington *et al.*, 1990). These abnormalities result from arrested development, abnormal formation or incomplete fusion of mesonephric ducts. Unicornuate uterus results from unilateral arrested mullerian duct development (Nahum, 2002). Rarely unicornuate uterus may also have a rudimentary horn, more on the right than on the left side. The incidence of unicornuate uterus is estimated to be 1: 250 and its occurrence with rudimentary horn is 1: 100,000 (Grimbizis *et al.*, 2001). Such anomalies are reported to result in increased rate of miscarriages, recurrent pregnancy losses, preterm labor, infertility and other obstetric complications. Conception in rudimentary horn arises either from a small communication with the uterine cavity (communicating) or by transperitoneal migration of the fertilized ovum from the contra-lateral side (non communicating). The proportion of non communicating rudimentary horns is 70-90% (Jayasinghe *et al.*, 2005). The frequency of pregnancy in rudimentary horn is reported to be 1:76000 (Sutkin and Jazayeri, 2003). The clinical presentations vary from being asymptomatic to vague complaints of mild lower abdominal pain with gastrointestinal upset to its severest form of acute abdomen with hemorrhagic shock. The most significant threat of a

rudimentary horn pregnancy is the risk of rupture because of poorly developed musculature (Nahum, 2002). In view of the paucity of literature on rare observation of pregnancy in rudimentary horn of uterus, the case reported here is of crucial importance.

## **MATERIALS AND METHODS**

The present study on a case report of pregnancy in rudimentary horn of uterus was conducted in operation Theatre of Obstetrics and Gynecology Department of King Khalid University Hospital, King Saud University during the period June 2010 to July 2010. The operation theatre was fully equipped as per the international norms.

## **CASE REPORT**

A 29 year old lady, married for 9 years, para 2 with history of two previous caesarean sections presented to Accident and Emergency department with generalized abdominal pain and backache at 14 weeks of gestation. Her previous two caesarean sections were for breech presentation. Her vital signs were stable. On abdominal examination, there was a tender palpable mass of 4×3 cm with restricted mobility. Bimanual examination revealed bulky uterus and there was fullness in the right iliac fossa. Ultrasound revealed bulky and empty uterus with thickened endometrium (Fig. 1). However, there was viable fetus seen towards the right adnexa. Fetal heart beats and fetal movements were detected. Both ovaries appeared normal. Sonographic diagnosis of extrauterine pregnancy on the right side was made with differential diagnosis of abdominal pregnancy. Her previous operative notes were reviewed and revealed the presence of a rudimentary horn on the right side of the uterus so she was planned for laparotomy. During the procedure, while opening the peritoneal cavity, there was almost a liter of blood in the cavity. There was a left unicornuate uterus with a normal ovary and fallopian tube. To the right, there was a rudimentary horn, with a sac visualized on the surface (Fig. 2). The sac ruptured with manipulation, expelling the fetus and placental pieces (Fig. 3, 4). Resection of accessory horn of the uterus was done with repair of the sliced segment of uterus. The patient had a smooth postoperative recovery and was discharged from the hospital.



Fig. 1: Ultrasound showing extra uterine pregnancy



Fig. 2: Foetus delivered from the rudimentary horn



Fig. 3: View of bicornuate uterus



Fig. 4: Placenta expelling from rudimentary horn

## DISCUSSION

Uniconuate uterus with a rudimentary horn is an abnormality with prognostic implications for poorer outcomes during pregnancies. Women presenting with a history of this anomaly are considered high risk (Reichman *et al.*, 2009). In the present case the patient was presented as a clinical emergency for irresistible abdominal and back pain at 14 weeks of pregnancy. She was subjected to a thorough physical examination and methods of diagnosis (ultrasound) that revealed pregnancy in rudimentary horn to show viable fetus with heart beats and movements. Reports in the literature confirm that such pregnancies are known to last up to 20 weeks, while there are some cases with a total neonatal survival (McCarthy, 1999). During laparotomy the peritoneal cavity was observed to be full with blood indicating a possible rupture of the rudimentary horn. Such an observation of hemoperitoneum was also observed by Tufail and Hashmi (2007). The observed hemoperitoneum in the present case is considered to be due to the rupture of rudimentary horn. Kadan and Romano (2008) described rupture of the rudimentary horn, as the most significant threat to pregnancy and a life threatening situation. In such cases, termination of pregnancy and resection of the rudimentary horn would be life saving, in addition to avoiding subsequent pregnancies in the same horn (Heinonen, 1997; Schmied *et al.*, 2008; Reichman *et al.*, 2009). Hence, upon diagnosis of the present condition, immediate laparotomy was conducted to terminate the pregnancy to save a life threatening situation and resect the rudimentary horn to avoid any catastrophe in the future.

Literature reports demonstrate different etiologies for rudimentary horn pregnancy. These are frequent abortions (Daskalakis *et al.*, 2002), infertility, caesarian operations, symptoms of acute adnexal pathology (Tufail and Hashmi, 2007), multiple laparoscopies (Stitely and Hopkins, 2006), primigravida (Samuels and Awonuga, 2005), pain and dysmenorrheal (Stitely and Hopkins, 2006), use of estrogens (Sadik *et al.*, 2002), haematometra (Dimitrova and Nalbanski, 1997) and urinary tract infections (Tufail and Hashmi, 2007; Balasch *et al.*, 1994). However, in the present case, the associated risk appeared to be her history of two caesarian operations for breech presentation, in addition to the observation of fetus towards the right adnexa. This observation confirms the report of Tufail and Hashmi (2007) who showed caesarian operations for breech presentation and symptom of acute adnexal pathology as the possible etiological factors for rudimentary horn pregnancies.

The clinical presentations of rudimentary horn are variable and hence an early diagnosis of the condition remains a challenge. There are varied methods of diagnosis, including 3-dimensional ultrasonography and/or magnetic resonance imaging examinations (Samuels and Awonuga, 2005; Marten *et al.*, 2003), transvaginal scan, hysterosalpingography, hysteroscopy and laparoscopy (Daskalakis *et al.*, 2002). Nevertheless, there are no definitive clinical criteria to diagnose this life threatening condition in case of emergency. In present scenario the patient was presented as a clinical emergency with generalized abdominal pain and backache at 14 week of pregnancy and hence there were less chances of conducting an earlier detection. Hence, the diagnostic measures adopted in the present case included, just the symptoms of the condition and ultrasonography.

Taken together, it will be interesting to know, if history of previous caesarean sections for breech (as observed in this case) might be a probable etiological factor for rudimentary horn pregnancies. Furthermore, since the outcome of rudimentary horn pregnancy is catastrophic, it warrants earlier detection of the location of embryonic development by sophisticated diagnostic tools. Patients attending Gynecologic clinic and women in general population must be educated on the gynecologic and obstetric complications of extrauterine pregnancies and their association with renal diseases.

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