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Case Report

Rudimentary horn of Uterus: A diagnostic challenge in pregnancy

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B.J. Medical College, Ahmedabad, Gujarat, India***Article History:****Received:** 22/09/2017**Revised:** 25/09/2017**Accepted:** 25/09/2017**DOI:** <https://doi.org/10.7439/ijbar.v8i9.4406>**Abstract**

When the development of the mullerian duct is normal on one side, but imperfect on the other side, a lateral fusion defect often with obstruction, described as rudimentary horn, is produced. Most rudimentary horn are non functional and some are attached to the functioning contralateral horn by means of fibrous bands. If the endometrium lining the cavity of the non communicating rudimentary horn is functional, retention of menstrual blood causes cyclic abdominal pain and spillage of blood into the abdominal cavity via the tubal ostium may lead to endometriosis. Sometimes a narrow communicating channel exists between the rudimentary horn and the opposite uterine cavity. Under these circumstances pregnancy is possible, most of the patients present with symptoms suggestive of an ectopic pregnancy including of uterine rupture causing catastrophic bleeding and circulatory collapse. We present a similar case where laparotomy was done thinking of ruptured ectopic pregnancy.

Keywords: Rudimentary, ectopic pregnancy.**1. Introduction**

Female reproductive tract develops with fusion of two mullerian ducts which forms fallopian tubes, uterus and upper 2/3 of vagina. Sometimes this fusion may be defective which results in anomalous reproductive tract or mullerian anomalies. When the lateral fusion of mullerian ducts is defective unicornuate uterus with rudimentary horn results. Most rudimentary horn have non functional endometrium and are attached to the functioning contralateral horn by means of fibrous bands. In these types of cases patients are mostly asymptomatic. If the horn is non-communicating and endometrium is functional, retention of menstrual blood causes cyclic abdominal pain and spillage of blood into the abdominal cavity via the tubal ostium leading to endometriosis. However if the horn is communicating with the opposite uterine cavity pregnancy is possible. In such cases patients may present with signs and symptoms of ectopic pregnancy in early trimester due to rupture of rudimentary horn leading to catastrophic

bleeding and circulatory collapse. In late trimester patient may present with preterm labour, placenta praevia, IUGR, malpresentation. Here 2 cases one of early and second of late trimester is presented.

2. Case Report**2.1 Case Report 1**

A 30 year old G2P1L1 patient presented to labour room at 20 weeks of pregnancy. She had previous caesarean delivery for breech presentation 3 years back. Documents were not available. Her present pregnancy was unbooked. She came with complaints of abdominal pain associated with dizziness for 2 days and gave history of one episode of syncope. There was no history of vomiting or bleeding per vaginum. On admission, she was unstable with PR- 108 per minute, BP 100/70 mm Hg. On Obstetric examination per abdomen lower abdominal distention was present along with marked tenderness and rigidity. FHS not heard by Doppler. As per speculum examination, cervix was anterior

with os closed. On per vaginum examination POD fullness felt. Uterus was normal in size, retroverted, cervical motion tenderness present. Her Hb was 4.5g% and PTI- 72.2%. Laparotomy was done for her worsening condition thinking on the lines of ectopic pregnancy. After opening the abdomen around 1.5 litres of collected blood was suctioned. Uterus unicornuate with rupture of rudimentary right horn seen. Placenta was adherent to the horn. A dead fetus of about 20 weeks was lying in abdominal cavity. Rudimentary horn was communicating with the uterus. Profuse bleeding was present from ruptured horn. Rudimentary horn along with placenta and right tube was excised en bloc. Hemostasis achieved. 3 pint blood and 4 unit FFP's transfused to the patient intraoperatively. Post operative recovery was uneventful. patient was discharged on 8th post operative day in good condition. Her USG KUB was normal.

2.2 Case Report 2

A 25 yr old G3P2L2 patient came to Labour room with complaints of Labour pains since 6 hrs at 36wks +3 d gestational age. She was not a booked case. On admission she was vitally stable with PR- 88bpm and BP 120/80mm Hg. On per abdomen examination pre-void transverse scar of caesarean section was present, non tender uterus was 36 weeks size, cephalic presentation, having contractions of 2/10-15"/10' with regular fetal heart 140bpm. On Per vaginal examination cervix was 3cm dilated, 30-40% effaced, station vertex -2, membranes present. Her past obstetric history has one preterm emergency caesarean for placenta praevia at 8 months of amenorrhoea 1 year 6 months back. However no documents available. She was taken up for emergency caesarean section. Intraoperative there was unicornuate uterus with communicating left rudimentary horn. Baby was present in rudimentary horn and was delivered. There was a succentrate lobe of placenta embedded in rudimentary horn which was delivered out. Post operative period was uneventful. Her USG KUB was normal. Patient was discharged on 8th Post operative day after suture removal.

Figure 1: Intra-operative photograph showing the anterior view of the uterus with the rudimentary horn attached to its left side



3. Discussion

Unicornuate uterus with a rudimentary horn is produced as a result of failure of complete development of one of the müllerian ducts and incomplete fusion with the contralateral side. Rudimentary horn may be communicating or non communicating being attached to contralateral side with fibrous or fibromuscular band. In 83% of cases the rudimentary horn is non-communicating unlike these cases where continuity was demonstrated [1]. The incidence is estimated at 1 per 100,000 to 140,000 pregnancies [2]. The first case of uterine rupture associated with rudimentary horn was reported in 1669 by Mauriceau [3]. Since then the incidence of rupture has decreased many folds due to early diagnosis and intervention. Rudimentary horn may rupture from 5 to 35 weeks or may proceed to term pregnancy. Rupture occurs because of limited ability of the horn musculature to hypertrophy and dilate. 70–90% ruptures before 20 weeks and can be catastrophic [4].

Most of the times rudimentary horns are asymptomatic. The non communicating rudimentary horn can lead to endometriosis due to retrograde menstruation. Pregnancy in a rudimentary horn is associated with high chances of spontaneous abortion, preterm labour, intrauterine growth retardation, torrential intraperitoneal haemorrhage and uterine rupture. Pregnancy in rudimentary horn is associated with placental abnormalities like placenta accreta. The rate of placenta accreta has been shown to be over 10% [5]. Most of the times pregnancy gets terminated in early gestational age but sometimes progresses to term gestation. Vaginal bleeding may occur in a case of pregnancy in the communicating horn. Labour inducing agents like misoprostol are dangerous to use as can lead to rupture of rudimentary horn. Misdiagnosis is common and can lead to rupture of rudimentary horn as shown by Samuels *et al* [6]. A high index of suspicion should be kept if there is failure of induced abortion. There are various modalities for diagnosis but a high index of suspicion has to be kept in mind. Modalities include Ultrasound, hysterosalpingogram, hysteroscopy, laparoscopy, and MRI [7]. The sensitivity of ultrasound is only 26% and as the pregnancy advances the specificity goes down [8]. Incidentally rudimentary horn may be found during hysterosalpingography and once found should ideally be removed. Primary strategy of management of rudimentary horn is surgical removal [9]. Criteria for diagnosing pregnant rudimentary horn are (1) a pseudo pattern of asymmetrical bicornuate uterus; (2) absent visual continuity tissue surrounding the gestation sac and the uterine cervix; (3) presence of myometrial tissue surrounding the gestational sac [10]. Surgical removal may be done by open method or laparoscopically [11]. There are instances of early diagnosis and laparoscopic excision of rudimentary

horns. Fibrous band connecting rudimentary horn to uterus may be transacted by using endoscopic stapler as done by Yahata *et al* [12]. Medical management of pregnancy in rudimentary horn with methotrexate and later its resection by laparoscopy is also reported. Pregnancy in rudimentary horn detected at an early gestational week and treated successfully with methotrexate administration was shown by Edelman *et al* [13]. Immediate surgery is recommended by most after the diagnosis even in unruptured cases [8].

Patients having mullerian anomalies have high chances of anomalies of kidney, ureter and bladder. Renal anomalies are found in 36% of cases [8]. Thus the patients should be screened for these anomalies. These are generally present on the side where the mullerian abnormality is most pronounced. The kidney may be absent, malrotated, horseshoe shaped or placed low in pelvic cavity.

There is need for increased awareness of this rare condition and to have a high index of suspicion especially in developing countries where the possibility of early detection before rupture is unlikely.

4. Conclusion

Despite advances in ultrasound and other diagnostic modalities, prenatal diagnosis remains elusive, with confirmatory diagnosis being Laparoscopy/laparotomy. Diagnosis can be easily missed unless there is high suspicion. The general condition and health of patient may suffer due to delayed diagnosis or misdiagnosis. Timely resuscitation, surgery, and blood transfusion are needed to save the patient. Proper diagnostic methods and early referral from the peripheral hospitals is needed to reduce the morbidity and mortality of the patients. There is a need for an increased awareness of this condition especially in developing countries where the possibility of detection before pregnancy or before the rupture is unlikely, and precious time is lost in shifting these women to the referral hospital.

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