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Case Report

Laparoscopic resection of unruptured rudimentary horn pregnancy

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ABSTRACT

A non communicating rudimentary horn is an uncommon site for ectopic pregnancy. Rudimentary horn pregnancy is a rare entity but associated with grave clinical consequences. Majority of these cases if not detected timely end up in uterine rupture and present as an obstetrical emergency. We present this case of a 32 years old, third gravida with a 12 weeks live gestation in the right rudimentary horn, which was successfully managed with laparoscopic resection. Early diagnosis is the key stone in the management of such cases. Laparoscopic resection is a safe and viable option in the surgical management of unruptured rudimentary horn pregnancy.

Keywords: Laparoscopy, Rudimentary horn pregnancy, RHP

INTRODUCTION

Unicornuate uterus with a rudimentary horn is an uncommon Mullerian anomaly. If the horn is non-communicating and lined by functional endometrium it can give rise to a variety of clinical presentations. One such complication is the nidation of an ectopic gestation. The exact incidence of rudimentary horn pregnancy (RHP) is difficult to estimate, but frequently reported as 1 per 76,000 to 1 per 140 000 pregnancies in the literature.[1,2] Undetected, it usually ends with rupture of the gravid horn in second or third trimester, resulting in catastrophic hemorrhage. Accurate prerupture diagnosis allows for a timely surgical intervention.

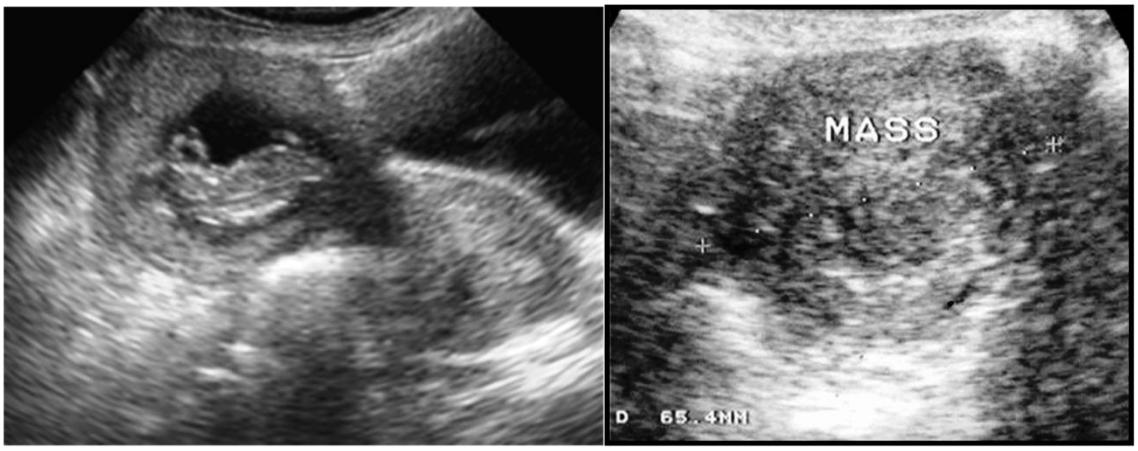
CASE REPORT

A 33 years old, G3P1L1A1, presented to our OPD, at 11^{+6} weeks of gestation with an outside ultrasound report showing a single live intrauterine gestation of 11^{+4} weeks and a 64x46 mm, solid appearing, left adnexal mass. Her obstetric history was significant for a spontaneous abortion at eight weeks, followed by a full term vaginal delivery, three years back. Her present pregnancy was diagnosed two weeks after missing her period. She was referred to a higher centre for evaluation of adnexal mass detected during early pregnancy scan. She did not give any history of lower abdominal pain or vaginal bleeding during the index pregnancy.

A careful USG pelvis revealed that the left adnexal mass, as described above, was actually an empty uterine cavity in continuation with the cervix. An 11^{+4} days live gestation was found cephalad and to the right of the empty uterus (Figure 1a-b). The diagnosis of an unruptured right sided RHP was made. MRI was done to rule out any communication with the left unicornuate uterus before planning any surgical intervention. The vital parameters of the patient were stable and she opted for laparoscopic surgery.

Laparoscopic resection was performed using 10mm optic umbilical port and two 5mm lateral suprapubic ports. Anatomic relationships of the uterus and adnexa were clearly identified (Figure 2). The course of the right ureter was traced from the pelvic brim before starting the excision. We utilized a medial to lateral approach as the horn was attached to the uterus by a broad fibromuscular band (Figure 3a-b). Diluted vasopressin was instilled in the fibromuscular band in order to reduce the blood loss. The surgical division was carried out using bipolar cautery and monopolar scissors. After coagulating and dividing the feeding uterine vessel, the lateral attachments of the horn with the pelvic wall were separated (Figure 4a-b). This included the round ligament

anteriorly, the mesosalpinx and right tuboovarian attachment in the middle, and ovarian ligament posteriorly. The excised gravid horn with the right fallopian tube was retrieved through posterior colpotomy (Figure 5a-b). The procedure took 90 minutes and blood loss was about 100ml. Patient had a smooth postoperative recovery and was discharged on the next day.



(a) **(b)**

Figure 1: (a) Transabdominal USG showing an alive 11^{+4} days gestation, surrounded all around by myometrial mantle, situated cephalad and to the right of empty uterine cavity and not communicating to the cervix, (b) Transverse section of the empty uterine cavity measuring 64x46 mm, which was described as adnexal mass in the outside scan.

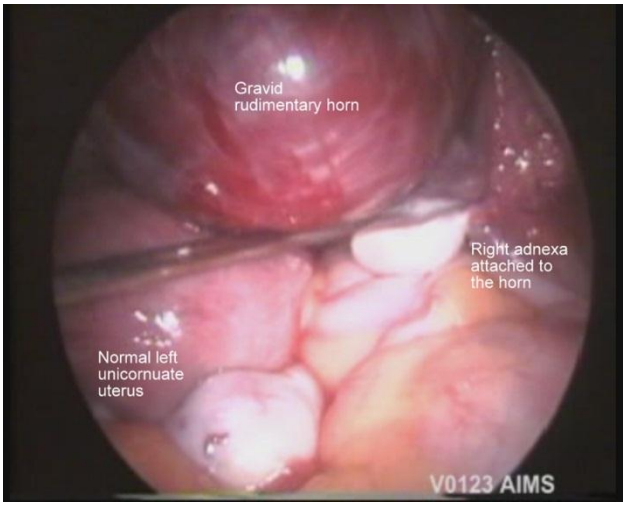


Figure 2: Laparoscopic view showing anatomic relationships of the gravid rudimentary horn with attached right adnexa. Empty left unicornuate uterus along with its adnexa is located below and to the left.

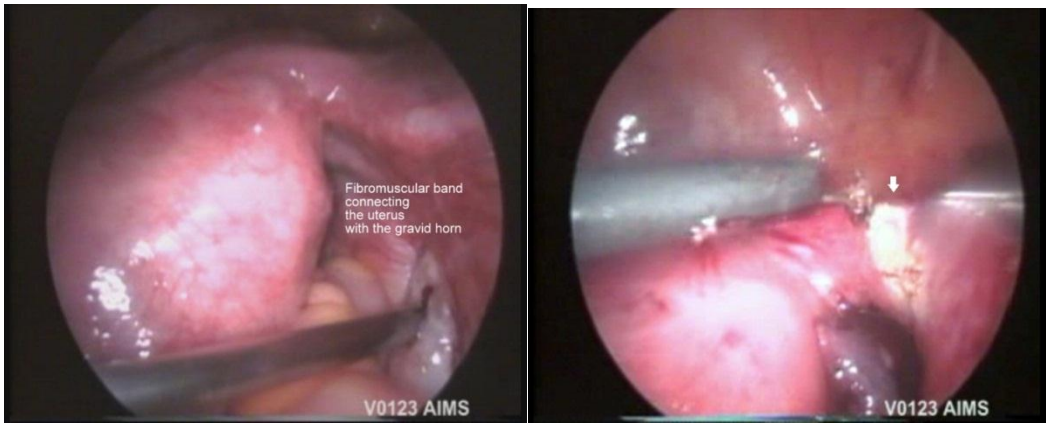
DISCUSSION

A non-communicating, cavitary rudimentary horn is an unusual site to harbor an ectopic pregnancy. The possible explanation for conception to take place in a rudimentary horn is through transperitoneal migration of the sperm via the contralateral tube.[3] Although live births near term have been reported, RHP is associated with a poor maternal and fetal outcome. Only 6% of RHP progress to term with reported neonatal survival rates ranging from 0 to 13%.[4] Natural outcome of RHP in majority of cases is the rupture of the pregnant horn around mid pregnancy resulting in serious maternal hemorrhage.[3] Early diagnosis is therefore crucial in order to avoid life threatening complications.

Diagnosis of this uncommon ectopic pregnancy can prove elusive as it is usually asymptomatic in the first trimester. Careful ultrasound examination and MRI are useful in establishing the diagnosis. USG criteria for sonographic diagnosis of RHP have been clearly defined and include a) pseudopattern of an asymmetrical bicornuate uterus, b) absent visual continuity between the tissue surrounding the gestational sac and the uterine cervix, and c) the presence of myometrial tissue surrounding the gestational sac.[5] Preoperative MRI is an additional useful tool. Multiplanar images aid in ruling out any communication between the horn and the uterine cavity and allow for confirmation of the diagnosis before surgical intervention. It also helps in ruling out coexisting urinary tract anomalies, especially on the side of the horn.

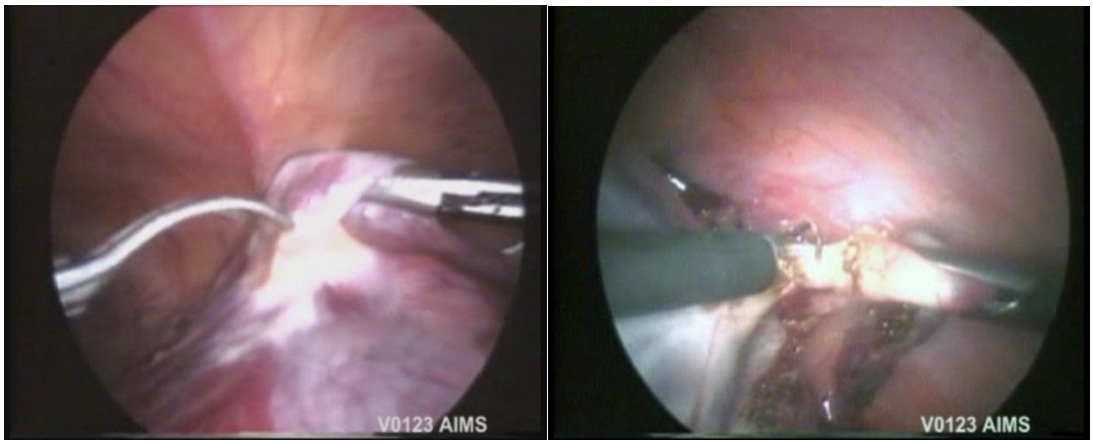
The management of ectopic pregnancy involves use of both medical and surgical modalities. RHP with its risk of rupture warrants a surgical excision. Laparoscopic surgery is emerging as the treatment of choice as witnessed by increasing number of case reports in the last two decades.[6-8] Tracking the course of ureter on the side of the horn at the commencement of surgery and

instillation of vasopressin at the site of attachment of the horn are useful operative tips. The attachment of the horn to the uterus can be divided using either a medial or a lateral approach, depending upon the type of attachment of the horn. A medial to lateral approach is preferred if the horn is attached to the uterus by a fibromuscular band.[9] Here, the uterine vessel is coursing medial to the horn which is divided early in dissection and hence prevents excessive blood loss during surgery. Lateral to medial approach is utilized if the horn has a broad sessile attachment and the uterine vessel courses lateral to the horn. Electrocoagulation, harmonic scalpel or stapling device[10] can be used for surgery depending upon the availability and surgeon's expertise.



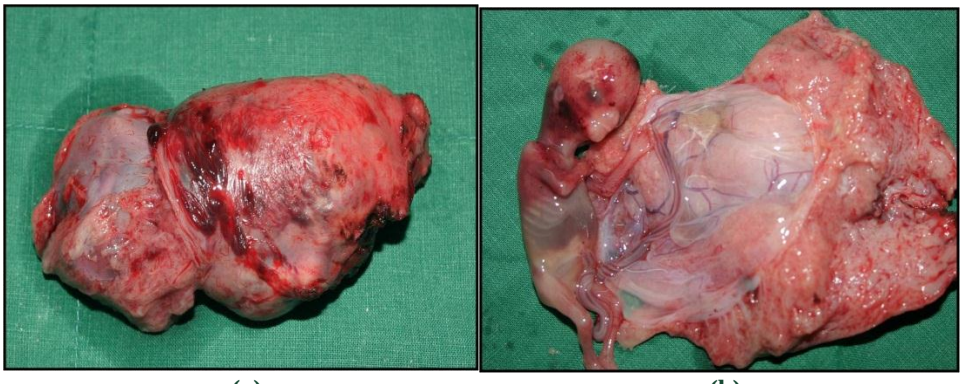
(a) **(b)**

Figure 3: (a) Fibromuscular attachment between the left unicornuate uterus and the pregnant rudimentary horn, (b) Dissection started by coagulating and cutting the fibromuscular band.



(a) **(b)**

Figure 4: Lateral attachments of the gravid horn being divided (a) round ligament, (b) tubal attachment.



(a) **(b)**

Figure 5: (a) Intact specimen of RHP after colpotomy retrieval, (b) Cut section showing attachment of the fetus and placenta to the muscular wall.

CONCLUSION

RHP is a rare clinical entity associated with serious consequences. The risk of rupture of the gravid horn is a major concern. Prophylactic resection of the horn along with its tube should be considered if it is detected incidentally during evaluation of infertility or during adnexal evaluation at the completion of caesarean section. Minimal incision, reduced tissue trauma, less postoperative pain, better cosmetic result, faster recovery and shorter hospital stay favor a laparoscopic approach and makes it an excellent alternative to laparotomy in the surgical management of unruptured rudimentary horn pregnancy.

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Ethical approval: Not required

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