

# Laparoscopic Resection of Unruptured Rudimentary Horn Pregnancy

Deepti Sharma, Usha MG, Ramesh Gaikwad, Sudha S

Department of Obstetrics and Gynecology, Amrita Institute of Medical Sciences, Kochi, Kerala, India

## ABSTRACT

A non-communicating rudimentary horn is an uncommon site for ectopic pregnancy. Rudimentary horn pregnancy (RHP) 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-year-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 RHP.

**Key words:** Laparoscopy, resection, rudimentary horn pregnancy

## 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, however, frequently reported as 1/76,000-1/140 000 pregnancies in the literature.<sup>[1,2]</sup> Undetected, it usually ends with rupture of the gravid horn in 2<sup>nd</sup> or 3<sup>rd</sup> trimester, resulting in catastrophic hemorrhage. Accurate pre-rupture diagnosis allows for a timely surgical intervention.

## CASE REPORT

A 33-year-old, G3P1 L1A1, 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 64 mm × 46 mm, solid appearing, left adnexal mass. Her

obstetric history was significant for a spontaneous abortion at 8 weeks, followed by a full term vaginal delivery, 3 years back. Her present pregnancy was diagnosed 2 weeks after missing her period. She was referred to a higher center 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 cranial and to the right of the empty uterus [Figures 1a and 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 10 mm optic umbilical port and two 5 mm lateral suprapubic

### Address for correspondence:

Dr. Deepti Sharma,  
Department of Obstetrics and Gynecology,  
Amrita Institute of Medical Sciences, P.O. AIMS,  
Amrita Lane, Ponekkara, Kochi, Kerala - 682 041, India.  
E-mail: sdeepti108@gmail.com

### Access this article online

#### Quick Response Code:



Website:  
[www.gynecendoscopy.org](http://www.gynecendoscopy.org)

DOI:  
10.4103/0974-1216.114161

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 [Figures 3a and b]. Dilute 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 [Figures 4a and 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 [Figures 5a and b]. The procedure took 90 min and blood loss was about 100 ml. Patient had a smooth post-operative recovery and was discharged on the next day.

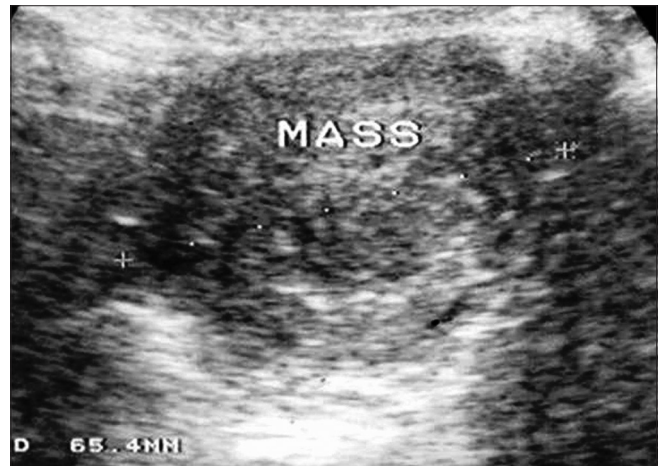
## DISCUSSION

A non-communicating, cavitory 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.<sup>[3]</sup> 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%.<sup>[4]</sup> Natural outcome of RHP in majority of cases is the rupture of the pregnant horn around mid-pregnancy resulting in serious maternal hemorrhage.<sup>[3]</sup> Early diagnosis is, therefore critical in order to avoid life-threatening complications.

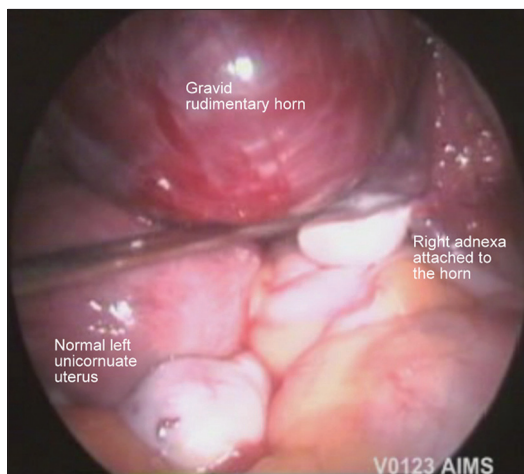
Diagnosis of this uncommon ectopic pregnancy can prove elusive, as it is usually asymptomatic in the first trimester. Careful ultrasound examination and



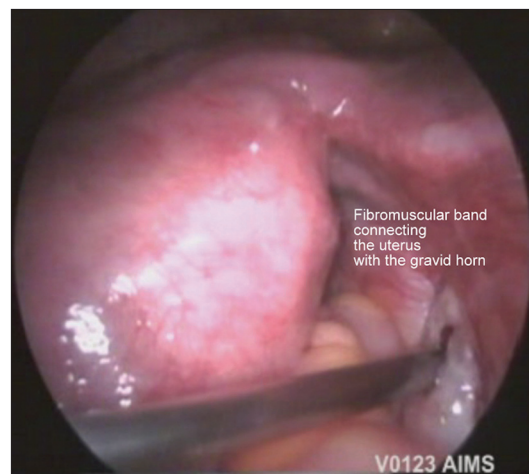
**Figure 1a:** Transabdominal ultrasound picture



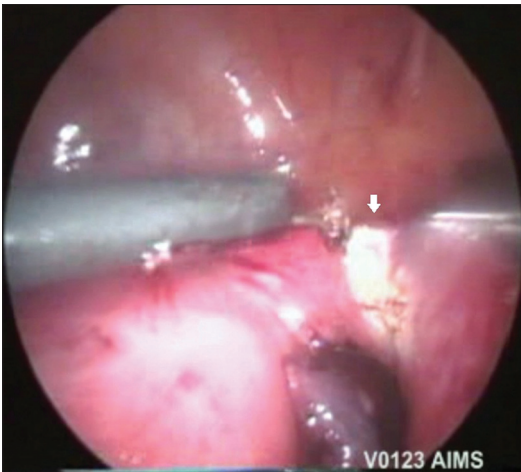
**Figure 1b:** Transverse section of the empty uterine cavity



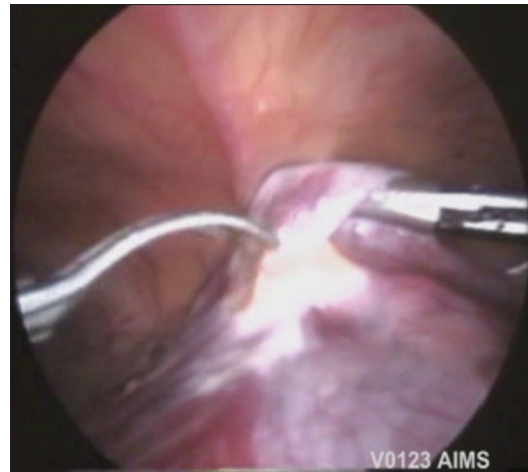
**Figure 2:** Laparoscopic view showing anatomic relationships of the gravid rudimentary horn



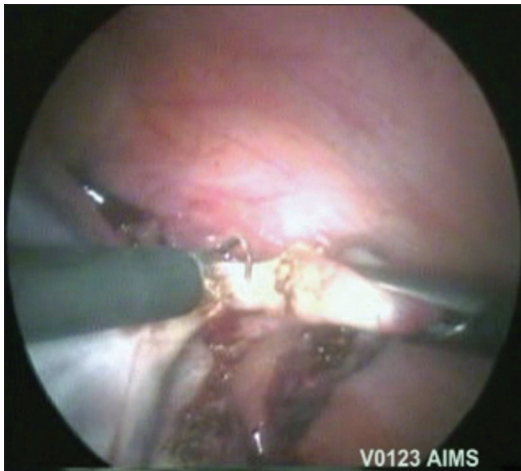
**Figure 3a:** Fibromuscular attachment between the left unicornuate uterus and the pregnant rudimentary horn



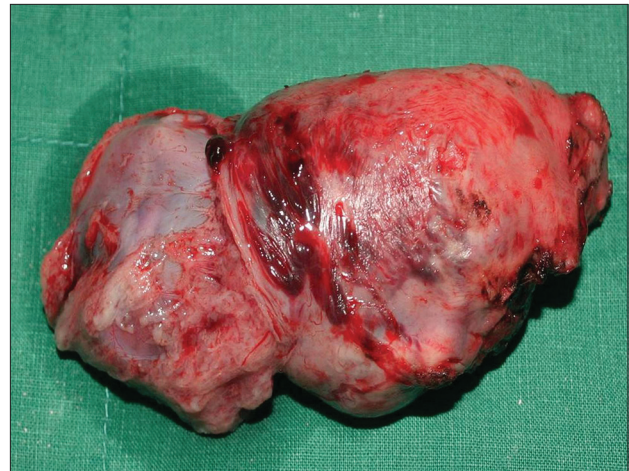
**Figure 3b:** Fibromuscular band being divided



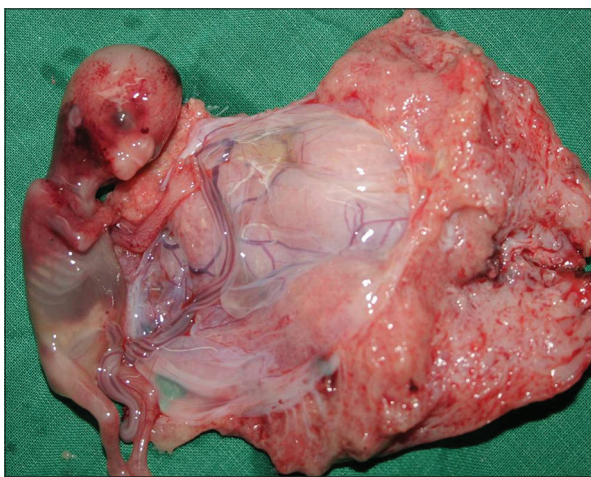
**Figure 4a:** Lateral attachments of the horn to round ligament



**Figure 4b:** Tubal attachment



**Figure 5a:** Intact specimen of rudimentary horn pregnancy



**Figure 5b:** Cut section of resected specimen

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.<sup>[5]</sup> Pre-operative 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.<sup>[6-8]</sup> Tracking the course of ureter on the side of the horn at the commencement of surgery and instillation

MRI are useful in establishing the diagnosis. USG criteria for sonographic diagnosis of RHP have been clearly defined and include (a) pseudopattern

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.<sup>[9]</sup> 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,<sup>[10]</sup> can be used for surgery depending upon the availability and surgeon's expertise.

### 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 post-operative 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 RHP.

### REFERENCES

1. Johansen K. Pregnancy in a rudimentary horn. Two case reports. *Obstet Gynecol* 1969;34:805-8.
2. Nahum GG. Rudimentary uterine horn pregnancy. A case report on surviving twins delivered eight days apart. *J Reprod Med* 1997; 42:525-32.
3. O'leary JL, O'leary JA. Rudimentary horn pregnancy. *Obstet Gynecol* 1963;22:371-5.
4. Nahum GG. Rudimentary uterine horn pregnancy. The 20<sup>th</sup>-century worldwide experience of 588 cases. *J Reprod Med* 2002;47:151-63.
5. Tsafirir A, Rojansky N, Sela HY, Gomori JM, Nadjari M. Rudimentary horn pregnancy: First-trimester prerupture sonographic diagnosis and confirmation by magnetic resonance imaging. *J Ultrasound Med* 2005;24:219-23.
6. Yan CM. Laparoscopic management of three rare types of ectopic pregnancy. *Hong Kong Med J* 2010;16:132-6.
7. Giatras K, Licciardi FL, Grifo JA. Laparoscopic resection of a noncommunicating rudimentary uterine horn. *J Am Assoc Gynecol Laparosc* 1997;4:491-3.
8. Dicker D, Nitke S, Shoenfeld A, Fish B, Meizner I, Ben-Rafael Z. Laparoscopic management of rudimentary horn pregnancy. *Hum Reprod* 1998;13:2643-4.
9. Falcone T, Gidwani G, Paraiso M, Beverly C, Goldberg J. Anatomical variation in the rudimentary horns of a unicornuate uterus: Implications for laparoscopic surgery. *Hum Reprod* 1997;12:263-5.
10. Yahata T, Kurabayashi T, Ueda H, Kodama S, Chihara T, Tanaka K. Laparoscopic management of rudimentary horn pregnancy. A case report. *J Reprod Med* 1998;43:223-6.

**How to cite this article:** Sharma D, Usha MG, Gaikwad R, Sudha S. Laparoscopic resection of unruptured rudimentary horn pregnancy. *J Gynec Endosc Surg* 2011;2:101-4.

**Source of Support:** Nil. **Conflict of Interest:** None declared.