



A CASE REPORT OF PREGNANCY IN NONCOMMUNICATING RUDIMENTARY HORN OF UTERUS

Obstetrics & Gynaecology

Dr Snehal Ashok Randive*

Junior Resident, Department of Obstetrics and Gynaecology, SVNGMC, Yawatmal.
*Corresponding Author

Dr Atul Padmawar

Associate Professor, Department of Obstetrics and Gynaecology, SVNGMC, Yawatmal.

Dr Kshama Kedar

Professor and Head of Department, Department of Obstetrics and Gynaecology, SVNGMC, Yawatmal.

ABSTRACT

Background: A uni-cornuate uterus with a rudimentary horn is a uterine anomaly resulting from the incomplete development of one of the müllerian ducts and an incomplete fusion with the contralateral side. Pregnancy in a rudimentary horn of the uterus is a rare clinical condition with a reported incidence of 1 in 100,000 to 140,000 pregnancies. Usually, the diagnosis is missed and may present as an emergency with haemoperitoneum. The standard treatment is the surgical excision of the horn. **Case Report:** A gravida 3, para 2, live2 patient presented at 11.5 weeks' gestation with scan suggestive of right sided live ectopic pregnancy in the non-communicating rudimentary horn of uterus which had been detected on routine antenatal ultrasound. She underwent an exploratory laparotomy and the pregnancy was found in the right non-communicating rudimentary horn of the uterus with right rudimentary horn excision. The final diagnosis of a non-communicating rudimentary horn pregnancy was made intraoperatively. **Conclusion:** This case highlights the importance of an early ultrasound in detecting uterine anomalies and the need for high clinical suspicion.

KEYWORDS

Uterus, abnormalities; Pregnancy; Ultrasonography; Magnetic Resonance Imaging; Laparotomy.

INTRODUCTION:

Pregnancy in a rudimentary uterine horn is a rare condition that can lead to a catastrophic outcome when it ruptures. The majority of cases are diagnosed late, after the rupture occurred. The use of ultrasonography helps clinicians to diagnose uterine malformations earlier, which can then be confirmed by a magnetic resonance image (MRI) or a laparoscopy. The standard treatment for a rudimentary horn pregnancy is surgical excision to prevent complications and recurrence⁽¹⁾.

A rudimentary horn pregnancy occurs when a fertilised egg implants and grows in a part of the uterus that is underdeveloped. This underdeveloped part of the uterus is called rudimentary horn of a uterus. Rudimentary horn pregnancy is an extremely rare type of ectopic pregnancy with a reported incidence of 1 in 100,000- 140,000 pregnancies. 85% of rudimentary horn pregnancies occur in noncommunicating rudimentary horn⁽²⁾.

The mechanism of pregnancy occurring in the non-communicating rudimentary horn is assumed to be by migration of either the fertilised ovum or the spermatozoa from the tube on the opposite side of the pelvis, then implanting in the rudimentary horn⁽³⁾. A rudimentary horn pregnancy does not always cause symptoms and may only be detected during a routine pregnancy scan⁽⁴⁾.

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CASE REPORT

History:

A 26-year-old female presented at 11.5 weeks of gestation came to Shri Vasantrao Naik Government Medical College and Hospital, Yawatmal with scan suggestive of right sided live ectopic pregnancy in the non-communicating rudimentary horn which had been detected on a routine antenatal ultrasound. There was no history of abdominal pain or vaginal blood loss at any time.

The patient was gravida 3, para 2, live 2, with previous both vaginal delivery at term. Her last vaginal delivery approximately 3 years back. There was no significant past medical or surgical history. She had normal menstrual periods with no history of dysmenorrhoea.

Clinical Examination:

At admission, the patient's general condition was good and her vital signs were normal. A physical examination of the abdomen revealed a

relaxed, non-tender.

Abdominal USG:

Transabdominal ultrasound showed a single, chorionic cavity in the right adnexa with live fetus. The amniotic fluid was normal and the placenta was posterior in the cavity. She was diagnosed with right sided ectopic pregnancy in noncommunicating rudimentary horn of uterus. A decision was made for exploratory laparotomy. A complete blood count and coagulation profile were normal. Her blood group was positive.

Surgical Intervention:

The patient underwent exploratory laparotomy with pfannenstiel incision given over lower abdominal wall. The findings included a normal uterus with a normal ovary and fallopian tube on the left side. The pregnancy was in a rudimentary horn on the right side, with a normal ovary and fallopian tube.

The horn was connected to the uterus just above the cervix by a thick fibrous band. A small incision was made over the pregnant horn and a right sided ectopic delivered. The horn was then excised, along with the right ovary. The patient lost 200 ml of blood.

Post-operative Outcome:

The post-operative period was uneventful and the patient was discharged on the fourth day.

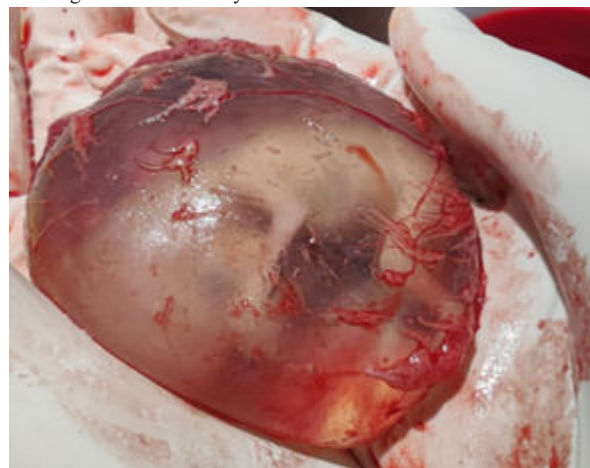


Fig 1. Foetus with intact amniotic sac in non-communicating Horn of uterus



Fig 2. Foetus With Umbilical Cord And Placenta (~12 Weeks Of Gestation)

DISCUSSION:

Uterine anomalies result from the failure of complete fusion of the Müllerian ducts during embryogenesis. The incidence in the general population is estimated to be 4.3%⁽¹⁾. A unicornuate uterus with a rudimentary horn is the rarest anomaly and results from the failure of one of the Müllerian ducts to develop completely and an incomplete fusion with the contralateral side⁽²⁾.

The incidence of this anomaly is approximately 0.4%. In the majority (83%) of cases, the rudimentary horn is non-communicating⁽²⁾. The anatomical variations of a rudimentary horn serve as the basis for the classification of a unicornuate uterus by the American Society of Reproductive Medicine (ASRM). Acien *et al.* Performed a systematic review to analyse the classification systems for uterine anomalies and concluded that an embryological clinical classification system seemed to be the most appropriate^(3,4). This paper presents a case from class I, and would be classified as class IIB according to the ASRM.

Pregnancy in a rudimentary horn was first described by Mauriceau and Vassal in 1669⁽⁵⁾. The reported incidence is 1 in 100,000 to 140,000 pregnancies⁽⁶⁾. The most accepted explanation is the transperitoneal migration of the sperm cells or a fertilised ovum^(1,2,6). This explanation was supported by the observation of the *corpus luteum* in the contralateral ovary. It is extremely uncommon for such cases to result in a viable baby. These cases usually result in the rupture of the horn in the second or third trimester, typically between the 10th and 20th week of gestation, although a rupture has been reported at 34 weeks^(7,8). Only 10% of cases such as these reach term, and the fetal salvage rate is only 2%⁽⁶⁾.

The rupture occurs because of the underdevelopment of the myometrium and a dysfunctional endometrium. A rudimentary horn pregnancy can be further complicated by *placenta percreta* due to the poorly developed musculature and the small size of the horn; the reported incidence is 11.9%⁽⁹⁾. *Placenta percreta* can be confirmed by a histopathology examination from as early as seven weeks⁽⁹⁾.

The key for diagnosis prior to the rupture is a high index of clinical suspicion. A history of severe dysmenorrhoea may be a clue for diagnosis. However, the rudimentary horn may be underdeveloped and its endometrium nonfunctional, so dysmenorrhoea may be absent. A

careful pelvic examination in the first trimester showing a deviated uterus with a palpable adnexal mass should provoke suspicion of a Müllerian anomaly. It can be confirmed by an ultrasound or MRI. Tsafirir *et al.* Suggested the following criteria for diagnosing a pregnancy in the rudimentary horn: (1) a pseudo pattern of asymmetrical bicornuate uterus; (2) absent visual continuity between the cervical canal and the lumen of the pregnant horn, and (3) the presence of myometrial tissue surrounding the gestational sac^(12,10). Ultrasound sensitivity remains only 26%. The enlarging horn with the thinned myometrium can obscure the adjacent anatomical structures and the sensitivity further decreases as the gestation progresses. MRI has proven to be a very useful diagnostic tool.

Approximately 38% of patients have coexisting renal abnormalities. Unilateral renal agenesis is most commonly found; this is always ipsilateral with the rudimentary horn⁽¹¹⁾. The differential diagnosis includes a tubal, corneal or intrauterine pregnancy in a bicornuate uterus. Ultrasonographical features may help to reach diagnosis, as in the following examples. A tubal pregnancy will not show a ring of the myometrium surrounding the gestational sac. A variation in the thickness of the myometrium in two horns and a marked distance between them favour the diagnosis of a rudimentary horn pregnancy. The continuity between the endometrium lining the gestational sac and the other uterine horn is typical for a pregnancy in a bicornuate uterus⁽¹⁰⁾.

Immediate surgery is recommended whenever a diagnosis of a pregnancy in the rudimentary horn is made. The traditional treatment is a laparotomy and the surgical removal of the pregnant horn to prevent rupture and recurrent rudimentary horn pregnancies. In recent years, several cases have been treated successfully by laparoscopies using various techniques. Some authors have described systemic methotrexate administration or feticide with intracardiac potassium chloride as alternatives or adjuncts to surgery in early gestation⁽⁹⁾. Conservative management, until viability is established, has been advocated in selected cases with large myometrial masses. Emergency surgery can be performed at any time. In all such cases, the patient should be informed of the risks of the condition as well as their management options.

CONCLUSION

Despite advances in ultrasound technology, the antenatal diagnosis of a rudimentary horn pregnancy remains difficult for inexperienced physicians. A high index of clinical suspicion for uterine malformations early in the gestation can reduce the mortality rate, along with early intervention. When a rudimentary horn pregnancy is diagnosed, the excision of the horn with ipsilateral salpingectomy is the recommended surgical treatment for the best prognosis. This case highlights the need for high clinical suspicion of this rare condition.

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