

**Case Report** 

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# A Rare Case of Recurrent Non-Communicating Rudimentary Horn Pregnancy

M Tiwari, B Subba, W Yoong and A Adewale\*

#### \*Corresponding author

A Adewale, Department of Obstetrics and Gynaecology, North Middlesex University Hospital, London; E-mail: a.adeyemo@nhs.net

Department of Obstetrics and Gynaecology

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#### Abstract

**Introduction:** A unicornuate 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. It carries grave consequences for the mother and fetus as the diagnosis may be missed and subsequently result in an emergency due to spontaneous rupture of the enlarging rudimentary horn and massive intraabdominal bleeding. The standard treatment is the surgical excision of the rudimentary horn.

The authors present a case of a rare recurrent rudimentary horn pregnancy that contained a viable pregnancy diagnosed in first trimester and managed with complete excision of the rudimentary horn along with the pregnancy in-situ.

## Case

A 29 year-old woman presented to a teaching hospital in her index pregnancy for routine dating and nuchal scan at 12 weeks gestation in her third pregnancy, during which a rudimentary horn pregnancy was suspected. In her first pregnancy, real time pelvic ultrasound and Magnetic Resonance Impedance (MRI) scan showed a bicornuate uterus with no obvious communication between the cervix and the left horn. At 12 weeks of gestation, she then underwent a laparotomy and the pregnancy was excised via a fundal incision in the left rudimentary uterine horn, which was left in situ. Her second pregnancy concluded in a complete miscarriage at 8 weeks gestation.

A repeat confirmatory scan was sought at a tertiary referral centre and this confirmed a non-communicating rudimentary left uterine horn live ectopic pregnancy. In view of the significant risk of rudimentary horn rupture with massive intraperitoneal bleeding, a laparotomy was scheduled. At laparotomy, the rudimentary horn was attached to the unicornuate uterus by a wide band of myometrial tissue which was divided and rudimentary horn along with pregnancy in situ was removed.



**Figure 1:** Transvaginal ultrasound scan showing live rudimentary horn pregnancy with thick myometrium around the fetus

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**Figure 2:** pregnant rudimentary left uterine horn (A) attached to the right unicornuate horn (B) with the previous fundal incision scar visible on left uterine horn







## Discussion

Rudimentary horn with a unicornuate uterus results from failure of complete development of one of the Mullerian ducts and incomplete fusion with the contralateral side and is non-communicating in 83% of cases [1]. Several theories have been proposed to explain the pathogenesis of this condition: one postulates the transperitoneal migration of sperm or fertilized ovum while another, by Latto and Norman suggests that there are microscopic channels between the unicornuate endometrial cavity and the rudimentary horn cavity, which enables the passage of sperm into the rudimentary horn [2,3]. Although the incidence of rudimentary horn pregnancy is relatively small, the risk of serious maternal morbidity and mortality is high and early diagnosis is very crucial.

The following three criteria have been suggested by Tsafri et al for sonographic diagnosis of rudimentary horn pregnancy [4]: (1) pseudo pattern of an 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.

The sensitivity of ultrasound diagnostic is about 26% as the enlarging horn with the thinned myometrium can obscure the adjacent anatomical structures; furthermore, the sensitivity decreases with progressing gestation. MRI has proven to be a very useful additional diagnostic tool although whether this modality actually improves diagnostic accuracy is unclear [5-7].

These cases usually result in the rupture of the horn in the second or early third trimester, typically between the 10th and 20th week of gestation, although rupture has been reported as late as 34 weeks [8,9]. Only 10% of cases reach term and the fetal salvage rate is only 2% [10].

Immediate surgery is recommended whenever a diagnosis of a pregnancy in the rudimentary horn is made. Although traditional treatment is a laparotomy and the surgical removal of the pregnant horn (in order to prevent rupture and recurrent rudimentary horn pregnancies), operative laparoscopy has been used successfully in recent years to achieve this [10]. Systemic methotrexate administration or feticide with intracardiac potassium chloride has also been reported as alternatives or adjuncts to surgery in early gestation (ref). Conservative management, until viability is established, has been advocated in selected cases with large myometrial masses. In all such cases, the patient should be informed of the risks of the condition as well as their management options.

Following excision of a rudimentary uterine horn, management of future pregnancies in the unicornuate horn should be in a consultant led unit. Decision about mode of delivery should be based on the nature of excision of the rudimentary horn. If the excision of rudimentary horn is done through the fibromuscular band and with full thickness of the unicornuate musculature left intact with no breach in the unicornuate endometrial cavity; the woman may be given the chance of normal vaginal delivery.

#### Conclusion

Rudimentary horn pregnancy is a rare phenomenon but can be life threatening if not diagnosed timely. This is particularly more important in the case of a recurrence where the rudimentary horn had not been excised in the past as healthcare professionals may be falsely reassured that it is a bicornuate uterus. Strong clinical suspicion with imaging modalities including ultrasound and MRI are helpful in early diagnosis. Laparotomy with removal of rudimentary horn along with pregnancy is the management of choice to prevent recurrent rudimentary horn pregnancy.

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