Rudimentary Horn Pregnancy-Prerupture Diagnosis and Management

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Abstract

Pregnancy in rudimentary horn is rare and carries grave consequences to the mother and the fetus. Rudimentary horn is a developmental anomaly of the uterus, and pregnancy in non-communicating rudimentary horn is extremely rare. Diagnosis prior to rupture is unusual. However with the advent of investigative methods such as ultrasound scan, CT scan, MRI and laparoscopy, the diagnosis is more often being made before rupture.

ABBREVIATIONS

RHP: Rudimentary Horn Pregnancy; GA: Gestational Age

INTRODUCTION

Mullerian anomalies were classified in 1979 by Buttram and Gibson and further revised by the American Society of Reproductive Medicine in 1988. Unicornuate uterus is a type 2 classifications with unilateral hypoplasia or agenesis that can be further sub classified into communicating, non-communicating, no cavity, and no horn [1]. By ESHRE classification it is U4a type (Hemi uterus with rudimentary cavity). The incidence of mullerian duct malformation in the general population is estimated to be 4.3% while that of unicornuate uterus is about 0.4% [2]. Rudimentary horn pregnancy occurs in approximately 1/760,000 to 1/150,000 pregnancies [3,4]. 72-85% of the rudimentary horns are no communicating with the cavity [5].

CASE PRESENTATION

A 25 yr old, gravida 3, para2, two preterm deliveries at home at 7 months of GA with 14 wks pregnancy came to the OPD with USG report s/o ?ectopic gestation of 13.4 weeks, ? Cornual pregnancy? Mostly in the right rudimentary horn / Right tube / abdomen. She had no complains. On per abdominal examination uterus around 14-16 weeks size and relaxed. Per vaginal examination bicornuate uterus felt with ?pregnancy in right horn which was enlarged up to 14-16 weeks, non tender; left horn felt separately, bulky. She was admitted. All laboratory investigations were within normal limits. A MRI was performed and the findings were as follows: MRI showed a fetus outside the uterus within a clearly defined gestational sac. The placenta was seen with definitive borders located in the posterior part of the sac. No signs of placental invasion of the neighboring structures were observed. Myometrial tissue was seen surrounding the gestational sac. Tubular structure was seen along inferior aspect of the sac with communication with the uterus. Right fallopian tube was not seen separately. Single vagina and cervix was seen communicating with uterine cavity. There were no urologic anomalies (Figure 1). Diagnosis of RHP was established.

Preoperative fitness was done and patient was planned for exploratory laparotomy. On laparotomy uterus with two horns separated by 4*2cm musculo-fibrous band with pregnancy in the right horn which was enlarged up to 14 weeks size was seen. Left horn was enlarged and bulky (Figure 2). Right tube and ovary was attached to the right horn of the uterus. Left tube and ovary was attached to the left horn.

The musculo-fibrous band was cut and transfixed with vicryl no.1-0. Right tuboovarian ligament clamped, cut, and transfixed with vicryl no. 1-0. Homeostasis confirmed and abdomen closed in layers. The patient’s post operative recovery was normal. She was discharged on the 8th post operative day.

DISCUSSION

A rudimentary horn with a unicornuate uterus results from failure of complete development of one of the mullerian ducts and incomplete fusion with the contra lateral side. Pregnancy in no communicating rudimentary horn occurs through transperitoneal migration of sperm or fertilized ovum [6] (Figure 3).

Although the incidence of RHP is relatively small, the risk of serious maternal morbidity and mortality is high. Early prerupture
diagnosis is therefore very important. The following criteria have been suggested by Tsafri et al for sonographic diagnosis of RHP [7]: pseudo pattern of an asymmetrical bicornuate uterus, absent visual continuity between the cervical canal and the lumen of pregnant horn, and the presence of Myometrial tissue surrounding the gestational sac.

The timing of rupture varies from 5 to 35 weeks depending on the horn musculature and its ability to hypertrophy and dilate. 79-90% ruptures before 20 weeks and can be catastrophic. As the uterine wall is thicker and more vascular, bleeding is more severe in rudimentary horn pregnancy rupture. Maternal mortality rate of rudimentary horn pregnancies are always associated with catastrophic outcome, effort should be made to diagnose them at an early gestation by an ultrasound though the sensitivity remains only 26% [7]. In our case the diagnosis of RHP was challenging, intra uterine pregnancies in a bicornuate uterus, ectopic pregnancy like tubal pregnancy, Cornual pregnancy are common sonographic differential diagnosis. The continuity between the endometrial lining the gestational sac and the other uterine horn is typical of pregnancy in a bicornuate uterus. Ectopic pregnancies beyond 12 weeks of gestation are rarely tubal. In Cornual pregnancy, sonography will reveal an interstitial line that extends from the uterine cavity to the Cornual gestational sac. The previous two small for gestation babies in her obstetric history raised the possibility of uterine malformation. The sonographic criteria for the diagnosis of RHP described by Tsafri et al applies to early pregnancy and defining the Myometrial tissue surrounding the gestational sac was difficult in the second trimester in this patient. So MRI was performed. It also helps to exclude the associated renal anomalies like renal agenesis, horseshoe kidney and ipsilateral kidney. For anomalies requiring surgery MRI demonstrated 100% sensitivity and specificity [8].

CONCLUSION

The routine ultrasound in the first trimester as soon as patient misses the period or around 11-12 weeks is very useful in early diagnosis of rudimentary horn pregnancy. It is recommended that immediate surgery should be performed whenever a diagnosis of pregnancy in rudimentary horn is made even if unruptured as timing of rupture depends on the thickness of horn musculature and once it ruptures it leads to catastrophic haemoperitoneum. Thus I conclude that high clinical suspicion, early diagnosis and timely laparotomy can reduce the grave risk to the mother. When diagnosed in early gestation, excision of the rudimentary horn is the recommended surgical treatment and provides the best prognosis as was performed in our case.

REFERENCES


