An Unusual Case of Rudimentary Uterine Horn Ectopic Pregnancy

Dear Editor,

The incidence of ectopic pregnancy is approximately 11.1 per 1000 pregnancies. Radiological detection of ectopic pregnancies within the fallopian tubes has always been a challenge for obstetricians and sonographers. Presence of congenital malformations will present additional challenges due to their variations and rarity.

Case Report

A 23-year-old single lady was referred to our institution's Emergency Department for the suspicion of ectopic pregnancy after an ultrasound scan performed by a private practitioner. She had initially requested for a termination of pregnancy. At 10 weeks amenorrhoea, she did not have any abnormal symptoms such as abdominal pain or vaginal bleeding. A transvaginal pelvic ultrasound was performed which demonstrated the presence of a gestational sac containing a fetus measuring 33 mm via crown-rump length located superior to the uterine fundus next to the right adnexal region. No intrauterine pregnancy was seen. This "extra-gestational fetus" corresponded to 10 week-size with a fetal heart rate of 175 beats per minute (Fig. 1). There were no other pelvic masses nor fluid within the Pouch of Douglas. Differential diagnoses included tubal ectopic pregnancy and uterine cornual interstitial pregnancy.

In view of the substantial size of the ectopic pregnancy, decision was made to remove it surgically via laparoscopic excision or salpingectomy. Intra-operatively, there was the presence of a unicornuate uterus which was deviated to the right by a large 10 week-size left adnexal mass (Fig. 2). This left adnexal mass appeared to be connected to the unicornuate uterus by a thin fibrous strand, and the left fallopian tube was traced to be seen arising from this adnexal mass (Figs. 3 and 4). On the other side, the unicornuate uterus gave rise to the right fallopian tube but was not linked to the left fallopian tube. Both the ovaries and fallopian tubes appeared normal otherwise. The left adnexal mass was diagnosed a rudimentary horn ectopic pregnancy upon laparoscopic excision and retrieval, when the fetus was found within. The ectopic specimen was retrieved using an Endo Catch™ bag. Meanwhile, both the ureters were traced which were normal in anatomy. Moreover, vaginal examination of the cervix and vagina established the presence of only one vagina and one cervix with the endocervical canal leading into the unicornuate uterine cavity. The post-operative recovery was uneventful.

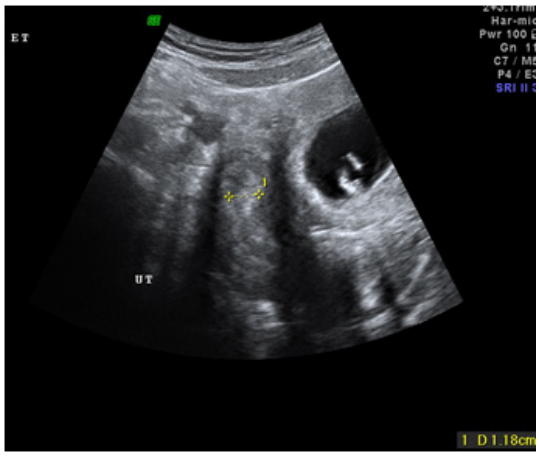

Fig. 1. Ectopic pregnancy adjacent to the uterus.

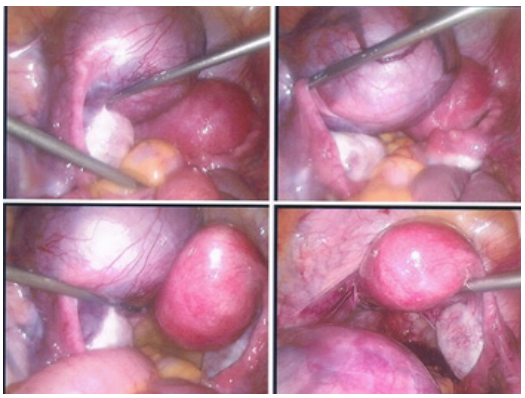

Fig. 2. Laparoscopy showing the unicornuate uterus and the rudimentary horn ectopic pregnancy on the left of the unicornuate uterus. The unicornuate uterus is attached to the right ovary and fallopian tube.

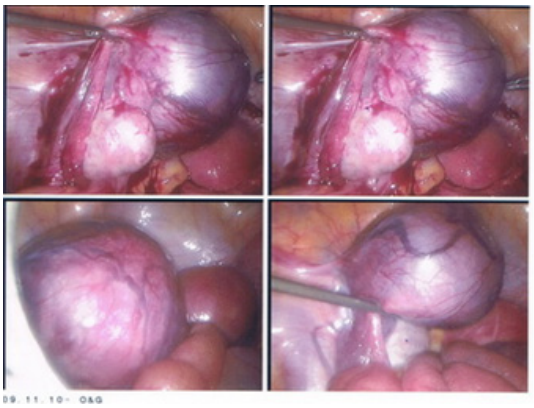

Fig. 3. Laparoscopy showing the rudimentary horn containing the ectopic pregnancy being attached to the left fallopian tube and ovary.

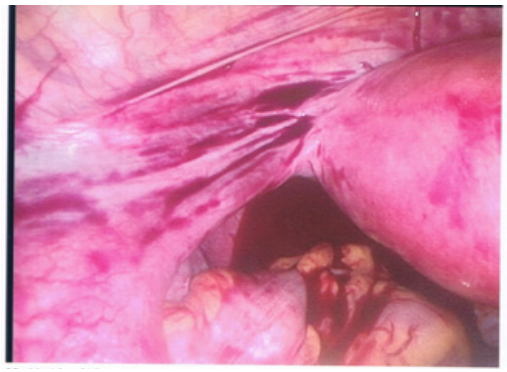

Fig. 4. Laparoscopy showing the remnant connection between the unicornuate uterus (right side) and the rudimentary horn ectopic pregnancy (left side).

Interestingly, the histopathological result of the specimen revealed the presence of a fetus measuring 4 cm in size enveloped in myometrial tissue together with implantation site, villous and trophoblastic tissue. This finding confirmed the diagnosis of a rudimentary horn pregnancy of a unicornuate uterus.

Discussion

A unicornuate uterus is a rare congenital malformation of the female genital tract (incidence of 1 in 76,000 to 150,000) and is characterised by significant anatomic variability. In the most common type, a non-communicating rudimentary horn (83% of cases) coexists with the unicornuate uterus.[1,2] As a result, the diagnosis of a rudimentary horn ectopic pregnancy is usually delayed as the presentation is atypical in nature. Sometimes, this may even manifest only in the second trimester.[2] Pregnancy in a non-communicating rudimentary horn may occur through a phenomenon described as trans-peritoneal migration of sperm or fertilised ovum from the patent contralateral fallopian tube.[3] Such pregnancies are associated with high rates of spontaneous abortion, intra-peritoneal hemorrhage and uterine rupture.[4] In the literature, although up to 30% of these rudimentary horn pregnancies managed to progress to term, the overall newborn survival rates remained low, ranging from 0 to 13%. Fifty percent of pregnant uterine horns ruptured, with 80% of these events occurring before the third trimester. Hence, this trend was associated with significant maternal mortality, which ranged from 6% to 23%.[4]

Due to the difficulty in diagnosis, Tsafrir *et al* outlined a set of criteria for diagnosing pregnancy in the rudimentary horn.[5] These include:

(1) Pseudo pattern of asymmetrical bicornuate uterus

(2) Absent visual continuity between the lumen surrounding the gestation sac and the uterine cervical canal

(3) Presence of myometrial tissue surrounding the gestation sac

Nonetheless, the sensitivity of sonography was only shown to be 26% in one review. Magnetic resonance imaging has proven to be a useful tool for diagnosing a rudimentary horn using coronal, sagittal, and axial planes to assess the uterine connection to the horn, and either confirm or rule out a cavitary communication.[5]

The initial diagnosis for our patient via sonography was that of a tubal ectopic pregnancy. A laparoscopic excision of the rudimentary horn ectopic pregnancy was performed in view of the size and the potential risks of rupture with haemorrhage. Laparoscopy was chosen as this produced anatomical and reproductive results equivalent to those offered by a laparotomy approach, but with the additional advantage of minimally invasive surgery, that is less scarring and a shorter post-operative recovery. Excision of the rudimentary horn and ipsilateral salpingectomy, preferably conserving the ovary, is the surgical procedure recommended for patients desiring to preserve their fertility.

In conclusion, successful management of such atypical ectopic pregnancies to prevent maternal morbidity and mortality lies in early diagnosis before rupture occurs, followed by prompt surgical intervention.

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