Interstitial Pregnancy

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Abstract: Interstitial pregnancy is a rare variety of ectopic gestation that accounts for no more than 2% to 4% of all ectopic pregnancy. The developing chorionic villi may eventually erode into the blood vessels of the uterine cornu, causing a severe hemorrhage. Three-dimensional ultrasound is more useful to arrive at diagnosis. Treatment options for interstitial ectopic pregnancy include local injection or systemic therapy with methotrexate, conservative laparoscopic surgery and uterine artery embolism and in emergency situations, cornuectomy or hysterectomy.

Introduction
Interstitial pregnancy is a rare condition that accounts for no more than 2% to 4% of all ectopic gestations.1, 2, 3 The incidence is once every 2,500 to 5,000 live births.4

Case report
A 28 years old, G2P0A1, had presented on 10th Dec.2011 with 1 month and 20 days amenorrhea for confirmation of pregnancy. No complaints. General and systemic examination was normal. A bimanual examination revealed normal sized uterus and absence of any mass or tenderness in pelvis. Urine test was positive for pregnancy. TVS was suggestive of empty uterine cavity but small gestational sac of five weeks maturity located in the right cornu region surrounded all around by myometrium. Both adnexa were normal. So diagnosis of interstitial pregnancy was kept.

Her beta hCG report on the same day was 2259 mlU/ml. The couple was counseled regarding management and opted for medical management with methotrexate. She was given inj.methotrexate IM on days 1,3,5,7 at 1mg/kg with inj. Leucovorin factor on alternate days. Her beta hCG report on day eight was 10,159 mlU/ml. TVS was suggestive of empty uterine cavity but small gestational sac of five weeks maturity located in the right cornu region surrounded all around by myometrium. Both adnexa were normal. So diagnosis of interstitial pregnancy was kept.

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Discussion
Interstitial pregnancy occurs when an embryo implants in the lateral angle of the uterine cavity medial to the internal ostium of the fallopian tube. Because the gestational sac is better protected in the interstitial than in other portions of the tube, the symptoms of interstitial ectopic pregnancies may manifest later (>12 gestational weeks). Because the pregnancy occurs at the most richly vascularized area of the female pelvis, the junction of the uterine and ovarian vessels, rupture usually causes profound and sudden shock. Before 1893, the only available reports on interstitial pregnancies were from autopsies. Since then, numerous cases have been reported. Most of the risk factors for interstitial pregnancy are similar to those for ectopic pregnancy in general, including PID, previous pelvic surgery and the use of assisted reproductive technologies. Earlier diagnosis and more experience in treating this disorder have reduced the present maternal mortality rate to approximately 2% to 2.5% of all interstitial pregnancies.

The presentation of interstitial pregnancy often includes acute abdominal pain, intraperitoneal bleeding, a low hematocrit, and a positive serum or urine pregnancy test. Diagnostic tests include the sensitive beta hCG immunoassay and vaginal ultrasonography. Asymmetry of the uterus, often indicative of an interstitial pregnancy, can be misinterpreted as a pregnancy in a bicornuate uterus or a myoma in a pregnant uterus instead of an interstitial pregnancy. Timor-Tritsch and colleagues established transvaginal ultrasonic criteria for interstitial pregnancy. These criteria include: (a) an empty uterine cavity, (b) a chorionic sac seen separately and >1 cm from the most lateral edge of the uterine cavity, and (c) a thick myometrial layer surrounding the chorionic sac. All of these parameters were relatively specific (88% to 93%), but lacked high sensitivity (only about 40%) for the diagnosis of interstitial pregnancy. Other investigators have described an interstitial line sign. This sign refers to the visualization of an echogenic line extending from the endometrial cavity into the cornual region and abutting the interstitial mass or gestational sac. Ackerman and associates reported that the interstitial line sign was 80% sensitive and 98% specific for the diagnosis of interstitial pregnancy. Nowadays, 3-D ultrasound is more useful to arrive at diagnosis.

The choice of treatment depends on the extent and site of pathology, size of gestational sac, wishes for preservation of fertility and surgeon’s experience. Treatment options for interstitial ectopic pregnancy include local injection or systemic therapy with methotrexate, conservative laparoscopic surgery and uterine artery embolism and in emergency situations, cornuectomy or hysterectomy. An overall success rate of 83% has been reported with methotrexate therapy. Conservative surgery is cornuostomy either laparoscopic or laparotomy. Risk of uterine rupture in future pregnancy should be kept in mind during conservative surgery. Rupture of interstitial pregnancy leads to massive hemorrhage which may require cornuectomy or hysterectomy.

Conclusion
Interstitial pregnancy is a rare variety of ectopic pregnancy. Early diagnosis and management prevents morbidity and mortality.

References

Figure is suggestive of right interstitial pregnancy.