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Interstitial Pregnancy

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This report describes a case of interstitial pregnancy which was diagnosed at six weeks of gestation and treated surgically by excision. Initially, the signs and symptom were rather confusing, but the diagnosis was eventually made using ultrasound scanning. The patient was treated by excising the site of the interstitial pregnancy. The patient made a good recovery and was discharged home. Because of the question of future reproduction in such cases we have discussed alternative, minimal invasive techniques such as laparoscopic removal with or without arterial embolization, medical treatment with methotrexate or local injection with potassium hydroxide. This case was reported because it is rare, difficult to diagnose, and because modern treatment has less adverse effects on future fertility.

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Ectopic pregnancy occurs when implantation of the blastocyst take place in a location other than the endometrial lining. In more than 95 % of such cases, the implantation site is in the fallopian tube, usually in the ampullary region[1]. However, when the implantation is located in the interstitial portion of the fallopian tube it is called interstitial pregnancy. This implantation is the rarest form of ectopic gestation, with an estimated incidence of 1 in 2,500-5,000 live birth[2] (Fig. 1).

Figure 1

While some consider the terms interstitial and cornual pregnancies to be synonymous, others reserve the term cornual pregnancy for a gestation in one horn of a bicornuate or septate uterus. Interstitial pregnancy occurs when the gestation implants is in the interstitial part of the fallopian tube, and differs from cornual pregnancy which develops in the cornua of the uterus. Angular pregnancy refers to pregnancy which originates in the interstitial portion and grows into the adjacent uterine cavity [3-4].

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The interstitial portion of the fallopian tube is a highly vascularized, muscular site that offers more support and distensibility to the embryo than any other portion of the fallopian tube. These anatomic features allow the gestation to advance much further than when the embryo implants in other portion of the tube. When it ruptures, usually there is disproportionately high incidence of hemoperitonium and shock, and the mortality rate is approximately twice that of other types of ectopic pregnancy*.

In the Department of Obstetrics and Gynecology of the Salmaniya Medical Complex in Bahrain, only one case of interstitial pregnancy was seen in the past 5 years, which suggests a relatively lower incidence locally compared with figures quoted in Western reports[5].

The aim of this paper is to report a case of interstitial pregnancy which was diagnosed at six weeks of gestation and was treated surgically.

THE CASE

A twenty-nine year old, Asian woman G2 P1 Ab 0, was admitted through accident and emergency department with a history of amenorrhea of six weeks duration terminating into a spontaneous blood spotting, which commenced two hours prior to admission. There was no history of pain. A pregnancy test was done a week prior to admission and found to be positive. Her menstrual cycle before the pregnancy was irregular. She had no previous ectopic, surgical or medical illness.

The vital signs were normal and examination of the cardiovascular, respiratory, gastrointestinal and urinary systems revealed no abnormality. On pelvic examination, a slight blood spotting was observed. The external genitalia and vagina were normal. The cervix was soft, closed and there was no tenderness. The uterus was smooth and bulky with no adnexal lesion. Ultrasound probe aiming at pelvic organs was performed. The findings reported a normal endometrial echo. Both ovaries were normal and there was no free fluid in the pelvic cavity. No gestational sac was seen in or out of the uterus. There was an increased echo near the left cornu. In view of these findings the patient was admitted to rule out the possibility of cornual pregnancy. The β hCG result was 5436 units, and repeat vaginal ultrasound confirmed the previous finding, but an echo on the left side of the uterine fundus, near the cornu measuring 3.6 – 2.2 cm. was observed. There was no free fluid in the pelvis (Fig. 2).

Figure 2

The patient was kept nil orally, two units of blood cross were matched, and meanwhile, she was kept under observation with a view of taking her to theater for laparoscopy.

The patient had diagnostic laparoscopy under general anesthesia followed by laparotomy. Laparoscopic findings were: bulky uterus and unruptured left interstitial gestational sac

approximately 2.6 by 3 cm bulging from the uterine fundus near the left tubo-uterine junction. There was no blood in peritoneum. A small cornual incision was made and the products of conception removed. The fundal incision was repaired with catgut stitches. The total blood loss was estimated at 300 ml.

The histopathological examination of the products of conception confirmed an early ectopic gestation in the interstitial part of the tube. There were no other abnormal findings.

The postoperative period was uneventful and the patient was discharged home on the third postoperative day.

DISCUSSION

The causes of interstitial pregnancy are not fully understood, however, history of previous ectopic pregnancy treated with ipsilateral salpingectomy is common[6-7]. This confirms previous reports that after total salpingectomy, an ectopic pregnancy can still be encountered and when it occurs it could be in the interstitial part of the ipsilateral tube[8.] Modern Assisted Reproductive Techniques (ART) play an important role in the increased incidence of ectopic pregnancies including the interstitial type. In other cases no apparent cause can be detected.

Because of its unique location, early diagnosis of interstitial pregnancy can be difficult; however, a transvaginal ultrasound facilitates an early diagnosis. The characteristic signs include: empty uterine cavity, eccentrically located, or very lateral gestational sac; thin or incomplete myometrial mantle covering the gestational sac; demonstration of the myometrium between sac and uterine cavity; no gestational sac visible above the level of the internal os in the longitudinal plane of the uterus. In patients in whom differentiation is difficult, the presence of prominent peritrophoblastic blood flow on color Doppler examination should lead to the correct diagnosis. It has been reported that these procedures have a sensitivity of 80% and specificity of 99%[9-10]. The combination of haemodynamic studies with the embolization of major blood vessels close to the interstitial pregnancy may lessen the bleeding in subsequent surgery. Another diagnostic aid would be the laparoscopy which can be used also for treatment[11-12].

The choice of treatment depends on the extent and site of the pathology that has occurred in the uterine wall and on the interest of the patient in preserving her childbearing function. The classical treatment is surgical, either cornual resection with simple suture repair of the lesion or hysterectomy. Recently, hysteroscopically guided curettage under laparoscopic control has been described[13]. Treatment of interstitial pregnancy with methotrexate, or local potassium chloride injection under ultrasound guidance has also been reported with good outcome[14]. Pre-operative angiogram and selective uterine artery embolization has been reported recently and is performed to minimize blood loss[14-15]. The size of the gestational sac, preservation of patient's fertility, and the surgeon’s experience are the factors that should be considered before a decision on the therapeutic approach is made.

Following the surgery of interstitial pregnancy, recurrence rate of an ectopic gestation is high prompting the surgeon to pursue a conservative approach in dealing with these cases as far as reasonably possible. It is therefore advisable to consider medical treatment in the early cases.

CONCLUSION

We have described a rare case of interstitial pregnancy, which was detected at six weeks of gestation. The new concepts and technologies used in the diagnosis, various modalities of treatment, and the potential effect of this management on future fertility were debated.

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