Case Report

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Interstitial pregnancy -conservative management by systemic methotrexate

Abstract

Background: Interstitial pregnancy poses a great diagnostic and therapeutic challenge and carries a high maternal mortality. Because of myometrial distensibility, they tend to present late when rupture occurs. But, when diagnosed early, it can be managed conservatively.

Case: A case of unruptured interstitial pregnancy diagnosed early on pelvic ultrasound, with high serum β hCG levels and managed by single dose systemic methotrexate is presented. Returning of serum β hCG to non pregnant levels and disappearance of ectopic mass occurred after 3 months of methotrexate administration.

Conclusion: Early diagnosis of interstitial pregnancy could lead to successful conservative medical management and avoids the life threatening complication of rupture and surgery. In a hemodynamically stable patient of interstitial pregnancy, systemic methotrexate can be a safe option even with high β hCG concentration but long term monitoring and patience is required.

Keywords: Interstitial pregnancy, Methotrexate, Ectopic pregnancy

Volume 6 Issue 2 - 2017

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Received: December 15, 2017 | **Published:** February 15, 2017

Abbreviations: HCG, Human Chorionic Gonadotropin; TVS, Transvaginal Ultrasonography; MTX, Methotrexate

Introduction

Interstitial pregnancy is a rare form of ectopic pregnancy and accounts for 2-4% of all tubal pregnancies.[1] Due to its location, there is an inherit difficulty in the diagnosis and treatment leading to high mortality compared with other ectopic pregnancies. The surrounding myometrial tissue allows progression of the pregnancy into the second trimester but rupture at such an advanced gestation (Figure 1) may result in catastrophic haemorrhage with a mortality rate of up to 2%,[2] Therefore, early diagnosis is important and this is possible with the pelvic ultrasonography and quantitative human chorionic gonadotropin (hCG), and allows for the conservative management. A case of interstitial pregnancy with intial high β hCG level managed by systemic methotrexate is presented here.

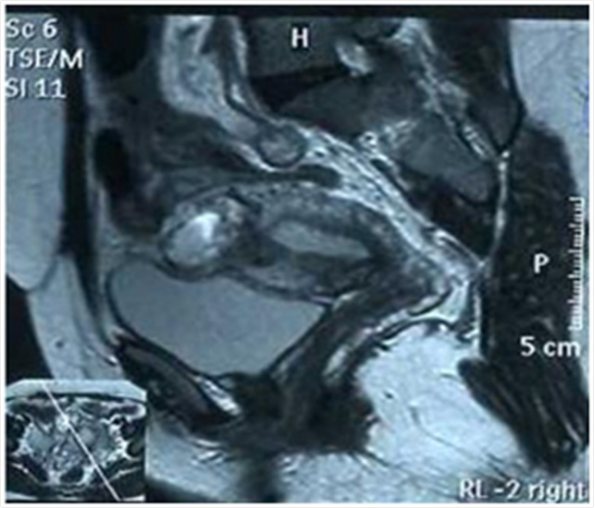

Figure 1 Saggital view of T2 weighted image showing irregular gestation sac surrounded by a thick wall with an uninterrupted junctional zone.

Case report

A 25 years old female, gravida five, para one presented to the Gynae ward with the complaint of six weeks amenorrhea and pain abdomen for one day. One year ago, she had laparotomy for ectopic pregnancy followed by right sided salpingectomy. At the time of presentation, her vitals were stable, no pallor was there. On abdominal examination, there was no muscle guarding or rebound tenderness. On bimanual examination, cervix was posterior, uterus was anteverted, bulky and a slightly tender mass of about 3×3 cm was felt in the right adenexa, close to the uterus. She was hospitalized with the clinical suspicion of ectopic pregnancy. Her initial serum β hCG level was quite high (25957 mIU/ml). Transvaginal ultrasonography (TVS) revealed a heteroechoic lesion of size 2.9 × 2.9 cm with irregular gestation sac in the right cornu of the uterus with no free fluid in the pouch of Douglas. The patient was diagnosed as a case of unruptured interstitial pregnancy. MRI was done to confirm the diagnosis as shown in Fig 1. Her complete blood count, renal and liver function tests were normal. Despite high hCG levels, we decided for conservative treatment with methotrexate (MTX). After taking informed consent before administration of methotrexate regarding the detailed discussion of risks, benefits, outcome, monitoring requirements and follow up visits with explanation of possible ruptured ectopic, a single dose of methotrexate 50 mg was administered intramuscularly. Serum hCG level on the 4th day of MTX therapy was 26028 mIU/ml. On the 7th day of MTX administration, serum hCG level was 25690 mIU/ml. As the decline in HCG levels between day 4 and 7 was <15%, a second single dose of methotrexate 50mg was given intramuscularly. Serum hCG was repeated after one week and was 4742mIU/ml. Patient was then discharged and was given the contact number in case the emergency arises and was followed up weekly with serum hCG levels. Throughout the follow–up duration, the patient was asked to maintain an easy access to the hospital and informed to come back if she experiences pain or bleeding. Serum hCG level was 1446 mIU/ml at D21, 260.3 mIU/ml at D28. At D28, ultrasound was repeated and revealed a heteroechoic mass of size 5.3× 4.5 cm in the rt cornu of the uterus. As the hCG levels were falling, despite increase in the

size of the mass we continued conservative management and follow up with hCG concentration every two weeks. Her serum hCG level was 3.4mIU/ml after 3 months of MTX administration and TVS at that time showed the disappearance of the mass.

Discussion

An interstitial pregnancy implants within the myometrium of the proximal and intramural portion of the fallopian tube.[3] Risk factors for development of interstitial pregnancy include previous ectopic pregnancy, previous salpingectomy, uterine anomalies, ipsilateral salpingectomy, IVF, ovulation induction, and sexually transmitted infections.[4]

In the present case, the ipsilateral salpingectomy may be the predisposing cause of interstitial pregnancy. The diagnosis is challenging and requires high index of suspicion and can be made by utrasonography and or laparoscopy. Ultrasonic criteria for the diagnosis include an empty uterine cavity, a gestational sac separate from the uterine cavity, and a myometrial thinning of less than 5 mm around the gestational sac; typically the interstitial line signan echogenic line from the endometrial cavity to the corner next to the gestational mass is seen. MRI can be used particularly when it is important to distinguish between an interstitial and angular pregnancy.[5]

Choice of treatment is largely dictated by the clinical situation. Traditionally interstitial pregnancies have been diagnosed late when rupture occurs. A ruptured interstitial pregnancy requires an immediate surgical intervention either by laparoscopy or laparotomy to stop the bleeding and remove the pregnancy. Surgical methods to remove the pregnancy include cornual evacuation, incision of the cornua with removal of the pregnancy (cornuostomy), resection of the cornual area or a cornual wedge resection, typically combined with an ipsilateral salpingectomy, and hysterectomy.[6] Because of the vascularity of the interstitial region particularly during pregnancy, blood loss during surgery may be substantial and is associated with high morbidity and detrimental effects on future fertility.

Early diagnosis allows a varied choice of treatment options with high possibility of preserving fertility. In patients with an asymptomatic interstitial pregnancy methotrexate has been successfully used, however, there are reports of failures.[7]

There exists no clear consensus on approach, dosing of methotrexate or follow up.[8] We are reporting the case as the interstitial pregnancy with high β hCG level has been managed successfully by using two single doses of methotrexate. Serum β hCG on Day 7 of first MTX was also very high though it was not a viable pregnancy but managed by giving repeat dose of MTX. Even after medical treatment, the ectopic mass was noted to be increased in size and persisted for weeks on serial ultrasound examination. This probably represents hematoma, rather than persisitent trophoblastic tissue, and was not predictive of treatment failure.

Early diagnosis of interstitial pregnancy could lead to successful conservative medical management and avoids the life threatening complication of rupture and surgery. In a hemodynamically stable patient of interstitial pregnancy, systemic methotrexate can be a safe option even with high β hCG concentration but long term monitoring and patience is required.

Acknowledgments

None.

Conflicts of interest

None

References

1. Damario MA, Rock JA. Ectopic Pregnancy. In: Rock JA, et al. (Eds.), *Operative Gynecology* (9th edn), Philadelphia: Lippincott Williams & Wilkins, USA. 2003;pp.507–536.
2. Michael Kamrava. Ectopic Pregnancy – Modern Diagnosis and Management. In: Maged Shendy & Rami Atalla (Eds.), *Obstetrics and Gynecology*, USA. 2011;pp.258.
3. Malinowski, Bates SK. Semantics and pitfalls in the diagnosis of corneal/interstitial pregnancy. Fertil Steril. 2006;86(6):e11–e14.
4. Molinaro TA, Barnhart KT. Ectopic pregnancy in unusual locations. *Semin Reprod Med*. 2007;25(2):123–130.
5. Ackerman TE, Levi CS, Dashefsky SM, et al. Interstitial line: sonographic finding in interstitial (cornual) ectopic pregnancy. *Radiology*. 1993;189(1):83–87.
6. Moawad NS, Mahajan ST, Moniz MH, et al. Current diagnosis and treatment of interstitial pregnancy. *Am J Obstet Gynecol*. 2010;202(1):15–29.
7. Goruk NY, Gocmen A, Ucar MG, et al. Treatment of cornual viable pregnancy with single dose methotrexate: case report. *J Clin Exp Invest*. 2012;3(1):105–107.
8. Swank ML, Harken TR, Porto M. Management of interstitial ectopic pregnancies with a combined intra–amniotic and systemic approach. *Obstet Gynecol*. 2013;122(2 pt 2):461–464.