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Diverse Management of Cornual Ectopic Pregnancy: Review of 2 Cases

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Authors' contributions

This work was carried out in collaboration between all authors. Author MD wrote the draft of the manuscript. Authors MD and PRL managed the literature searches. Author ST designed the figures, managed literature searches and contributed to the correction of the draft. Authors MD and PRL provided the case, the figures and supervised the work. All authors read and approved the final manuscript.

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Case Study

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ABSTRACT

Aims: Cornual or interstitial pregnancy is a rare form of ectopic pregnancy with high maternal morbidity and mortality. Different medical approach may require managing this form of unusual ectopic pregnancies.
Presentation of Case: We hereby present two cases of cornual ectopic pregnancies, one of them managed conservatively by potassium chloride and methotrixate. The other patient underwent laparotomy due to haemodynamic instability.
Discussion: Cornual ectopic pregnancy usually presents during late first or early second trimester but it may present as early as 6-8 week period of gestation. Early diagnosis allows a varied choice of treatment options with a high possibility of preserving fertility. Surgical management is reserved for late presentation and patients present with haemodynamic instability.
Conclusion: Cornual ectopic pregnancy can present very early in the first trimester. Local KCL with systemic methotrexate can increase the success rate of conservative management in cornual ectopic pregnancies presenting late at first trimester.

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Keywords: Cornual ectopic; methotrexate; MRI; ultrasonography; laparotomy.

1. INTRODUCTION

Pregnancy implantation in the intrauterine portion of fallopian tube is known as cornual ectopic or interstitial ectopic pregnancy. Because of its location, there is an inherit difficulty in the diagnosis and treatment leading to high morbidity & mortality compared with other ectopic pregnancies. Although cornual ectopic pregnancy is a rare event which represents about 2% to 4% of all tubal pregnancies [1], the risk of maternal mortality of this type is about 2% to 2.5%. Late first trimester or early second trimester rupture is known to occur in cornual pregnancy. The therapy for this condition usually surgical which consists of either hysterectomy or cornual resection as the treatment of choice [2] but recently increasing number of laparoscopic or even hysteroscopic approach have been used. Injection of methotrexate locally or systemically has also been used successfully. Conservative management is very useful for these cases but still laparotomy may be necessary in selected cases.

2. CASE NO 1

29 years old nulliparous lady underwent Intra Uterine Insemination (IUI) for secondary infertility. She had previous history of left sided ectopic pregnancy for which laparoscopic salpingectomy was done. At 9w 1d d Period Of Gestation (POG), ultrasound examination showed empty uterine cavity with pregnancy on the right side of the cornu (Fig. 1).

She was haemodynamically stable and asymptomatic for ectopic pregnancy with serum Bhcg of 14080 IU/ ml. MRI clearly delineate empty uterus with gestational sac in the interstitial part of the uterus with a live fetus of 8w3d (Fig. 2).

After admission, local KCL (Potassium chloride) injection was given by ultrasonic guidance and intra muscular injection of single dose methotrexate @ 1 mg/Kg body weight was administered at 9w6d POG. She was discharged after 7 days. Serum Bhcg values started decreasing gradually every week and normalised after 6 weeks post the dose of methotrexate. On transvaginal ultrasonography, the sac size started reducing after 1 week and completely absorbed by 5 weeks. After 7 weeks she had her menstrual cycle and hystersalpingogram done after 3 months showed bilateral tubal block.

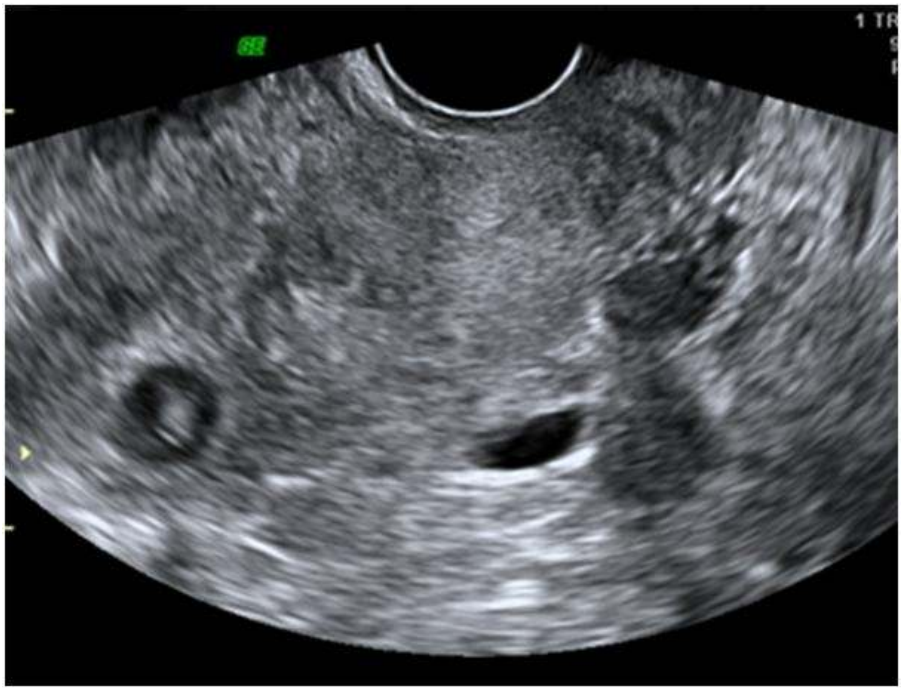

Fig. 1. Trans vaginal sonography showing cornual ectopic

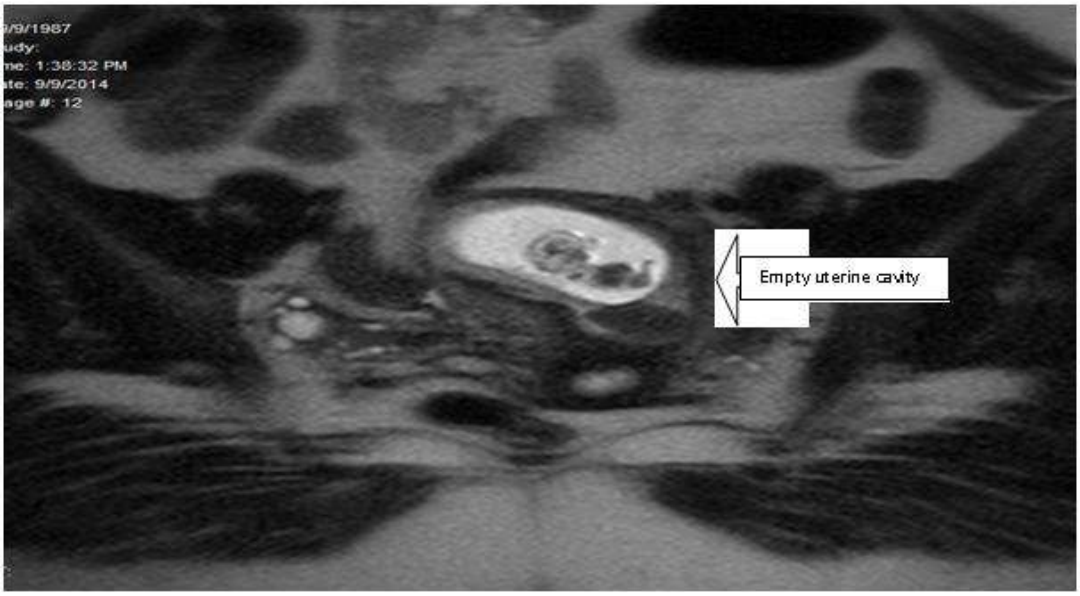

Fig. 2. MRI showing cornual pregnancy with empty uterine cavity

3. CASE NO 2

30 years old G2P1L1 at 7w 2d POG reported to labour room with complaints of pain abdomen for 1 day and bleeding per vaginum since 02 hrs. Her urine pregnancy test was positive carried out at home. On examination, her blood pressure was 82/40 mm of Hg with pulse rate of 110/min. Other systemic examination was within normal limits. Per abdominal examination revealed mild distension with tenderness at left iliac fossa. Bed side ultrasound showed 2x3 cm size left adnexal mass with empty uterus. Free fluid was present in pouch of Douglas and also at Morrison's pouch. Diagnosis of ruptured ectopic pregnancy with hypovolumic shock was made and patient was taken up for emergency laparotomy. Intra op, she was found to have haemoperitonium with left sided cornual pregnancy (Fig. 3).

2 litre of blood was drained and left sided cornual resection was done which was sutured with Vicryl 1-0. She was transfused 3 pints of packed cell with 4 units of FFP during intra and post operative period. Post operation recovery was uneventful and was discharged of 3rd post op day.

4. DISCUSSION

With the invention of assisted reproductive techniques, incidence of ectopic pregnancy is on the rise. The widespread use of transvaginal ultrasonography and serum β hCG assays have improved the preoperative diagnosis of ectopic pregnancies, however diagnosing cornual pregnancy remains a challenge. The diagnosis of the cornual ectopic pregnancy is usually delayed as this part of the tube has good muscular and vascular support which results in good distensibility and thus causing less pain [3]. Cornual ectopic pregnancy share the common risk factors of other types of ectopic pregnancies like pelvic inflammatory disease, history of previous ectopic, history of tubal surgery, assisted reproductive technology, use of intra uterine contraceptive device, increasing age, smoking, previous pelvic surgeries [3]. Our first patient had previous history of ectopic pregnancy and she also underwent IUI procedure for her infertility treatment but second patient had natural conception.

Cornual or interstitial pregnancy usually diagnosed by ultrasonography and many cases during laparotomy after rupture of ectopic pregnancy. Three sonographic criteria can be used for the diagnosis of interstitial pregnancy: (a) Empty uterine cavity; (b) Chorionic sac separated 1 cm from the most lateral edge of the uterine cavity; and (c) Thin myometrial layer surrounding the chorionic sac. The interstitial line sign (the echogenic line extending into the upper part of the uterine horn bordering the margins of the intrauterine gestational sac) is also helpful in diagnosing an interstitial pregnancy [4]. Role of MRI is not clear in diagnosis of cornual ectopic.

MRI was done in the first case as diagnosis was not absolutely clear by transvaginal ultrasonography and it clearly delineated the position of the gestational sac with fetus.

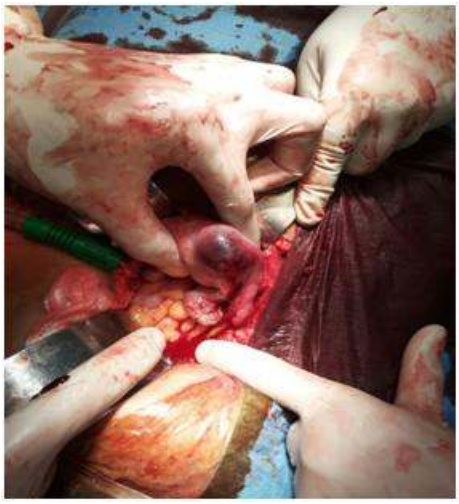

Fig. 3. Ruptured cornual ectopic

In contrast to the common clinical notion that rupture occurs only between 12 and 16 weeks, in interstitial pregnancies rupture could happen at any time in early pregnancy [5]. Evidence over last decade suggest that early rupture are known to occur in cornual ectopic pregnancy as our second case where rupture occurred at 7w2d period of gestation. Early diagnosis allows a varied choice of treatment options with a high possibility of preserving fertility. Conservative management by local or systemic methotrexate is well established in a haemodynamically stable patient with no or minimal symptoms [6]. Systemic methotrexate is more successful if there is no heart beat detected in the ectopic pregnancy. Local potassium chloride (KCL) injection has been used as alternative to local Methotrexate with promising results. It is used mainly if the patient is keen on conceiving soon after the ectopic [7]. We have used local KCL and systemic methotrexate in our first case as she was case of infertility with 9w6d POG with fetal cardiac activity. Only using systemic methotrexate may not be useful treating cornual ectopic at 10 w POG with fetal cardiac activity. So, we combined local KCL with single dose systemic methotrexate and had a successful outcome in our first case.

Cornual ectopic has been reported to be treated by variation of procedures mainly cornuotomy, cornual resection and a more radically a hysterectomy. The latter has only a role in a life saving condition when other methods has been tried and exhausted. Laparoscopic approach is preferred over the laparotomy for unruptured cases provided a skilled laparoscopic surgeon is available. Laparoscopic approach is associated with less intra-operative bleeding, less post operative pain and analgesia requirement, shorter hospital stay and fewer post operative adhesions [6]. Laparotomy was necessary in our second case as she was reported with ruptured cornual ectopic pregnancy with features of hypovolemic shock. It appears generally accepted that a Cesarean section delivery should be used with subsequent pregnancies after conservative surgery [5].

5. CONCLUSION

Cornual ectopic pregnancy can present very early in the first trimester. MRI can be useful in adjunctive with ultrasonography in establishment of diagnosis of cornual ectopic in difficult cases. Local KCL with systemic methotrexate can increase the success rate of conservative management in cornual ectopic pregnancies presenting late at first trimester with fetal cardiac activity and high Bhcg.

CONSENT

All authors declare that 'written informed consent was obtained from the patient (or other approved parties) for publication of this case report and accompanying images.

ETHICAL APPROVAL

All authors hereby declare that all experiments have been examined and approved by the appropriate ethics committee and have therefore been performed in accordance with the ethical standards laid down in the 1964 Declaration of Helsinki.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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