



Ectopic Cornual Pregnancy and Its Management: A Case Report and Literature Review

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Abstract

Background: *cornual ectopic or interstitial ectopic is a rare type of ectopic pregnancy for 2-4% of all tubal pregnancies. It is associated with serious or fatal bleeding and mortality rate upto 2-2.5%.*

Result: *A 32 year old woman, G3P2L2, 2 Alive presented to the gynaecological Emergency ward with 10 weeks amenorrhea, with lower abdominal pain on April 09, 2014. A clinical diagnosis of ectopic pregnancy was made and confirmed using USS. At surgery a right cornual unruptured ectopic pregnancy was found. She had right cornual resection and salphingectomy and left tubal ligation. There were no postoperative complications.*

Conclusion: *it is difficult to make a clinical diagnosis of cornual ectopic pregnancy. Management is generally surgical. Our patient had Cornual resection and salphingectomy with no postoperative morbidity.*

Key words: *Ectopic, Cornual, pregnancy*

INTRODUCTION

An ectopic pregnancy is a pregnancy that implants outside the uterine cavity.¹ The fallopian tube is the most common site of ectopic pregnancy, accounting for more than 95% of all ectopic pregnancies.²

The part of the fallopian that lies within the musculature of uterus is called the interstitial or cornual region. It measures 1-2 cm with a diameter of 0.7 mm. Its course is slightly tortuous and extends upward and outward in an oblique manner from within the uterine cavity.

Interstitial or cornual pregnancy is implanted at this site. Although, among the ectopic pregnancies, ampullary region is the most

common site; the risk of maternal mortality is more with cornual pregnancy. Moreover, the diagnosis of cornual pregnancy is difficult as they are diagnosed relatively late around 7-12 weeks as myometrium at this region can undergo distension allowing the pregnancy to grow; and if at all cornual rupture occurs it leads to hypovolemia and shock due to profuse haemorrhage.³

CASE REPORT

A 32-year-old G3P2L2 Mrs. M presented with abdominal pain following 10 weeks amenorrhea on April, 09, 2014 at 6:30 pm to our institution. On examination, her general condition and vitals were stable, and there was no pallor.

On per vaginal examination, uterus was enlarged to 10 weeks, and there was no cervical motion tenderness and fornices were free. An ultrasound examination revealed empty uterine cavity and right live cornual pregnancy. As the patient requested for sterilization, we performed an emergency laparotomy. Operative findings revealed a right cornual pregnancy with impending rupture (Figure 1).

We proceeded for the right cornual resection with right salpingectomy and left tubal ligation (Figure 2). Figure 3 shows a specimen with the fetus. Post-operative period was uneventful. She was discharged on the 5th post-operative day without any complications.



Figure2- surgery permomed



Figure 3- specimen



Figure1- operative finding



DISCUSSION

Cornual pregnancy poses difficulty in early diagnosis. There was no difficulty in diagnosis of our patient as gestational age was 10 weeks. The diagnosis of cornual pregnancy is difficult because the gestational sac will be seen in an eccentric position, and the adjacent myometrium will be thinned out due to distension; giving the appearance of an eccentric intrauterine pregnancy. Diagnosis can make with transabdominal or transvaginal ultrasound using following criteria:

1. Uterine cavity should be empty of gestational sac.
2. <10 mm of the lateral edge of the uterine musculature would be measured from the gestational sac.

3. The myometrial layer surrounding the sac would be thin.
4. Early cornual gestation may be seen located in the lateral part of the uterus but if detected late, the cornual gestation may mimic an eccentrically located intrauterine pregnancy also known as “interstitial line” sign.⁴
5. In cornual gestation, a thin echogenic line may be seen extending up to the gestational sac representing either the interstitial portion of the fallopian tube or the cavity of endometrium that depend on the size of corneal gestation.

Sonologist should take care in interpretation as a normal intrauterine pregnancy in an anomalous uterus (bicornuate or septate) may mimic a cornual pregnancy. Increased flow resistance asymmetrically in uterine cornu is also a sign of cornual pregnancy. Transvaginal scan serves as an important tool in diagnosis of corual pregnancy as a live embryo inside a gestational sac can be seen surrounded by myometrium below the cornu and away from endometrium.⁵

Differential diagnosis of cornual pregnancy is the angular pregnancy, which is implanted lateral to the round ligament. 3D and 4D transvaginal ultrasound provides diagnostic accuracy if there is doubt in the diagnosis.

The risk factors are as for other types of ectopic pregnancy are contralateral salpingectomy, previous ectopic pregnancy and *in vitro* fertilization.

Complications and Management

Uterine myometrial rupture: This usually occurs after 12 weeks of gestation and leads to profuse intra-abdominal bleed and hemorrhagic shock because the cornual region of the uterus is extensively supplied by both uterine and ovarian vessels. This can lead to sudden collapse and death.⁶

Laparotomy is the preferred treatment of choice in rupture of advanced cornual gestation. Unilateral uterine artery ligation prior to attempting at

repairing a ruptured cornu helps in achieving hemostasis better. However, laparoscopic coruectomy can also be performed by experienced surgeon with significant hemoperitonium along with blood transfusion. Only a skilled laparoscopic surgeon should attempt surgery in such cases to safeguard the life of the patient and if need arises the surgery should be converted to laparotomy.

Other Management Options

Medical management

Cornual pregnancy can also be managed with systemic methotrexate if diagnosis is made early. In such cases, surgery can be avoided. Use of local injection of methotrexate either transvaginally or under ultrasound guidance or laparoscopically is also highly effective.

The recommendations given by The Royal College of Obstetrician & Gynaecologists is that patients with ectopic gestation should be managed medically only if their beta human chorionic gonadotropin (hCG) level is <3000 IU/L and patient should be asymptomatic or has only minimal symptoms. However, medical management can also lead to complications like rupture of uterine cornu leading to profuse hemorrhage and shock. Relative contraindications for medical management include an advanced and live cornual ectopic.

The pre-requisite for medical management include:

- a) Hemodynamic stability
- b) No signs of rupture
- c) Motivated to attend for regular (perhaps prolonged) follow-up
- d) No medical contraindications to methotrexate. The initial level of beta hCG may predict the need for a second dose of methotrexate. It is given in the dose of 1 mg/m². Single-dose methotrexate is not associated with toxicity, and folic acid rescue is not needed.

Other nonsurgical procedure comprises of selective uterine artery embolization along with methotrexate or in methotrexate failure to decrease the vascularity and prevent catastrophic haemorrhage.^{7,8}

Our patient was not offered a medical treatment, as the size of the sac was more than 4 cm. Therefore, right Cornual resection and salpingectomy was considered to prevent rupture with torrential haemorrhage and the recurrence of ectopic pregnancy in the ipsilateral tube (which was grossly dilated and the other one was normal).

Hysteroscopic Management

The rationale behind this approach is to avoid more extensive surgery. Candidates suitable for the hysteroscopic management include those who do not wish for medical management with methotrexate or those who do not respond to medical treatment.⁹ However, laparoscopic guidance may be needed during resection of cornual endometrium including tubal ostium.¹⁰

Surgical Management

Consists of conservative techniques, such as cornual resection, cornuostomy and radical operations such as hysterectomy. These can be performed either by laparotomy or laparoscopically. If the hemorrhage is life threatening the surgeon may resort to radical surgery like hysterectomy. Conservative management either medical or surgical has a high risk of recurrence in the subsequent pregnancy. Conservative surgical methods involve salpingostomy if gestation is <3.5 cm. For gestation more than 4.5 cm, cornual resection is preferred.

Tubal pathology and the assisted reproductive conception are the cause for recurrence. However, cornual resection affects future fertility, and there is always a chance of rupture uterus at the scar site in the future pregnancy.

CONCLUSION

Cornual pregnancy management can be a nightmare as the diagnosis is difficult and therapeutic options also carry risks. There is a greater risk of maternal mortality than any other ectopic pregnancy. Early diagnosis and management forms the mainstay in the conservative management. Hysteroscopic approach is another option that is usually performed under laparoscopic guidance.

Cornual excision and hysterectomy are the traditional treatments but medical management with systemic, or local methotrexate and laparoscopic cornuectomy can be performed after adequate counselling regarding risk rupture uterus in future pregnancy and mode of delivery.³ It is recommended to perform an elective caesarean section in subsequent pregnancy.

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