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Case Report

When conservative treatment leaves a cornual mass: laparoscopic resection of persistent products following UAE and methotrexate for cornual ectopic pregnancy

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ABSTRACT

Cornual/interstitial ectopic pregnancy is an uncommon form of ectopic in which implantation occurs within the interstitial portion of the fallopian tube. It accounts for approximately 2%–4% of all ectopic pregnancies but associated with a higher mortality rate. Thus, surgery is the preferred management, unlike treatment of other ectopic pregnancy. Here, we present a case of women in her thirties with right cornual ectopic pregnancy, not willing for any surgical intervention. We went with the multimodal approach, with bilateral uterine artery embolization followed with methotrexate injection and continuous monitoring with serial serum β-hCG levels and ultrasonography. After three months of initial presentation, for persistent cornual mass, patient underwent laparoscopic resection of cornual mass with minimal bleeding. This case underscores a management of potentially high-risk condition can be individualised with careful imaging, serial β-hCG monitoring and good compliant of patient.

Keywords: Cornual ectopic pregnancy, Interstitial pregnancy, Methotrexate, Uterine artery embolization, Serial serum β-HCG

INTRODUCTION

Cornual pregnancy, also referred as interstitial pregnancy, occurs when the gestational sac implants within the interstitial portion of the fallopian tube that traverses the muscular wall of the uterus. Cornual pregnancy (CP) accounts for approximately 2%–4% of all ectopic pregnancies and is associated with a mortality rate of 2.0%–2.5%. The substantial hemorrhagic risk is attributed to the highly vascular nature of the cornual region and the potential for the gestational sac to enlarge considerably before diagnosis, increasing the risk of severe bleeding and uterine rupture.[1]

Patient may present with amenorrhoea followed with abdominal pain and vaginal bleeding, and transvaginal ultrasound is the key imaging modality, though it requires a high level of suspicion and expertise.[2]

Management of cornual ectopic should be individualized according to the patient's clinical condition and the operative scenario. Role of Methotrexate (MTX) in cornual ectopic has a limited role.[3] Surgical options for interstitial pregnancy include cornuostomy and cornual wedge resection, often combined with ipsilateral salpingectomy. Expectant management is not commonly used because of the risk of uterine rupture.[4,5]

CASE REPORT

A woman in her thirties, with previous history of spontaneous abortion and left tubal ectopic, for which left

salphingectomy done, presented with amenorrhoea with vaginal bleeding. She was vitally stable and perabdominal examination was unremarkable. Perspeculum examination showed vaginal bleeding and on bimanual examination revealed normal-sized, anteverted uterus with right fornicial tenderness. Her urine pregnancy test was positive and transvaginal ultrasonography showed a 5.5-week gestational sac located in the right cornua, and increased vascularity, suggestive of a right cornual ectopic pregnancy. (Figure 1)

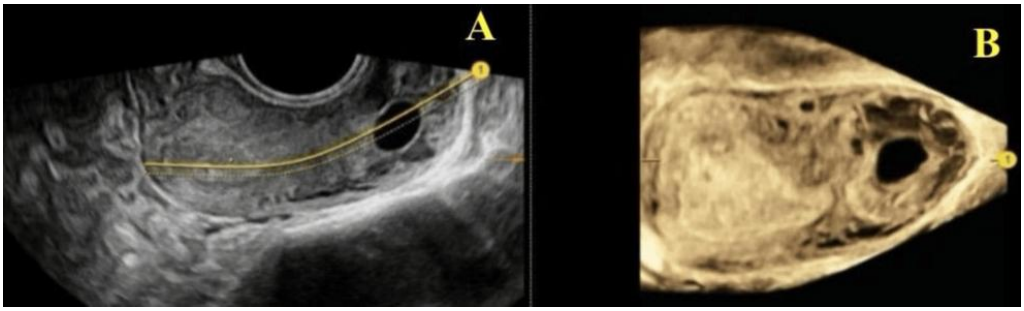


Figure 1: Ultrasonographic images of cornual ectopic pregnancy. (A) Transvaginal ultrasonography demonstrating a eccentrically located gestational sac (GS) and (B) Three-dimensional (3D) ultrasonography showing an eccentrically located gestational sac in the right uterine cornual region.

On admission, all relevant and routine investigations were done, and serum β-hCG levels was 6156 mIU/ml. Since patient and her husband refused surgical management and wanted to go for medical approach, they were counselled regarding the advantages and complications of medical management and explained the risk of rupture leading to life threatening haemorrhage and sos need of an emergency laparotomy and hysterectomy.

With the help of interventional radiologist, bilateral uterine artery embolization was performed and after interval of 24 hours, injectable methotrexate 75 mg (calculated at 50 mg/m²) was administered (Figure 2 and 3). After 48 hours of medical management, her repeat serum β-hCG was 3105 mIU/ml. Her serial β-hCG levels were monitored, which showed falling trend, and patient was discharged on β-hCG level of 21.60 mIU/ml.

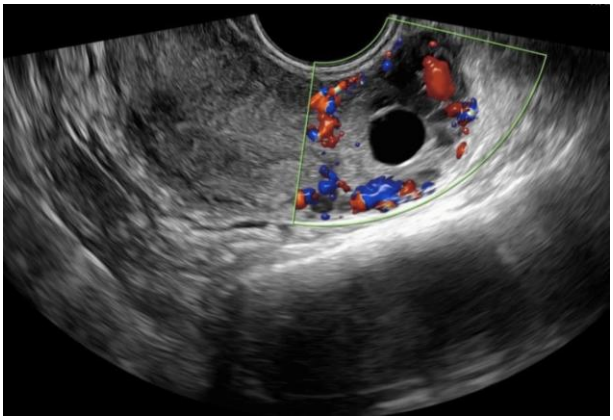


Figure 2: Ultrasonographic image showing -Ring of fire appearance around gestational sac (Pre uterine artery embolization vascularity).

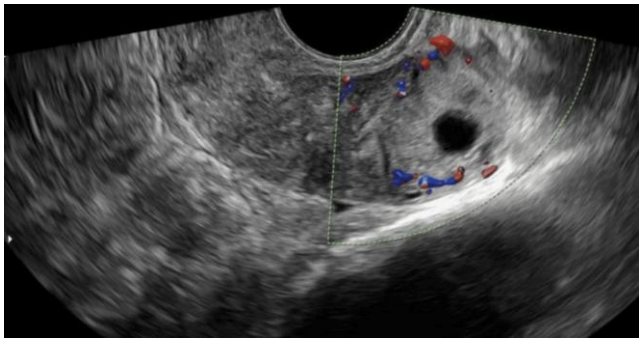


Figure 3: Ultrasonography of gestational sac after uterine artery embolization with reduced vascularity.

On follow up visit, after two weeks, her serum β-hCG was raised to 777 mIU/ml and TVS showed a persistent interstitial pregnancy. A second dose of methotrexate 75 mg was administered intramuscularly and serial monitoring of β-hCG levels was done. After one month of follow up, her serum β-hCG levels was reduced to 1.24mIU/ml. After the further follow up, after three months, patient had persistent mass at the cornual region of uterus and serum β-hCG levels was <0.2 mIU/ml. So a decision of diagnostic hysteroscopy-laparascopy was taken for further evaluation. On hysteroscopy, uterine cavity was normal with both normal tubal ostia. Laparoscopy was done using 30-degree 10 mm telescope. Intraoperatively, right cornual mass of 2.5×2.5 cm was seen, right ovary showed haemorrhagic cyst and left ovary normal, left fallopian tube was absent and right fallopian tube was normal. Injection Vasopressin was injected, total 10 ml volume, at the base of cornual lesion in dilution of 0.1IU/ml.

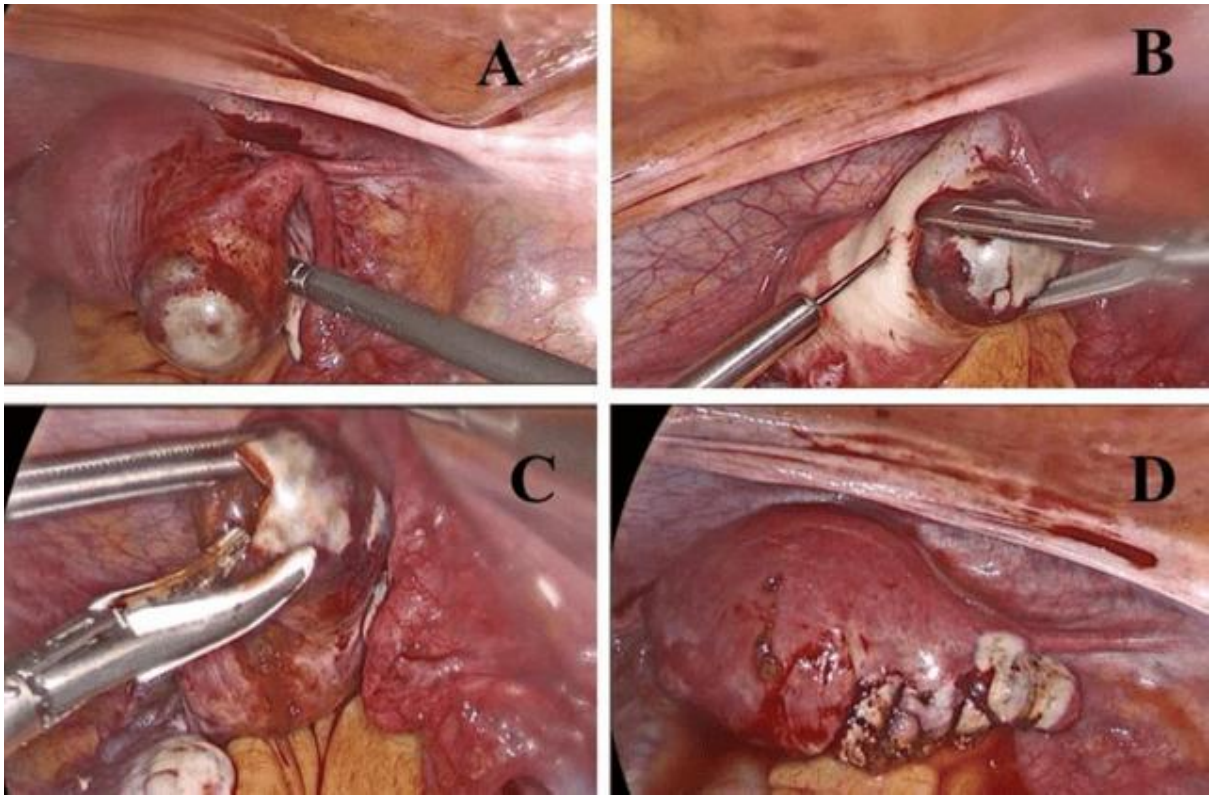


Figure 4: Intraoperative laparoscopic images of chronic cornual ectopic; (A) laparoscopic view showing the right cornual bulge and markedly dilated surface vessels; (B) injection of vasopressin at the base of the cornual bulge; (C) incision and evacuation of products of conception and (D) completed cornual repair.

A linear incision was made along the long axis of the cornual lesion, and the contents were evacuated. Hemostasis was secured using fine bipolar diathermy, and the incision was closed with a single-layer barbed suture. (Figure 4) Histopathological examination of the tissue suggestive of focal ghost outline of chorionic villi, and fibrocollagenous tissue with chronic inflammatory infiltrate and numerous hemosiderin-laden macrophages.

DISCUSSION

There is increase in incidence of ectopic pregnancy in modern obstetrics because of advanced ultrasonography technology and increased use of assisted reproductive techniques. Although transvaginal ultrasonography and serum β-hCG assays have enhanced preoperative diagnosis, cornual (interstitial) pregnancy remains difficult to diagnose due to the muscular and vascular support of the interstitial tube, which enables increased distensibility and delays the onset of symptoms.[6]

Pelvic inflammatory disease, previous ectopic pregnancy or tubal surgery, assisted reproductive techniques, intrauterine contraceptive device use, increasing maternal age, smoking, and previous pelvic surgery are all risk factors that are similar to those of other ectopic pregnancies.[7]

A gestational sac that is located more than 1 cm from the lateral edge of the uterine cavity, an empty uterine cavity, and a thin myometrial layer that surrounds the sac are the sonographic criteria for diagnosing interstitial pregnancy. An additional diagnostic feature is the interstitial line sign, which is an echogenic line that extends from the uterine cavity toward the gestational sac. The function of magnetic resonance imaging (MRI) remains uncertain and can be used only to distinguish between an interstitial and angular pregnancy.[7]

Methotrexate (MTX) is the standard medical treatment for early ectopic pregnancy, with an overall success rate of approximately 91%. However, in interstitial ectopic pregnancy, MTX efficacy may be reduced by delay in diagnosis at advanced gestational age, and elevated β-hCG levels.[3]

Surgical options for interstitial pregnancy include cornuostomy with removal of the gestational tissue and cornual wedge resection, often combined with ipsilateral salpingectomy. Hysteroscopy-assisted laparoscopic salpingectomy is a potential minimally invasive option for selected early-diagnosed interstitial pregnancies and laparoscopy is the preferred method for selected unruptured cases. However, Hysterectomy is reserved for life-threatening hemorrhage when all conservative measures fail. In cases of conservative surgical approach,

cesarean delivery is generally advised for subsequent pregnancies, due to potential for uterine rupture.[7]

Management of cornual ectopic pregnancy is highly individualised and depends on the patient profile, hemodynamic status, institutional monitoring and available resources. In our case, we went with multimodal treatment with uterine artery embolization, followed by medical management with methotrexate, as our patient was hemodynamically stable, willing for more conservative approach and highly compliant for follow up. Serial β-hCG and imaging surveillance remain essential in conservative treatment. However, for chronic ectopic, with persistent cornual mass even after three months, we did cornual mass resection with minimal invasive approach and minimal bleeding.

CONCLUSION

Cornual pregnancy (CP) is a potentially life-threatening condition requiring prompt and effective treatment. Minimally invasive techniques have evolved as preferred treatment options in hemodynamic stable patient. When clinically appropriate, medical management should also be considered because of its potential to achieve successful outcomes while avoiding surgical morbidity.

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