

## Cornual Pregnancy - A Case Report

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### SUMMARY

Ectopic pregnancy is a rare condition where the gestational sac implants outside the uterus; It ruptures causing catastrophic haemorrhage. Cornual or interstitial pregnancy is a rare type of ectopic pregnancy whereby the gestational sac implants in the interstitial part of the fallopian tube and invades through the uterine wall. As the myometrium is relatively more distensible the pregnancy lasts longer than other types of ectopic pregnancies. In addition to that its rupture causes torrential life threatening intra peritoneal bleed owing to high vascularity of myometrium. We came across a case of ruptured cornual ectopic in Pakistan Air Force Hospital Mianwali, Pakistan. She was admitted by medical specialist with syncopal attack and vomiting. On consulting the gynaecologist followed by scan she was found to have massive intraperitoneal haemorrhage along with a gestational sac containing a nine week and five days old fetus showing a positive cardiac activity. This implies that the value of high index of suspicion and early institution of life saving surgical intervention cannot be overemphasized.

**Keywords:** Cornual pregnancy, ruptured ectopic pregnancy.

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### INTRODUCTION

Cornual pregnancy also termed as interstitial pregnancy is a rare form of ectopic pregnancy where the gestational sac implants in the Interstitial part of the fallopian tube which extends into the uterine wall. Owing to the distensibility and higher vascularity of the myometrium the pregnancy not only lasts longer but also causes life threatening haemorrhage on rupture. Although the incidence of cornual pregnancy is not a simple calculation nonetheless the incidence of ectopic pregnancy in general population is about 2%<sup>1</sup>. Interstitial pregnancies account for 2-4% of ectopic pregnancies and about 20% of cases that advance beyond 12 weeks of gestation end in rupture<sup>2</sup>. We encountered a case of ruptured corneal pregnancy in Pakistan Air Force Hospital, Mianwali, Pakistan. She was admitted by the medical specialist with syncope and vomiting. On gynaecologist's involvement she was diagnosed as ruptured corneal ectopic and underwent lifesaving hysterectomy.

### CASE REPORT

A forty years old lady was admitted in Intensive care unit by medical specialist with complaints of vomiting followed by syncopal attack in the previous night. Gynaecologist was requested to see the patient which revealed that this lady was para 4+1 previous normal deliveries. She was neither taking any contraceptives nor was sure of her last menstrual period date. She was pale, had shoulder tip pain and abdominal tenderness suggestive of acute abdomen. A clinical diagnosis of ruptured ectopic was made and urgent ultrasound was requested which revealed massive intraperitoneal bleed with a gestational sac containing fetus of nine weeks and five days showing a positive fetal cardiac activity laying in the peritoneal cavity. A diagnosis of ruptured ectopic was confirmed and the patient was immediately evacuated for emergency laparotomy with four

units of blood in hand and appropriate counseling for a radical procedure in a life threatening event. As per guidelines two consultant gynaecologists carried out the procedure. Pfannestiel's incision was given and on opening the abdomen about four liters of fresh and clotted blood was removed. An intact gestational sac with the fetus was recovered from the peritoneal cavity (Fig. 1 and 2). Next to it Uterus tubes and ovaries were exteriorized which showed ruptured uterine cornu with torrential bleed. An immediate decision of total abdominal hysterectomy was taken and theater staff requested to communicate the same to the patient's attendants. Intraoperative blood transfusion started and the next bag of blood requested inside the theater to replenish the loss caused by intractable bleed. Total abdominal Hysterectomy was done (Fig. 3) and intraperitoneal drain installed to address small unidentifiable blood loss. Postoperative haemoglobin of 7.1g/dl was addressed with three units of Red Cell Concentrate. Coagulation profile was within normal confines. Drain was removed on third postoperative day and the patient was discharged on fourth postoperative day owing to uneventful recovery.

Fig. 1: Intact Gestational Sac with Fetus



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Fig. 2 : Intact Gestational Sac with Fetus, relatively clear view.



Fig. 3 : Uterus after Total Abdominal Hysterectomy.



## DISCUSSION

Interstitial or cornual pregnancy is a rare type of ectopic pregnancy accounting for only 2 – 4% of all ectopics. Higher vascularity of uterine cornu reinforced by neovascularization in pregnancy coupled with myometrial ability to distend enables the pregnancy to last longer and progress to second trimester. Rupture in such an advanced gestation is catastrophic with a mortality rate as high as 2%. This high mortality rate is partially due to difficulty in diagnosis as well as the speed with which it hemorrhages<sup>2</sup>. The risk factors for cornual pregnancies are history of pelvic inflammatory disease, previous ectopic pregnancies, tubal and other surgeries and conception after tubal ligation. Salpingectomy, salpingostomy, assisted reproductive technology and difficulties during embryo transfer procedure are other likely risk factors for cornual pregnancy<sup>3-5</sup>. Uterine myometrium has a rich blood supply which is made even better by neovascularization associated with pregnancy. As a result of this ruptured cornual pregnancy is invariably associated with torrential hemorrhage leaving hysterectomy the only option to curtail life threatening blood loss.

Clinical picture depends upon whether the pregnancy is intact or ruptured. An intact cornual pregnancy may present with pain abdomen which may come and go over the days along with vaginal bleed. Whereas a ruptured cornual pregnancy is usually characterized by severe

abdominal pain pathognomonic of acute abdomen with marked hemodynamic instability. The cornerstone of early diagnosis is Transvaginal ultrasound which shows eccentric position of gestational sac, an empty uterine cavity with a thin (less than 5mm ) or even absent myometrium surrounding the sac. These findings are highly suggestive of cornual pregnancy. Doppler studies may provide useful information of increased vasculature often as a ring around the gestational sac. In experienced hands trans-vaginal ultrasound can reliably establish diagnosis of cornual ectopic in nearly 71% of cases<sup>6</sup>.

In normal pregnancy the doubling time of beta hCG is 31 – 96 hours in the first trimester. Ectopic pregnancy could be found with increased, decreased or steady beta hCG levels<sup>7</sup>. Beta hCG levels less than 1000 IU are associated with high risk of ectopic pregnancy. In cornual ectopic, there are reports of doubling of beta hCG, therefore the value of performing serial beta hCG levels is doubtful and the results should be interpreted with extreme care and caution<sup>6</sup>.

Variety of conservative management options including parental methotrexate, Ultrasound or hysteroscope guided methotrexate or potassium chloride directly into the cornual gestational sac and cornual resection by laparoscopic approach can be instituted depending upon facilities and expertise in case of an intact cornual pregnancy. Selective uterine artery embolization when conservative treatment with uterine preservation is desired is also practiced in some centers<sup>8,9</sup>. Success of conservative management can be monitored by beta hCG levels. A meta-analysis has shown reverse association of beta hCG levels with resolution and its correlation with failure of treatment. In ruptured cornual ectopic a radical lifesaving procedure like subtotal or total abdominal hysterectomy may have to be resorted to when cornuotomy or cornual resection are not deemed suitable. Use of diathermy or harmonic scalpel in cornuotomy or cornual resection help reducing blood loss. Minimal amount of tissue should be excised to prevent future uterine rupture. Round ligament can be used to cover the cornual resection site to reduce post-operative adhesions<sup>10</sup>. Preoperative methotrexate is associated with less intraoperative bleed. Caesarean section is usually performed in the next pregnancy following cornual resection to prevent risk of uterine rupture<sup>11</sup>. Uterine artery ligation may help to conserve the uterus in ruptured cornual ectopic<sup>12</sup>. Two consultant gynaecologists should be involved in laparotomy considering the risk of torrential bleed in advanced gestation at the time of ectopic rupture. If a conservative surgical intervention is done a declining serial beta hCG titer till resolution indicates success. As cornual pregnancy can rupture as late as 10 – 16 weeks it can cause life threatening intraperitoneal bleed. Therefore, expectant management has no place in confirmed cornual ectopic<sup>13</sup>. In our case diagnosis was mainly clinical which was confirmed by ultrasonography. With massive intractable cornual bleed secondary to enormous cornual rupture none of the conservative surgical approaches was adopted and immediate decision of life saving hysterectomy was taken and executed which was followed by speedy and uneventful recovery of the patient.

## CONCLUSION

Cornual pregnancy is a rare but catastrophic clinical emergency. High index of suspicion during clinical examination followed by ultrasonography which is the gold standard diagnostic tool is warranted. Prompt surgical intervention is life saving.

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