International Journal of Reproduction, Contraception, Obstetrics and Gynecology
Kalpana B et al. Int J Reprod Contracept Obstet Gynecol. 2024 Aug;13(8):2152-2155
www.ijrcog.org
pISSN 2320-1770 | eISSN 2320-1789

DOI: https://dx.doi.org/10.18203/2320-1770.ijrcog20242088

Case Report

A ruptured cornual pregnancy with previous history of salpingectomy: rare case of 3rd ectopic pregnancy

B. Kalpana[1]*, Bintu H. Dadhania[2], S. G. Balamurugan[3]

[1]Department of Reproductive Medicine, Guru Hospital, Madurai, Tamil Nadu, India
[2]Department of Obstetrics and Gynaecology, Guru Hospital, Madurai, Tamil Nadu, India
[3]Department of Surgical Oncology, Guru Hospital, Madurai, Tamil Nadu, India

Received: 02 June 2024
Accepted: 02 July 2024

***Correspondence:**
Dr. B. Kalpana,
E-mail: kalpanabalamurugan1@gmail.com

ABSTRACT

A cornual pregnancy is the most dangerous type of ectopic pregnancy since it can be misdiagnosed easily and has high mortality rate. It is diagnosed when the implantation site is at the junction between the fallopian tube and the uterus. It accounts for 2–4% of ectopic pregnancies. In a ruptured case, patient usually presents with hypovolemia and shock. For a successful outcome, early diagnosis and management are critical. A 29 years old woman, G3P0A2L0 with 8 weeks 5 days of amenorrhea conceived by IVF-ET with a history of left salpingectomy and right cornual cauterization, presented in emergency with complaints of lower abdominal pain, vomiting, burning micturition and giddiness. Per abdominal examination- soft with mild tenderness. Resuscitation started. All necessary investigations were done. Treatment started considering provisional diagnosis as septic shock following urinary tract infection (UTI). Ultrasound report showed uterus with thickened endometrium with hyperechoic irregular small gestational sac like structure in uterine cavity with hemoperitoneum in pelvis. Emergency laparotomy done considering a diagnosis of hypovolemic shock due to ruptured cornual ectopic pregnancy. Intra-operatively she was found to have hemoperitoneum with left sided ruptured cornual ectopic pregnancy. Early diagnosis is the cornerstone of cornual pregnancy before its rupture and to reduce the chances of maternal mortality. Combination of clinical features, increased serum B-hCG, high resolution trans-vaginal ultrasonography gives the correct diagnosis in most of the cases. While doing antenatal ultrasonography in the first trimester, high index of suspicion is needed to diagnose cornual ectopic pregnancy. Conservative medical and surgical management is decided on clinical condition of the patient. Our case represents that a history of salpingectomy does not eliminate the potential of ipsilateral ectopic pregnancy.

Keywords: Emergency laparotomy, Ruptured cornual ectopic, *In vitro* fertilization, Recurrent ectopic pregnancy, Ultrasonography

INTRODUCTION

Ectopic pregnancy is a significant cause of maternal mortality and morbidity throughout the world. The incidence of ectopic pregnancy after IVF-ET has been reported to be around 2-8%, higher than that after natural conception. In all the types of ectopic, cornual pregnancy is the most dangerous type. Fortunately, it accounts for 2-4% of them.[1] As the name suggests, it is diagnosed when the implantation site is at the cornu of the uterus.

Out of all the risk factors, history of recurrent ectopic pregnancy, ipsilateral salpingectomy and assisted reproductive technique (ART) will increase further chances of cornual pregnancy. Patients with cornual pregnancy, usually present with abdominal pain, abnormal vaginal bleeding and signs of haemorrhagic shock due to its rupture.

The diagnosis before rupture is very difficult in such cases. Use of serum β-hCG, high resolution sonography and

laparoscopy can lead to early diagnosis. It may result in rupture of uterine wall with excessive intra-peritoneal bleeding and shock. For treatment of ruptured cases, resuscitation and blood transfusion followed by laparotomy is preferred. Laparoscopy can also be an option in stable cases. Conservative management by methotrexate injections can be done in unruptured cases.

CASE REPORT

Our patient was a 29 years old woman, married for 7 years, G3P0A2L0 with 8 weeks 5 days of pregnancy, conceived by IVF-ET. Her first pregnancy was spontaneously conceived which came out as left tubal ruptured ectopic pregnancy managed by left sided salpingectomy in 2019. Her second pregnancy was also spontaneously conceived right tubal unruptured ectopic pregnancy managed by medical management in 2020. After that, diagnostic laparo-hysteroscopy with right cornual cauterization was done in 2022 before proceeding to IVF. Left sided tube was absent in the findings due to previous surgery.

In current pregnancy, routine antenatal TVS was done showing intra-uterine gestational sac with CRL of 6 weeks 1 day with cardiac activity present. At this time patient presented with fever and burning micturition, diagnosed as urinary tract infection and treated with IV antibiotics for 1 week (Figure 1).

Table 1: Blood reports were as following.

Blood investigations on admission	Report
Haemoglobin	8.6 gms%
Total WBC counts	35,000/cumm
Blood group	O positive
Renal function test	Normal
Coagulation profile	Normal
C-reactive protein	8.61
S. procalcitonin	0.42
NT-pro-BNP	99.5
S. β-HCG	15,546 mIU/ml

Emergency laparotomy done under spinal anaesthesia as patient was not fit for laparoscopy due to severe shock. Midline vertical incision given. Hemoperitoneum was present, around 1000 ml of blood and blood clots removed. Uterus was bulky with left cornual ruptured ectopic pregnancy showing gestational sac of 2×2 cm attached outside of cornu and same sized rent on cornu with active bleeding. Products of conception removed, margins trimmed and rent was sutured. Intraperitoneal drain was kept and patient shifted to ICU for post op monitoring. Intra op 2 units PCV and 4 units FFP were transfused. Biopsy report came afterwards showing products of conception. Post op patient was monitored in ICU and treated with IV higher antibiotics, analgesics and antacids (Figure 2).

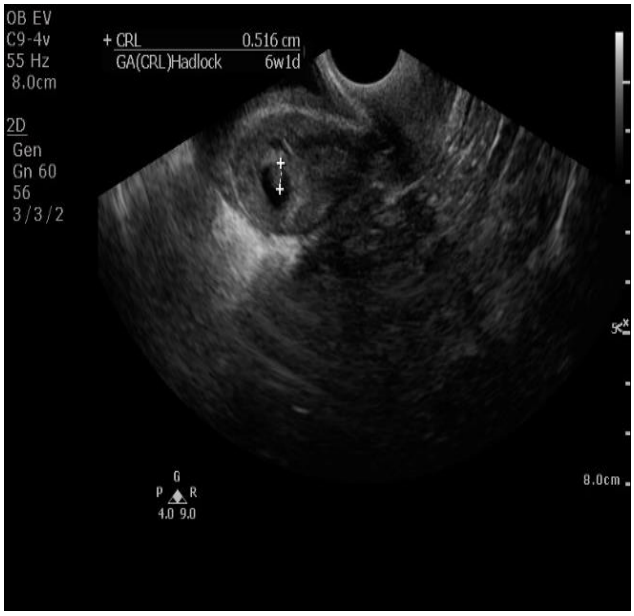

Figure 1: Antenatal 2-dimensional ultrasonography showing intra-uterine gestational sac.

After 2 weeks, patient presented to emergency department at Guru Hospital, Madurai with complaints of lower abdominal pain, 3 episodes of vomiting, burning micturition and giddiness for 3 hours. On examination, patient was conscious, oriented and irritable. Her vitals were temp- 95'F, pulse-122/min, BP- 90/70 mmHg and SpO_2- 99% on room air. Per abdomen- soft with mild tenderness. In view of recent H/O – UTI, provisional diagnosis was made as severe UTI associated septic shock so patient was admitted in ICU for resuscitation. All basic investigations sent. IV fluids and injection Meropenem were started. In view of refractory shock not responding to IV fluid resuscitation, inotropic support- injection Norad was started. On subsequent vitals monitoring, tachycardia was still present and BP was maintaining with ionotropic supports. Due to low Hb, blood products were arranged and blood transfusion was started (Table 1).

Moreover, patient had history of spotting per vaginum 2 days before. So, bedside USG was done to rule out incomplete abortion and ruptured cornual pregnancy. Scan showed uterus with thickened endometrium with hyperechoic irregular small gestational sac like structure in uterine cavity. Hemoperitoneum noted in pelvis.

So, in a view of history, all available reports and USG report, diagnosis of hypovolemic shock due to ruptured cornual ectopic pregnancy kept and decision of emergency laparotomy taken.

Serum β-hCG was 15,546 mIU/ml on admission. On post op day 1, it was 4200 mIU/ml and after 48 hours, it was 1800. After 1 week, it was reduced to 42.12 mIU/ml. As patient's vitals got normal, drains removed and discharged thereafter.

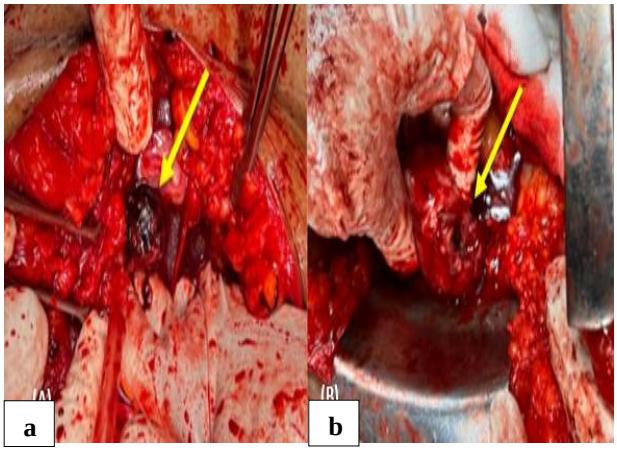

Figure 2 (a and b): Intra-operative findings of left ruptured cornual pregnancy with rent on cornu and hemoperitoneum.

DISCUSSION

Cornual ectopic pregnancy is considered a rare entity accounting for 2–4% of all ectopic pregnancies.[1] It is the most dangerous type and can be misdiagnosed easily leading to high mortality rate. It is diagnosed when the implantation site is at the junction between the fallopian tube and the uterus. Because of myometrial stretchability, they present relatively late, around 7 to 12 weeks of gestation. Due to rich blood supply in the cornua, derived from Sampson's artery, which constitutes an anastomosis of the uterine artery and ovarian artery, there will be significant maternal haemorrhage leading to hypovolemia and shock.

It may be confused with an interstitial pregnancy. As per anatomic definition, the term cornual pregnancy is an intracavitary gestation in the region of the uterine cornua, and the term interstitial pregnancy is confined to those extrauterine or ectopic pregnancies located within the interstitial part of the fallopian tube.[2]

Risk factors of cornual pregnancy include assisted reproductive techniques (ART), previous tubal pregnancies, tubal surgeries, a history of pelvic inflammatory disease, fibroids and sexually transmitted diseases. Transfer of multiple embryos, a transfer near the uterine horn, high pressure applied while transferring; contribute the cornual risk.[3] Bilateral salpingectomy is thought to be another risk factor.[3] Due to the increasing use of ART procedures, the cornual pregnancies should be kept in mind by the clinicians.

The most encountered symptoms are abdominal pain, abnormal vaginal bleeding and discomfort. The signs associated with haemorrhagic shock will also be evident in ruptured cases i.e. pallor, tachycardia, hypotension, abdominal guarding and rigidity and may be abdominal distension due to hemoperitoneum.

Early diagnosis is the cornerstone of cornual pregnancy before its rupture and to reduce the chances of maternal mortality. Combination of clinical features, increased serum β-hCG, high resolution trans-vaginal ultrasonography gives the correct diagnosis in most of the cases. Diagnosis is challenging because on ultrasound, the pregnancy often appears to be intrauterine. Sagittal as well as transverse sections of uterus are seen in trans-vaginal scan which shows eccentrically located gestational sac (1 cm from lateral wall of uterine cavity) and a thin myometrial layer (<5 mm) surrounding the gestational sac.[2] In contrast, our patient had symtoms related to sepsis with a known history of unilateral salpingectomy and unilateral cornual cauterization, it was tough to reach at correct diagnosis earlier.

The treatment approach for ruptured cases is usually laparotomy after basic resuscitation and blood transfusion. Wedge resection of the cornua and reconstruction of the uterine wall is indicated. If the condition of patient is hemodynamically stable, laparoscopic management can also be considered. In severe cases if the uterine wall is damaged, hysterectomy may be needed.[4] While, in unruptured cornual pregnancy, conservative management can be done by systemic or local methotrexate injections.[4] Monitoring and follow-up is very important in this case, as rupture may occur even after medical therapy.

CONCLUSION

Cornual pregnancy after salpingectomy and cornual cauterization is very rare entity resulting in delayed diagnosis. Early diagnosis and prompt intervention are crucial in order to diminish the morbidity and mortality in such cases. So, it should be kept in mind while doing transvaginal scan in natural as well as IVF-ET pregnancy. History of salpingectomy does not eliminate the possibility of ipsilateral ectopic pregnancy. Conservative medical and surgical management is decided on individual cases. Laparotomy is generally preferred. The prognosis of cornual pregnancy is based on clinical condition of the patient.

Funding: No funding sources
Conflict of interest: None declared
Ethical approval: Not required

REFERENCES

1. Dagar M, Srivastava M, Ganguli I, Bhardwaj P, Sharma N, Chawla D. Interstitial and cornual ectopic pregnancy: conservative surgical and medical management. J Obstet Gynecol India. 2018;68(6):471-6.
2. Sargin MA, Tug N, Ayas S, Yassa M. Is Interstitial Pregnancy Clinically Different From Cornual Pregnancy? A Case Report. J Clin Diagn Res. 2015;9:QD05-6.

3. Sharma N, Rohini, Upasana. An Ectopic Pregnancy in the Tubal Interstitium: Beware. J Clin Diagn Res. 2013;7:160-2.
4. Faraj R, Steel M. Management of cornual (interstitial) pregnancy. Royal Coll Obstet Gynaecol. 2007;9:249-55.

Cite this article as: Kalpana B, Dadhania BH, Balamurugan SG. A ruptured cornual pregnancy with previous history of salpingectomy: rare case of 3rd ectopic pregnancy. Int J Reprod Contracept Obstet Gynecol 2024;13:2152-5.