

# Diagnosis of Cornual Pregnancy in the Emergency Room: A Rare Case Report

Lili-Ji Helou, BS<sup>1</sup>, Hiba Hamdar, MD<sup>2</sup>, Georges Raad, PhD<sup>3,4</sup>

<sup>1</sup>Higher institute of Nursing Sciences, Holy Spirit University of Kaslik (USEK), Jbeil, Lebanon

<sup>2</sup>Emergency Department, Notre Dame Maritime Hospital, Byblos, Lebanon

<sup>3</sup>Al Hadi Laboratory and Medical Centre, Beirut, Lebanon

<sup>4</sup>Holy Spirit University of Kaslik (USEK), Jounieh, Lebanon

Corresponding Author: Hiba Hamdar, Byblos, Lebanon, [hiba.hamdar@live.com](mailto:hiba.hamdar@live.com)

doi: <https://doi.org/10.38179/ijcr.v3i1.201>

Received: 2022.03.16  
Accepted: 2022.06.28  
Published: 2022.09.04

**Financial support:** None  
**Conflict of interest:** None  
**Patient Consent:** Written consent was obtained from the patient for the publication of this case and accompanying images

## Abstract

**Introduction:** Ectopic or extrauterine pregnancy is a life-threatening medical condition in which a fertilized egg is implanted elsewhere than in the uterine cavity, commonly in the fallopian tubes. However, it can also occur in the peritoneal cavity, ovaries, and cervix. There are several etiological factors contributing to ectopic pregnancies, such as a history of pelvic inflammatory diseases, habitual abortions, and miscarriages, previous ectopic pregnancies, fertility procedures, as well as increased maternal age that has been correlated with a higher risk of carrying an ectopic pregnancy. Often, the first alerting sign in any ectopic pregnancy is a pain in the pelvic region, along with vaginal bleeding usually spotted between the 6th and 11th gestational week. Other symptoms include vomiting, nausea, tachycardia, and in severe cases hypovolemic shock due to internal bleeding induced by the rupture of the tubes. The key to diagnosing an ectopic pregnancy is transvaginal ultrasound, alongside the measurement of beta human chorionic gonadotropin hormone (beta-hCG) concentrations, which are usually found to be low in such cases. The management of ectopic pregnancy is either medical or surgical.

**Case report:** We are reporting the case of a 32-year-old pregnant woman, who presented to the emergency department for diffuse abdominal pain and recurrent episodes of vomiting and diarrhea of one-week duration. The patient was stable on admission, but later on, she showed a rapid shift in her vital signs. Blood tests were obtained, and pelvic ultrasound was done, followed by a Computed Tomography (CT) scan that revealed the presence of a right cornual ectopic pregnancy. A rapid surgical intervention was carried out to save the patient's life and alleviate the pain.

**Conclusion:** Ectopic pregnancy is an urgent condition that needs to be treated immediately to avoid its fatal consequences. Several risk factors stand behind it, and a usual history and physical gynecological examinations are insufficient to detect it, hormone screening tests additionally to ultrasounds are highly recommended to decrease the incidence of mortality. A proper follow-up with a specialist could avoid the risk of an ectopic pregnancy as well as its undesirable outcomes.

**Keywords:** *Cornual ectopic pregnancy, Etiological factors, Complications, Ruptured ectopic pregnancy, Diagnostic methods, Management*

## Introduction

Cornual or interstitial ectopic pregnancy is an atypical type among ectopic pregnancies [1]. The gestational sac is usually implanted in the interstitial part of the fallopian tube and invades the uterine wall [2]. Cornual pregnancies although rare to happen, could have catastrophic consequences, if the diagnosis is missed [3], due to the fact that they could lead to uterine rupture mainly and profuse hemorrhage [4]. Increased incidence of ectopic pregnancies is mainly correlated with a history of pelvic inflammatory diseases, prior history of an ectopic pregnancy, associated reproductive technologies, smoking, drug abuse, habitual abortions, or other surgical interventions in the reproductive tract, and the classic triad of symptoms is abdominal pain, amenorrhea and vaginal bleeding that occurs less often [5]. An ectopic pregnancy is usually diagnosed by carrying out a transvaginal ultrasound, however, the measurement of beta hCG levels could be a useful way of identifying ectopic pregnancies which aren't found during an ultrasound, as the level of this hormone tends to be lower than in a normal viable intrauterine pregnancy [6,7]. Ectopic pregnancy can be treated medically with methotrexate or surgically via salpingectomy or salpingostomy [8].

## Case Report

A 32-year-old, four weeks of gestation pregnant woman presented to the emergency department with complaints of four consecutive days of diffuse abdominal pain, several episodes of vomiting, and diarrhea one week prior to her admission and for which she was prescribed anti-spasmodic drugs twice daily. Moreover, the patient reported spotting vaginal blood clots that are black in appearance one day before being hospitalized. Apart from having a history of three repetitive miscarriages, the patient had no relevant past medical diseases or any prior surgical interventions. Upon her admission, the patient was hemodynamically stable, all vital signs were within normal levels: blood pressure 10/7 mmHg, heart rate 100 beats per minute,

temperature 36 degrees, and oxygen saturation 97%. During the clinical exam, the patient looked pale, with diffuse abdominal rigidity, and peripheral cyanosis. 15 minutes later, blood pressure was monitored again by the physician and turned out to be dropping drastically to 6/5 mmHg, hence patient developed a hypovolemic shock. An intravenous line was inserted from which blood was withdrawn, and the patient received a continuous infusion of 1 liter of normal saline and 1 L of lactate ringer solution. Blood test results for white blood cells of  $30.2 \times 10^3/\text{mm}^3$ , 84% for the neutrophils, 9.6% for the leukocytes, 8 g/dl for hemoglobin, 25% for hematocrit,  $360 \times 10^3/\text{mm}^3$  for platelet counts, 65g/l for C reactive protein, and a beta hCG of 4000 mIU/ml, while electrolytes were changing within normal levels. Two units of blood from the O Rh positive group were transfused to the patient, a pelvic ultrasound was performed followed by an abdominal CT scan, which showed active bleeding in the peritoneal cavity with several hematomas in the Douglas pouch.



Figure 1: CT scan shows the presence of hemorrhage in the Morison's pouch.



Figure 2: CT scan shows hematoma in the uterus of 11x7 cm.

These findings were suggestive of a right cornual ectopic pregnancy. Surgical intervention was guided by two specialists, an obstetric-gynecologist and a general surgeon. Laparotomy was performed with curettage of the right cornea. After surgery, the patient was put on antibiotics.

## Discussion

A cornual ectopic pregnancy is a rare type of pregnancy that takes place in the interstitial part of the fallopian tubes, closely to the uterine blood supply, therefore a rupture of this pregnancy could cause severe bleeding [9]. The risk factors of cornual ectopic pregnancy are a history of pelvic inflammatory diseases, surgical procedures such as salpingectomy, assisted reproductive devices, and fertility [10,11]. However, several studies have shown that recurrent miscarriage episodes seem to increase the incidence of ectopic pregnancy [12], moreover, there is a relationship between ectopic pregnancies and multiple exposures to abortions. Studies have shown that abortions favor the spread of infections and microorganisms to the tubes, hence creating pelvic inflammatory diseases and scarring of the tubes [13]. As a result, women with recurrent abortions tend to develop pelvic infections which are the major cause of tubal pregnancy [14].

The clinical presentation of cornual pregnancy varies upon whether it has been ruptured or not [15]. When unruptured, the patient may present with diffuse abdominal pain and vaginal bleeding [2], whereas when ruptured, the patient may look pale, and shocked with hemodynamic instability [16]. In this case report, the patient had a history of three consecutive miscarriages, and when brought to our emergency department, she became unstable and hypotensive, and CT scan of the pelvis showed a rupture cornual ectopic pregnancy along with hemoperitoneum.

The gold standard diagnostic method of an ectopic pregnancy is transvaginal ultrasonography which shows usually an empty uterine cavity [17]. However, the diagnosis of a cornual ectopic pregnancy

may be based on several ultrasound features such as hemoperitoneum, and free fluid in the pelvis and Douglas pouch [18, 19]. Beta hCG levels could be a diagnostic aid in ectopic pregnancy. With a viable intrauterine pregnancy, the level of beta hCG rises continuously in maternal serum between the 8th and 12th weeks of gestation and then declines to reach a plateau at the 20th week [20], however, an absolute level of beta hCG of 1500 mIU/ml in the absence of any visualized intrauterine pregnancy, could be taken into consideration for a probable ectopic pregnancy [7,11,21].

The management of an ectopic pregnancy could be either medically by methotrexate in patients with asymptomatic cornual pregnancies or surgically [22, 23]. However, in a ruptured ectopic pregnancy, an immediate surgical intervention with the presence of a specialized gynecologist is necessary, where the excessive bleeding might be life-threatening [24]. In our case, a laparotomy was performed, and a sharp curettage of the right cornea was done to ensure good hemostasis.

## Conclusion

Cornual pregnancy in most cases is associated with drastic and severe life-threatening conditions, including the death of the mother if left untreated. Diagnosis should be done properly along with rapid management, since cornual ectopic pregnancy may carry high rates of mortality. Pregnancy is a complex process due to the fact that it can carry out challenges. For that reason, every pregnant woman must follow up on her pregnancy with a specialist, to ensure safety and maternal and fetal well-being.

## References

1. Santos LTR, Oliveira SCS, Rocha LGA, Sousa NDS, Figueiredo RS. Interstitial Pregnancy: Case Report of Atypical Ectopic Pregnancy. *Cureus*. 2020;12(5):e8081. Published 2020 May 13. PMID: 32542136. <https://doi.org/10.7759%2Fcureus.8081>

2. Alam IP. Cornual Pregnancy: A Case Report. Faridpur Med. Coll. J. 2013;8(2):102-104.
3. Sharma N , Shetty M . A Rare Case Report of Cornual Pregnancy. Obstet Gynecol Int J. 2016.  
<https://doi.org/10.15406/ogij.2016.05.00179>
4. Yang C, Huang D, Zhang S . Chronic cornual ectopic pregnancy presenting as large cornual mass after in vitro fertilization-embryo transfer: A case report. Laparosc, Endosc and Robot Surg. 2021.  
<https://doi.org/10.1016/j.lers.2019.09.001>
5. Dagar M, Srivastava M, Ganguli I, Bhardwaj P, Sharma N, Chawla D. Interstitial and Cornual Ectopic Pregnancy: Conservative Surgical and Medical Management. J Obstet Gynaecol India. 2018;68(6):471-476. PMID: 30416274.  
<https://doi.org/10.1007/s13224-0171078-0>
6. Dogra V, Lin EP. Diagnostic Clues to Ectopic Pregnancy. RadioGraphics. 2008;28(6).  
<https://doi.org/10.1148/rg.286085506>
7. Murray H, Baakdah H, Bardell T, Tulandi T. Diagnosis and treatment of ectopic pregnancy. CMAJ. 2005;173(8):905-912. PMID:16217116.  
<https://doi.org/10.1503/cmaj.050222>
8. Hendriks E, Rosenberg R, Prine L. Ectopic Pregnancy: Diagnosis and Management. Am Fam Physician. 2020;101(10):599-606.
9. Mansour M, Hamza A, AlMarzook A, Kanbour IM, Alsuliman T, Kurdi B. A ruptured cornual pregnancy successfully managed in a patient with a history of oophorectomy and salpingectomy: A rare case report. Clin Case Rep. 2021;9(10):e04934. Published 2021 Oct 15. PMID: 34691456.  
<https://doi.org/10.1002/ccr3.4934>
10. Tulandi T, Al-Jaroudi D. Interstitial pregnancy: results generated from the Society of Reproductive Surgeons Registry. Obstet Gynecol. 2004;103(1):47-50. PMID: 14704243.  
<https://doi.org/10.1097/01.AOG.0000109218.24211.79>
11. Wachyu H. A cornual ectopic pregnancy case: diagnosis, etiology and its management. Med J Indones. 2008;18:64-68.  
<https://doi.org/10.13181/mji.v18i1.333>
12. Pietropolli A, Ticconi, C. Ectopic pregnancy in women with recurrent miscarriage. J Obstet Gynaecol Res. 2018;44(5):852-860.  
<https://doi.org/10.1111/jog.13607>
13. Skjeldestad FE, Gargiullo PM, Kendrick JS. Multiple induced abortions as risk factor for ectopic pregnancy. A prospective study. Acta Obstet Gynecol Scand. 1997;76(7):691-696. PMID: 9292646.  
<https://doi.org/10.3109/00016349709024612>
14. Qvigstad E, Skaug K, Jerve F, Fylling P, Ulstrup JC. Pelvic inflammatory disease associated with Chlamydia trachomatis infection after therapeutic abortion. A prospective study. Br J Vener Dis. 1983;59(3):189-192. PMID: 6850266.  
<https://doi.org/10.1136/sti.59.3.189>
15. S M S, T C, Singh N N, Singh N B, T S N. A ruptured left cornual pregnancy: a case report. J Clin Diagn Res. 2013;7(7):1455-1456. PMID: 23998092.  
<https://doi.org/10.7860/JCDR/2013/5644.3154>
16. Pek JH, Elangovan V. Cornual Pregnancy with Uterine Rupture: A Case Report. Eurasian J. Emerg. Med. 2021;20(4):283-286.  
<https://doi.org/10.4274/eajem.galenos.2021.89106>

17. Winder S, Reid S, Condous G. Ultrasound diagnosis of ectopic pregnancy. *Australas J Ultrasound Med.* 2011;14(2):29-33. PMID: 28191110. <https://doi.org/10.1002/j.2205-0140.2011.tb00192.x>

18. Sawyer E, Jurkovic D. Ultrasonography in the diagnosis and management of abnormal early pregnancy. *Clin Obstet Gynecol.* 2007;50(1):31-54. PMID: 17304023. <https://doi.org/10.1097/GRF.0b013e31802f71db>

19. Fleischer AC, Pennell RG, McKee MS, et al. Ectopic pregnancy: features at transvaginal sonography. *Radiology.* 1990;174(2):375-378. PMID: 1688662. <https://doi.org/10.1148/radiology.174.2.1688662>

20. Cacciatore B, Tiitinen A, Stenman UH, Ylöstalo P. Normal early pregnancy: serum hCG levels and vaginal ultrasonography findings. *Br J Obstet Gynaecol.* 1990;97(10):899-903. PMID: 2223680.

21. Taran FA, Kagan KO, Hübner M, Hoopmann M, Wallwiener D, Brucker S. The

Diagnosis and Treatment of Ectopic Pregnancy. *Dtsch Arztebl Int.* 2015;112(41):693-705. PMID: 26554319. <https://doi.org/10.3238/arztebl.2015.0693>

22. Cecchino GN, Araujo Júnior E, Elito Júnior J. Methotrexate for ectopic pregnancy: when and how. *Arch Gynecol Obstet.* 2014;290(3):417-423. PMID: 24791968. <https://doi.org/10.1007/s00404-014-3266-9>

23. S M S, T C, Singh N N, Singh N B, T S N. A ruptured left cornual pregnancy: a case report. *J Clin Diagn Res.* 2013;7(7):1455-1456. PMID: 23998092. <https://doi.org/10.7860/JCDR/2013/5644.3154>

24. Tullius TG Jr, Ross JR, Flores M, Ghaleb M, Kupesic Plavsic S. Use of three-dimensional power Doppler sonography in the diagnosis of uterine arteriovenous malformation and follow-up after uterine artery embolization: Case report and brief review of literature. *J Clin Ultrasound.* 2015;43(5):327-334. PMID: 25042165. <https://doi.org/10.1002/jcu.22210>