



## **An Uncommon Case of Failed Intrauterine Contraception resulting in an Ectopic Pregnancy and its Diagnostic Challenges during the COVID 19 Pandemic.**

(1) **DR FATHIMA SHEZON MOHIDEEN**

CONSULTANT FAMILY PHYSICIAN, PRIMARY HEALTH CARE CORPORATION, QATAR  
EMAIL: [fmohideen@phccc.gov.qa](mailto:fmohideen@phccc.gov.qa)

(2) **DR AMEER MUHAMMAD KHAN**

CONSULTANT FAMILY PHYSICIAN, PRIMARY HEALTH CARE CORPORATION, QATAR  
EMAIL: [amkhan@phcc.gov.qa](mailto:amkhan@phcc.gov.qa)

(3) **SAFFIYAH FATHIMA MOHIDEEN**

IGCSE STUDENT, DOHA COLLEGE, QATAR  
EMAIL: [smohideen@dohacollege.com.qa](mailto:smohideen@dohacollege.com.qa)

### **Abstract**

The most common clinical presentation of ectopic pregnancy is first-trimester vaginal bleeding and/or abdominal pain. The vaginal bleeding associated with ectopic pregnancy is typically preceded by amenorrhea. Here we present a case of a 35-year-old woman who had an intrauterine contraceptive device (IUCD) for contraception and presented with typical symptoms of ectopic pregnancy but without a missed period. This case study looks at the importance of conducting a pregnancy test in cases that present with the above symptoms even if the history suggests that they have had a regular period. It also highlights the diagnostic challenges faced when consulting patients that could potentially have a life-threatening emergency via a virtual telephone consultation. The Covid-19 pandemic has increased the clinician's reliance on virtual consults for routine health encounters. The clinician needs to remain vigilant and be able to identify any red flags by taking a detailed history and whenever in doubt, call the patient in to be seen face to face.

**Key words:** ectopic pregnancy, Intrauterine contraceptive device, primary health care center, Hashimoto thyroiditis, Irritable bowel syndrome, long acting reversible contraception.



## المخلص:

الأعراض السريريّة الأكثر شيوعاً للحمل خارج الرحم هو النزيف المهبلّي في الثلث الأول من الحمل و / أو ألم البطن. عادة ما يسبق النزيف المهبلّي المرتبط بالحمل خارج الرحم انقطاع الطمث (الدوره الشهرية). نقدم هنا حالة امرأة تبلغ من العمر ٣٥ عامًا كان لديها جهاز مانع الحمل داخل الرحم (IUCD) لمنع الحمل وكانت تعاني من أعراض نموذجية للحمل خارج الرحم ولكن دون انقطاع الدورة الشهرية. تبحث دراسة الحالة هذه في أهمية إجراء اختبار الحمل في الحالات التي تظهر عليها الأعراض المذكورة أعلاه حتى لو أن الدورة الشهرية كانت منتظمة. كما يسلط الضوء على التحديات التشخيصية التي يتم مواجهتها عند استشارة المرضى الذين قد يكون لديهم حالة طوارئ تهدد الحياة عبر استشارة هاتفية افتراضية. زاد جائحة Covid-19 من اعتماد الأطباء على الاستشارات الافتراضية في اللقاءات الصحية الروتينية. يحتاج الطبيب إلى أن يظل يقظاً وأن يكون قادرًا على تحديد المؤشرات الخطره من خلال أخذ القصة المرضيه للمريض وفي حالة الشك ، اتصل بالمريض ليتم الاستشاره داخل العياده وجها لوجه .

الكلمات المفتاحية: الحمل خارج الرحم ، جهاز منع الحمل داخل الرحم ، مركز الرعاية الصحية الأولية ، التهاب الغدة الدرقية هاشيموتو ، متلازمة القولون العصبي ، وسائل منع الحمل طويلة المفعول

## Introduction

The possibility of ectopic pregnancy should be considered in women with an intrauterine device who present with abdominal pain especially in connection with missed periods or if an amenorrhoeic woman starts bleeding (Faculty of Sexual & Reproductive Healthcare (FSRH), 2019). However, in this case the patient presented with a history of regular periods and lower abdominal pain. She also had several other chronic conditions like irritable bowel syndrome, hashimoto thyroiditis, chronic gastritis and recurrent emergency visits with abdominal pain and bloating which could have been considered as part of the differential diagnosis. This could have misled the clinician resulting in missing a life-threatening diagnosis of an ectopic pregnancy particularly as the history was taken via a virtual telephone consultation.

In this case the clinician decided to perform a pregnancy test although the patient had not missed a period or had amenorrhea and decided to call in the patient for a face- to- face examination. During the COVID 19 pandemic primary health care centers had resorted primarily to virtual telephone consultations to protect both patients as well as the staff.



This case study highlights the limitations of virtual consultations in reaching the diagnosis, the importance of taking a detailed history over the phone as well as making a clinical decision on when a patient should be invited for a face- to -face consultation. Furthermore, it also highlights the importance of conducting a pregnancy test in women with irregular bleeding and pain with an IUCD even if they have not missed a period.

### **Case presentation**

A 35-year-old female patient had a telephone appointment booked at the primary healthcare center with a clinician. She complained of mild intermittent lower abdominal pain, which was dull in character and irregular light bleeding for 2 days. Her menstrual cycles were regular every 28 days. She had her regular period that month. However, she did mention that the period was unusually heavy and lasted 9 days. After a break of 9 days with no bleeding she re-started to have mild bleeding with lower abdominal pain and no clots. She had no other associated symptoms. She had a copper intrauterine device for contraception, which was inserted 10 months ago. Her last smear test done a year ago was normal.

Previously she has used the combined oral contraceptive pill for 10 years between her pregnancies. However, this was stopped by the gynaecologist to investigate if her bloating would improve. She was then given a 12 weekly medroxyprogesterone acetate intramuscular injection for contraception. After which the patient chose to have the CU IUD inserted.

Her past medical history showed that she had hashimoto thyroiditis, chronic gastritis, irritable bowel syndrome and mild anxiety for which she was being followed up regularly by the endocrinologist, gastroenterologist, and the psychiatrist. Her records further showed that she had several visits to the emergency departments with symptoms of bloating and abdominal pain for which she was investigated extensively. She had a cholecystectomy 5 years ago and a tonsillectomy 9 years ago.

She was unemployed and lived with her husband and three children in a house. The youngest child was 3 years old. She was pregnant 4 times with three live pregnancies and one first trimester miscarriage. She had 2 previous Cesarean sections and one normal vaginal delivery that were all uneventful.

Having gathered the above history via the virtual telephone consultation as well as from the patient's records the clinician advised her to have a urine test both for pregnancy as well as for a lower urinary tract infection. The physician also decided to call the patient in for an examination on the same day.

#### *Examination*

Physical examination revealed an overweight lady with a weight of 92 kg, BMI of 30.7, temperature of 36.3, Blood pressure of 112/78, a pulse rate of 72 and generally looked well with no pallor. Abdominal examination revealed a soft lax abdomen with slight tenderness in the left iliac fossa. There were no masses felt or rebound tenderness.

Her urine pregnancy test was positive, and her urinalysis was normal.

With the differential diagnosis of ectopic pregnancy this patient was immediately referred to the nearest emergency department. Subsequently she had a Beta HCG test and an Ultrasound (US) scan performed in the emergency that confirmed a left ectopic pregnancy and the IUD was still in situ correctly positioned. On vaginal examination she had very minimal bleeding and no tenderness. The IUD was removed and the patient was sent home with advice to repeat her Beta HCG in 48 hours. She was also safety netted and advised to return back if any of her symptoms worsened.

The patient was readmitted in hospital where she was treated with methotrexate injection. She responded well to the treatment with decreasing Beta HCG levels. She was discharged on day 13 following a negative pregnancy test and a Beta HCG level of 7.

## Investigations

Initial Beta HCG was 385.5

Repeat Beta HCG (after 48 hours) was 326.4

Hb 13.6 gm/dl

Coagulation profile - APTT 32.2 seconds, INR 1.0, PT 12 seconds

Blood group - B positive

LFT and renal functions were normal

Us scan -AV bulky uterus measures about 8.5 x 4.4 x 7.1 cm. Endometrial thickness = 9.7 mm, it shows IUCD in situ. No intrauterine gestational sac seen at the time of the examination. Fetal growth based on her LMP consistent with 6 weeks and 1 day. Left adnexal thick-walled tiny cystic-like structure adjacent to the left ovary, no intra cystic fetal pole or yolk sac detected at the time of examination, it measures about 1.0 x 0.6 cm, it shows no vascularity by Doppler, surrounded by tiny inhomogeneous structure non-vascular, hematoma?? , The sonographic appearance is suggestive of left ectopic pregnancy +/-small sized hematoma. Both ovaries look unremarkable, bilateral ovarian follicles seen. Right ovary = 2.9 x 1.2 cm. Left ovary = 2.9 x 1.8 cm. Minimal free pelvic fluid detected.

## Discussion

An ectopic pregnancy is an extra uterine pregnancy. The majority occurs in the fallopian tube (96 percent), but other possible sites include cervical, interstitial, hysterotomy (cesarean) scar, intramural, ovarian, or abdominal (Bouyer et al., 2002). The major cause of ectopic pregnancy is disruption of normal tubal anatomy from factors such as infection, surgery, congenital anomalies, or tumours. Anatomic distortion can be accompanied by functional impairment due to damaged ciliary activity. The highest risk is associated with a history of prior ectopic pregnancy or tubal surgery (Bouyer et al., 2003).

Clinical manifestations of ectopic pregnancy typically appear six to eight weeks after the last normal menstrual period but may occur later, especially if the pregnancy is at an extra uterine site other than the fallopian tube.



Although ectopic pregnancy may be asymptomatic the most common clinical presentation is first-trimester vaginal bleeding and/or abdominal pain (Ikatout et al., 2013). Clinicians should consider ectopic pregnancy as a diagnosis in any patient of reproductive age and present with vaginal bleeding and/or abdominal pain particularly if amenorrhea of >4 weeks preceded the current vaginal bleeding, and the pregnancy status is uncertain.

Women using hormonal contraception, or an intrauterine device (IUD) are at very low risk of pregnancy, either intrauterine or ectopic. Surveillance Study (EURAS) for Intrauterine Devices did find that the LNG-IUS was superior in terms of efficacy, although the failure rate was low with both types of devices. This prospective cohort study in a typical population of over 61 000 users found an overall Pearl index (PI; pregnancies Per 100 woman-years) of 0.06 [95% confidence interval (CI) 0.04–0.09] in the LNG-IUS cohort and 0.52 (95% CI 0.42–0.64) in the Cu-IUD users (Heinemann et al., 2015). However, if they conceive, the probability of an ectopic pregnancy is generally higher than in women not using contraception. The estimated absolute risk of ectopic pregnancy in copper IUD users is approximately one-half the risk in women who are not using any type of contraceptive (Sivin, 1991). Among IUD users with contraceptive failure, the risk of ectopic pregnancy is high (1 in 2 pregnancies for the levonorgestrel IUD and 1 in 16 pregnancies for the copper IUD, versus 1 in 50 pregnancies among non contraceptive users) (Furlong, 2002) (Li et al., 2014). In a case-control study, the odds of ectopic pregnancy were 16.4-fold in women with current use of an IUD (Li et al., 2015).

Once clinically suspected the diagnosis of ectopic pregnancy is based on a combination of serum quantitative human chorionic gonadotropin levels and transvaginal ultrasound findings. The US findings typically show no evidence of an intrauterine pregnancy and visualization of a complex inhomogeneous extra ovarian adnexal mass with or without an empty gestational sac, or intraperitoneal bleeding.

Early diagnosis and evaluating the patient for hemodynamic instability is very important as if the structure in which the ectopic pregnancy is implanted ruptures it can result in life threatening

haemorrhage. Failure to diagnose ectopic pregnancy before tubal rupture increases maternal morbidity and mortality and limits treatment options.

The most common treatments of ectopic pregnancy are pharmacologic therapy with methotrexate (MTX) or surgical treatment. Only a small proportion of patients are candidates for expectant management. The overall success rate of medical treatment in properly selected patients is nearly 90 percent (Barnhart et al., 2003).

### **Conclusion**

Since the start of the COVID 19 pandemic primary health care centers have resorted to telephone consultations as the primary method of communication. Face to face consultations are only conducted for urgent and emergency cases depending on the severity and the type of complaint. In this case the clinician initially spoke to the patient over the telephone and took a detailed history and reviewed the patient's notes. The clinician advised the patient to come in for a face-to-face consultation, as it required an examination to make an accurate diagnosis. This patient had several other chronic conditions that could have been in the list of differentials and misled the clinician resulting in missing a potentially life-threatening diagnosis like ectopic pregnancy.

Pregnancy tests are readily available and easily performed in primary health care centers. The test is usually done if a pregnancy is suspected in a woman who is amenorrhoeic or has missed her period. In this case the clinician decided to perform a urine pregnancy test based on the patient's history taken over the virtual telephone consultation. The positive pregnancy test together with the examination findings helped the clinician to suspect an ectopic pregnancy and refer the patient promptly.

The learning points from this case is that the possibility of ectopic pregnancy should be considered and a pregnancy test must be done in women with an intrauterine method who present with irregular bleeding and/or abdominal pain irrespective of the last menstrual period. Furthermore, IUD users should be counselled about symptoms of ectopic pregnancy at the time



of insertion. If a pregnancy test is positive, an ultrasound scan is urgently required to locate the pregnancy.

It also highlights the barrier of virtual telephone consultations and its limitations in reaching a diagnosis. It also emphasizes the importance of taking a detailed history, reviewing the patient's existing notes, and more importantly making that all important clinical decision as to when the patient should be invited for a face- to- face consultation. It also indicates the need for educational resources and guidelines for physicians conducting virtual consultations to ensure safe management of patients. As much as we are trying to protect our patients and staff from the COVID 19 pandemic it is equally or even more important to ensure that they are diagnosed and managed appropriately and in a timely manner.

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