

Coexistence of Unruptured Twin Tubal Ectopic Pregnancy with Tubo-Ovarian Abscess in the Same Adnexa: a Case Report and Literature Review

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Abstract

Ectopic pregnancy is the implantation of a gestational sac outside of uterine cavity. Majority of cases occur in the fallopian tubes. It has remained one of the leading causes of first trimester cause of maternal mortality. Incidence has increased with increase in sexually transmitted diseases and assisted conception and improved earlier diagnosis while mortality has reduced due to improved earlier diagnosis with more conservative and less invasive treatment modalities. Tubo-ovarian abscess (TOA), an ascending polymicrobial infection of the upper genital tract in females usually presents with symptoms such as lower abdominal pain, bleeding from the vagina and fever, which sometimes presents a diagnostic dilemma between TOA and ectopic pregnancy. Both disease conditions are potentially life threatening. We present a case of a 33-year-old woman with co-existing TOA and unruptured ectopic pregnancy.

Keywords: Tubal ectopic pregnancy, tubo-ovarian abscess, salpingectomy.

Introduction

Ectopic pregnancy is the implantation of the gestational sac outside of the endometrial cavity [1, 2]. It occurs in 1.3 to 2.4% of pregnancies in the reproductive age group [1, 3]. It has remained the leading cause of first trimester maternal morbidity and mortality [1–4]. Majority of the ectopic gestations (95%) are located in the fallopian tube and the rest found at other sites like the; ovary, cervix, and intra-abdominal region [1–4]. The risk is increased with a background history of sexually transmitted diseases, pelvic inflammatory disease, previous pelvic surgery especially tubal surgery, assisted conception, history of infertility, smoking and in utero exposure to Diethylstilbesterol [4, 5]. Incidence is increased amongst pregnancies occurring with the use of intra-uterine device and progesterone only contraceptive use. [4]. Amenorrhoea, lower abdominal pain and vaginal bleeding are the classic symptoms triad of ectopic pregnancy, and acute abdominal symptoms and hemodynamic instability can be seen with its rupture [2, 4]. Presentation as an infected ectopic pregnancy is rare and is

usually the result of a tubal abortion or a ruptured ectopic pregnancy with a subclinical self-limiting hemodynamic insult and a superimposed infection of the conceptus. [6]. Infected ectopic pregnancy may be seen as a variant of chronic ectopic pregnancy where the trophoblastic tissue gradually invades through the implantation site leading to repeated rupture at the site and continued sub-clinical bleeding over time forming a haematocele and appear as a pelvic mass or abscess [2, 6]. The pathological process is usually that of a large, infected, walled-off hematoma around the products of conception in the distal half of the fallopian tube and may involve adjacent organs [6]. Presentation as a tubo-ovarian abscess is most often unilateral [6]. Tuba-ovarian abscess by tubal distortion can be a precursor and consequence of ectopic pregnancy and may rarely be found together.

TOA most times occur as a complication of poorly treated or untreated pelvic inflammatory disease (PID). It is a polymicrobial infection of aerobic and anaerobic bacteria seen frequently in the reproductive years [7]. Poorly treated tubo-ovarian abscess can lead

to ectopic pregnancy, infertility, chronic pelvic pain, ovarian vein thrombosis, and pelvic thrombophlebitis. [7] Delayed intervention could result in rupture, peritonitis, sepsis and death [7]. Medical treatment for tubo-ovarian abscess gives good outcome in 75% of patients and the rest needing surgical intervention [7].

Co-existence of tubal ectopic pregnancy with tubo-ovarian abscess can sometimes present a diagnostic challenge as both may have similar symptoms. Surgical treatment (Laparoscopy or Laparotomy) is usually preferred treatment choice.

Case

Patient was a 33-year-old Para 4 (4 alive) woman who presented with lower abdominal pains of one week duration. She presented to our facility three months ago during which a diagnosis of Pelvic inflammatory disease was made. She was counseled to bring her husband for testing and treatment. However, she was lost to follow up. She also stopped her prescribed oral antibiotics as soon as her symptoms subsided. Her last menstrual period was 6 weeks ago.

On presentation, her vital signs were Heart rate 100 bpm, SO₂ of 98%, BP 100/60mmHg. Abdominal examination revealed tenderness on the left iliac fossa. Speculum examination showed closed cervical os with muco-purulent discharge in the posterior fornix. Packed cell volume was 30%, white cell count was 24,000 X 10⁶ with predominant of neutrophils, blood borne viruses were negative, Random blood sugar was 122mg/dl, and Serum B-HCG was positive. A pelvic ultrasound scan done revealed an empty uterus, 2 gestational sacs with fetal poles without cardiac activities at the left adnexa and a multilocular complex left adnexal mass of 7.4 cm lateral to the gestational sacs. A diagnosis of twin tubal ectopic pregnancy with suspicion of co-existing tubo-ovarian abscess was made. She was counseled on treatment options (laparoscopy, laparotomy). However, she opted for laparotomy on account of financial constraint. She subsequently had Laparotomy (using Maylard transverse incision) with salpingectomy and drainage of pelvic abscess.

Intra operative findings were 500mls of sero-purulent ascites, moderate adhesions of uterus to bladder anteriorly, and uterus to bowel posteriorly, estimated blood loss was 950mls. Sample was taken for aerobic and anaerobic culture and tubal specimen was sent for histology. The right fallopian tube was grossly healthy. She was transfused with 2 units of blood post-operatively on account of post of anaemia. Her post op recovery was uneventful, and she was discharged on third post operative day.



Figure 1 – Pelvic ultrasound scan demonstrating two extra-uterine gestational sacs with fetal poles

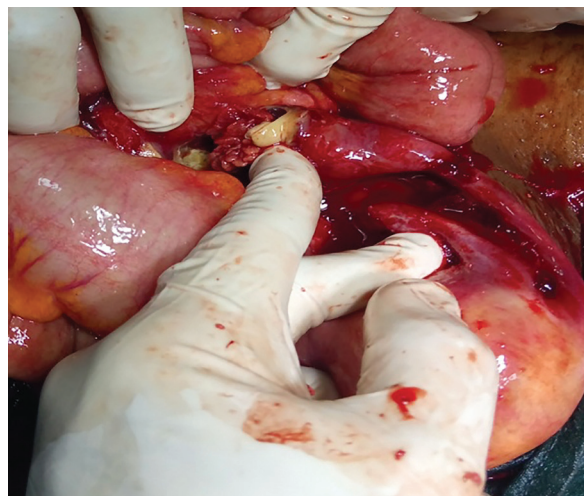


Figure 2 – Intra-operative findings of pus in the left adnexa with pustular exudate from the left fimbrial end respectively

Discussion

Ectopic pregnancy as the most important cause of first trimester maternal morbidity and mortality has increased in recent years with increase of sexually transmitted diseases and widespread access to assisted reproductive techniques [4, 7, 8]. Fatality from ectopic pregnancy has also declined despite the rise in incidence due to early presentation, improved diagnosis and better treatment options especially in the developed world [4].

Tubo-ovarian abscess is usually seen in the reproductive period and mostly polymicrobial agents being responsible for the infective process [7, 8]. Tubo-ovarian abscess is usually seen as inflammatory masses involving the fallopian tubes and is highly associated with the ovaries and other pelvic structures [1]. The aetiology of the co-existence of ectopic pregnancy with tubo-ovarian abscess is not clear, however; ascending infection being the likely route following documented cases seen in the presence of; IUD, previous PID and curettage just prior to the inflammatory process [6]. Direct or contiguous spread could be responsible for cases after a ruptured appendicitis with peritonitis. [6] These may lead to infection of the walled-off hematoma around the conceptus [6]. Pelvic inflammation is a risk factor for ectopic pregnancy altering tubal motility, a history which was present in the case presented. The patient was screened for diabetes and Human immunodeficiency virus both of which are common causes of reduced immunity and favourable for abscess formation. Malnutrition and anaemia could possibly predispose the patient to abscess following ascending pelvic infection for one in a polygamous sexual relationship.

Early diagnosis and intervention correlates with a more favourable outcome for both ectopic pregnancy and tubo-ovarian abscess individually and same should apply when both co-exist [8]. Treatment delay apart from posing a fertility risk, more importantly a rupture can be fatal [9].

Amenorrhoea, lower abdominal pain with or without vaginal bleeding are common alongside other non specific symptoms [2, 3]. Patient may be septic in acute cases with acute or low grade pyrexia [6].

Advancement in ultrasonography has led to earlier, easier and increased diagnosis with reduced mortality [2, 3].

Inflammatory markers such as neutrophilia and elevated CRP are common in the presence of abscess. Anaemia may complicate sepsis or tubal rupture [2].

Beta- Human chorionic gonadotropin may be positive or weakly positive in protracted or chronic cases as a result of inactive or avital trophoblast tissues which may create a

diagnostic challenge [2, 6]. Ultrasound scan usually gives the differentials of tubo-ovarian abscess/chronic inflammatory mass [2]. Other sonographic differentials include ovarian dermoid cyst, haemorrhagic cyst and endometrioma [6]. Transvaginal Ultrasonography may easily demonstrate a gestational sac with yolk sac in the affected adnexa [1]. Magnetic resonance imaging (MRI) scans can be helpful as it may demonstrate features such as presence of a haemoperitoneum associated with haematosalpinx and prominent enhancement of the tubal walls with the concurrent presence of a pelvic mass [2]. This may not be readily available and accessible in most places in our environment.

Ectopic pregnancy can also be diagnosed retrospectively on histology by presence of chorionic villi after surgical treatment for tubo-ovarian abscess [2, 6].

Differential diagnoses include other unilateral pelvic masses common with young women which may look both clinically and sonographically like a pelvic or tubo-ovarian abscess such as IUD-associated tubo-ovarian abscess, infected ovarian cysts, haemorrhagic ovarian cysts, endometrioma, cystic teratoma complicated by torsion or rupture, periappendicular abscess with low-lying caecum, or an inflammatory mass of Crohn's disease and dermoid [6, 8].

Laparoscopy is accepted as the gold standard in the diagnosis and treatment of ectopic pregnancy and tubo-ovarian abscess where available with the right manpower in a hemodynamically stable patient [2, 4]. Laparotomy was performed as that was what could be offered and her anaemic state made referral for laparoscopy a concern. The decision for salpingectomy or salpingostomy in tubal ectopic surgery depends on the age of the patient and the desire for fertility and the status of the contralateral tube [1, 4]. Tubo-ovarian abscess inflicts further tubal damage than would have ordinarily been caused by an ectopic pregnancy. In our case, the affected tube was highly hydropic with pustular discharge from the tube. The patient did not desire further fertility with a healthy-looking contralateral tube, hence a salpingectomy of the affected was done.

Surgical treatment is the treatment of choice preferably laparoscopically where available [2]. It is often difficult to perform conservative surgery due to extensive damage of the tube and the severity of pain symptoms [2]. Reduced amount of active chorionic villi and minimal or absent trophoblast activity may explain poor outcomes with methotrexate [2, 10]. It is

important to state that this very rare subset of ectopic pregnancy also poses a significant diagnostic and treatment dilemma especially in developing countries with paucity of trained gynaecologists [11].

In conclusion, early diagnosis of co-existing ectopic pregnancy with tubo-ovarian abscess is necessary to allow for early and appropriate intervention which could help limit damage and prevent even more fatal complications. This case report also highlights the importance of considering alternative diagnoses in any reproductive age woman presenting with similar symptoms.

Clinical implications of this case report

Co-existence of tubal ectopic pregnancy and TOA can present with a myriad of non-specific signs and similar symptoms therefore posing a very serious diagnostic challenge to the gynaecologist. Multimodality gynaecological imaging such as 3-dimensional transvaginal ultrasonography, pelvic computed tomography (CT) scan and magnetic resonance imaging (MRI) with high index of suspicion will help mitigate the maternal morbidity and mortality attributed to this clinical entity.

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