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Case Report

An unexpected case of ectopic pregnancy of the mesosalpinx

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ABSTRACT

1.3% of ectopic pregnancies occur in the abdominal cavity and these have 7.7 times higher mortality rates than tubal pregnancies. We presented a case who came at 5 weeks of amenorrhea with lower abdominal pain, vomiting, and vaginal bleeding. Ultrasound imaging showed a heterogenous vascular solid-cystic adnexal structure with hemoperitoneum. She underwent an emergency diagnostic laparoscopy. Intra-operatively, pregnancy was noted to be sited at the left proximal mesosalpinx. Ectopic pregnancy was removed through the ruptured point and the defect was stitched to restore anatomy and secure hemostasis. Risk factors, clinical presentation, and treatment of abdominal pregnancies are similar to that of any ectopic pregnancy. It is not unusual for diagnosis to be made only intra-operatively as in our case. The patient was offered a diagnostic laparoscopy due to a presumptive diagnosis of tubal pregnancy. As conception was early, completion resection was achieved. Abdominal pregnancy is uncommon and challenging to diagnose, therefore requires a high index of suspicion. Surgery is the mainstay treatment.

Keywords: Ectopic pregnancy, Abdominal, Mesosalpinx, Laparoscopy

INTRODUCTION

An ectopic pregnancy occurs when there is an abnormal implantation of an embryo outside the uterine cavity. It complicates 1.3-2.4% of all pregnancies.[1] The majority of ectopic pregnancies are located in the fallopian tube (90%); while the rest occur in the interstitial region of the fallopian tube, cervix, myometrium, cesarean scar, ovary, and abdominal cavity.[2] Risk factors include previous history of ectopic pregnancy, previous pelvic infection or sexually transmitted infections, prior tubal surgery such as tubal sterilization, age more than 35 years old, cigarette smoking, current use of intra-uterine contraceptive device, pregnancies conceived via assisted reproductive techniques.[3] The diagnosis of ectopic pregnancy is usually made using a combination of clinical presentation, biochemistry (most commonly serum beta-human chorionic gonadotrophin [β-hCG]), and imaging (most commonly ultrasound).[4] Treatment options include expectant management, medical treatment with methotrexate, and surgery. The type of treatment offered depends on the patient's presentation and hemodynamic stability, site of ectopic pregnancy, evidence of rupture and hemorrhage, biochemical and sonographic findings, and the patient's choice. Early recognition, accurate diagnosis, and prompt delivery of treatment are crucial as ruptured ectopic pregnancy contributes to up to 6% of maternal deaths.[5]

CASE REPORT

We presented a case of a 23-year-old lady, gravida 4 para 2, who presented at approximately 5 weeks of amenorrhea. Her past obstetrics history includes 1 termination of pregnancy followed by 2 uncomplicated normal vaginal deliveries. She had a history of pelvic inflammatory disease with bilateral tubo-ovarian abscesses for which she was treated with intravenous antibiotics and was lost to follow-up after her discharge. She complained of 1 day duration of constant lower abdominal pain which was associated with vomiting, and a few days duration of light

vaginal bleeding. She was hemodynamically stable. There was tenderness on palpation of the suprapubic region of the abdomen. Ultrasound pelvis showed an empty uterus with no intra-uterine gestational sac and a large heterogenous solid-cystic structure adjacent to the left ovary containing vascularity and small amounts of hemoperitoneum (Figure 1).

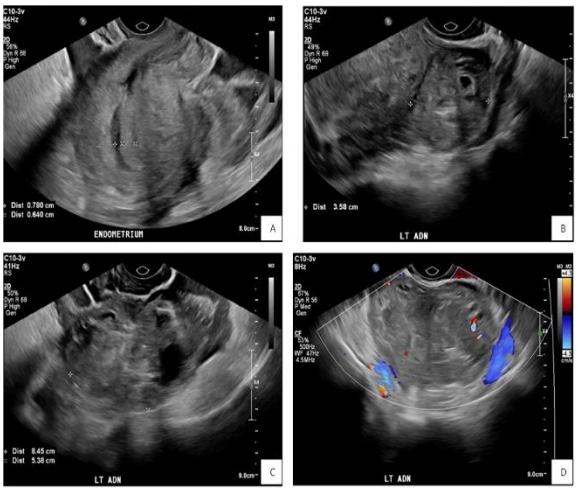

Figure 1: Ultrasound images; (A) empty uterus and small amounts of hemoperitoneum in the pouch of Douglas; (B) and (C) left adnexal mass; (D) vascularity supplying adnexal mass.

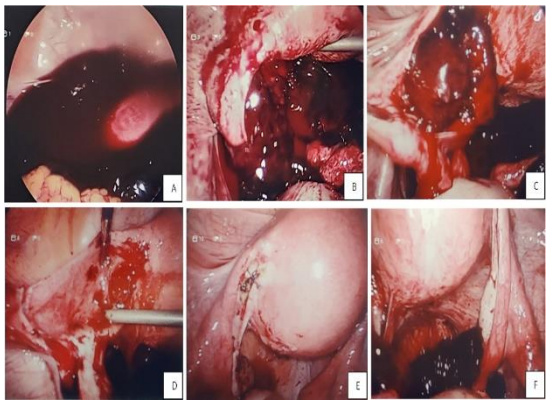

Figure 2: Diagnostic laparoscopy images; (A) haemoperitoneum noted on entry; (B) blood clots noted in pouch of Douglas and left adnexa; (C) and (D) ruptured ectopic gestation in proximal left mesosalpinx; (E) after evacuation of ectopic gestation and repair of mesosalpinx; left tube and ovary appears normal; (F) right tube and ovary appear normal.

She underwent an emergency diagnostic laparoscopy. Intra-operatively, it was noted that the ectopic pregnancy was sited at the left proximal mesosalpinx; it measured about 2 cm and has ruptured forming blood clots around it and moderate amounts of hemoperitoneum. The left fallopian tube appeared normal. The other pelvic organs were also normal. There was no evidence of adhesions or pelvic inflammatory disease. The ectopic pregnancy was removed through the ruptured point of the mesosalpinx and the defect on the mesosalpinx was stitched to achieve hemostasis. The left fallopian tube was preserved (Figure 2). She recovered well and was discharged on post-operative day 1.

Her serum β-hCG levels were trended and it decreased from 7768.0 IU/l pre-operatively to 3394.0 IU/l twelve hours post-operatively, and to 32.3 IU/l on post-operative day 9. Histopathology confirmed products of conception.

DISCUSSION

Abdominal ectopic pregnancies account for 1.3% of all ectopic pregnancies.[2] Common implantation sites include the pouches anterior and posterior to the uterus and serosa of the uterus and adnexa; others include omentum, bowel, liver, spleen, retroperitoneal and abdominal wall.[6] They are known to have mortality rates 7.7 times higher than tubal pregnancies.[7] Risk factors and clinical presentation can be similar to that of any ectopic pregnancy, making its diagnosis difficult. Therefore, it is not unusual for it to be diagnosed for the first time during surgery, as in our case.

Abdominal ectopic pregnancies can be classified into primary or secondary. A primary abdominal pregnancy fertilizes and implants directly in the abdominal cavity and its organ. A secondary abdominal pregnancy occurs when the embryo is extruded from the female reproductive organ and secondarily gets implanted in the abdominal cavity.[8] The criteria for primary abdominal ectopic pregnancy was first described by Studdiford and it is as follows: normal tubes and ovaries with no evidence of recent or remote injury, absence of any evidence of uteroperitoneal fistula, presence of a pregnancy-related exclusively to the peritoneal surface, early enough to eliminate the possibility of secondary implantation following a primary nidation in the tube.[9] Many have theorized the pathophysiology behind abdominal pregnancies and these include sperms and oocyte traveling to the Pouch of Douglas due to the dependent flow of peritoneal fluid and resultant fertilization occurring there, and retrograde flow of the embryo after fertilization.[10,11] Other possible causes for secondary abdominal pregnancies include fistulous track formation following in vitro fertilization procedures or previous surgery, and undiagnosed uterine perforation during embryo transfer or termination of pregnancy.[12,13] Our presented patient likely had a primary abdominal ectopic pregnancy as she presented early in first trimester and was noted during laparoscopy to have normal reproductive organ structures with no pelvic adhesions and the ruptured conceptus was noted to be implanted in the mesosalpinx completely separate from the uterus and tubes.

Treatment of abdominal ectopic pregnancies follow the same principles as other ectopic pregnancies. However, when considering treatment options, it is pertinent to take into account the higher mortality rate as abdominal

pregnancies tend to implant on highly vascularized structures and these pregnancies can separate at any time resulting in severe hemorrhage.[14] The clinical picture of abdominal pregnancies can be extremely variable including many being asymptomatic early on, hence resulting in delayed diagnosis only in later gestation.[15] Once diagnosed, immediate surgical intervention is advised. Surgical management can be achieved either via laparoscopy or laparotomy, depending on the individual clinical profile such as gestational age of pregnancy and hemodynamic stability of the patient. The advent of energy devices and hemostatic agents has made achieving hemostasis during laparoscopy much easier and has led to the increasing use of the laparoscopic approach in managing abdominal pregnancies.[16-18] However, advanced abdominal pregnancies in second and third trimester still require laparotomy with a multi-disciplinary team including specialties such as general surgery, urology, anesthesia, neonatology, and interventional radiology.[19] Medical management can be considered where life-threatening hemorrhage is anticipated such as in abdominal pregnancies of the liver and spleen. These cases will need to be closely monitored due to the high risk of severe hemorrhage and the risk of requiring surgery eventually.[20] In our case, the patient was offered diagnostic laparoscopy due to a presumptive pre-operative diagnosis of ruptured tubal ectopic pregnancy, and the diagnosis of an abdominal ectopic pregnancy of the mesosalpinx was only confirmed during laparoscopy. As the conception was early, resection of the entire pregnancy was easily achieved and the defect in the mesosalpinx was stitched to restore anatomy and achieve hemostasis.

CONCLUSION

Abdominal ectopic pregnancy is an uncommon form of ectopic pregnancy that is challenging to diagnose and therefore requires a high index of suspicion for its accurate diagnosis. Mortality rates are higher due to its tendency to implant at highly vascularized sites and the inherent risk of separation at any time of gestation, making it pertinent to recognize and diagnose early. Once diagnosed, surgery is the mainstay treatment option and this can be done via laparoscopy or laparotomy. Often the diagnosis of abdominal pregnancy is only made at the time of surgery as in our presented case. A multi-disciplinary team should be considered in anticipation of surgical complications.

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