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Laparoscopic treatment of Interstitial Ectopic Pregnancy: a Case Report

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ABSTRACT

Interstitial pregnancy is a rare form of ectopic pregnancy with a significant risk for morbidity(1). A 27-year-old woman was brought to the emergency department with vaginal spotting bleeding and serum ß hCG levels up to 7900 mUI/mL. The trans-vaginal ultrasound scan showed a normal uterus with an endometrial thickness of 13 mm; near the left uterine horn, there was a mass characterized by an oval shape of 24x25x18 mm with a mixed echogenic pattern and a moderate vascularization at Color-Doppler investigation which was suggestive for a cornual/interstitial pregnancy. During the next controls the ß hCG levels increased until 9156 mlU/mL, for this reason it was proceed with a laparoscopy. During laparoscopy an ectopic pregnancy was diagnosed in the left uterine horn. Complete salpingectomy was performed. Interstitial (IP) and corneal (CP) pregnancies should be considered as two different clinical situations. It is important to enhance the clinician's suspicion about interstitial/cornual pregnancy(2). Laparoscopic approach represents the treatment of choice for reducing maternal risks and obtaining the patient's best outcome(3).

SOMMARIO

La gravidanza interstiziale rappresenta una rara localizzazione di gravidanza ectopica associata ad un elevato tasso di morbidità. Una donna di 27 anni è giunta in Pronto Scoccorso per perdite ematiche vaginali e con livelli di ß hCG di 7900 mUI/mL. L'ecografia pelvica trans-vaginale ha mostrato un corpo uterino nella norma con spessore endometriale di 13 mm; in prossimità dell'angolo cornuale sinistro dell'utero si è evidenziato una formazione a contenuto misto, di forma ovalare, di mm 24x25x18, dotata di discreta vascolarizzazione al Color-Doppler, riferibile a gravidanza ectopica cornuale/interstiziale. Nei controlli successivi le ß hCG sono aumentate di 9156 mlU/mL, per cui si è deciso di procedere con la laparoscopia. Nel corso di tale procedura, è stata diagnosticata una gravidanza ectopica interstiziale sinistra per cui è stata effettuata una salpingectomia totale sinistra. È importante fare diagnosi differenziale tra gravidanza ectopica di tipo interstiziale o cornuale per rendere più appropriata la scelta terapeutica chirurgica e favorire un miglior outcome della paziente.

Keywords: Ectopic pregnancy; interstitial pregnancy; laparoscopic treatment; salpingectomy

INTRODUCTION

IP represents approximately 1–3% of ectopic pregnancies (EP)(2). In an IP, the embryo is implanted at the proximal site of the fallopian tube, which is embedded within the muscular wall of the uterus(4). This site is a highly vascular area near the anastomosis of the ascending uterine and tubo-ovarian vessels(5). A diagnosis is usually delayed because of such a rare position and the maternal mortality rate related to it is 2.0–2.5%(1).

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CASE PRESENTATION

A 27-year-old nulliparous woman was referred to the emergency room of our hospital on March 2016 with spotting bleeding. The woman referred irregular menstrual periods. Her medical history included smoking (20 cigarettes per day) and no past or current medical problems. On arrival, her vital parameters were normal. Vaginal examination revealed bleeding, no uterine dilatation, no uterine contractions or abdominal pain and tenderness. Speculum inspection was unremarkable. In addition, laboratory evaluation revealed that hematocrit was 37.5%, hemoglobin

12.3 gr/dl, white cell blood count 11.4 x 103 / mL, normal liver and kidney function tests. Her βhCG value was 7900 mlU/mL. The ultrasound examination showed no evidence of a gestational sac in the uterine cavity, nor in the adnexal region. In the suspicion of an EP, the woman was admitted to our obstetric department for observation of the evolution of the pregnancy. The day after, clinical examination was identical. A second transvaginal ultrasound scan was performed and it showed "a normal uterus with an endometrial thickness of 13 mm (**Figure 1**); near the left horn of the uterus presence of a mass characterized by an oval shape of 24x25x18 mm with a mixed echogenic pattern and a moderate vascularization at Color-Doppler investigation, suggestive for a cornual/interstitial pregnancy (**Figure 2**). Presence of free abdominal fluid in Douglas cavity".

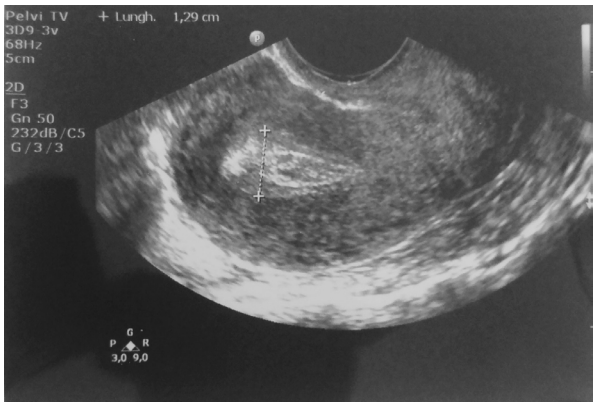

Figure 1.
Fig. 1 Normal uterus with an endometrial thickness of 13 mm.

βhCG levels increased up to 8043 mlU/mL and, finally, up to 9156 mlU/Ml in 24 hours. The surgical approach was necessary into account of clinical condition and of βhCG levels, that contraindicate a medical treatment (Methotrexate)[6]. The woman decided to proceed with surgery. A traditional laparoscopic approach was preferred. During the procedure, a left interstitial EP (maximum diameter 3-4 cm) was found (**Figure 3**) with an extended adherence syndrome that included both the adnexa and hepato-diaphragmatic and hepato-renal regions. This pathological pattern suggested a previous Pelvic Inflammatory Disease (PID).

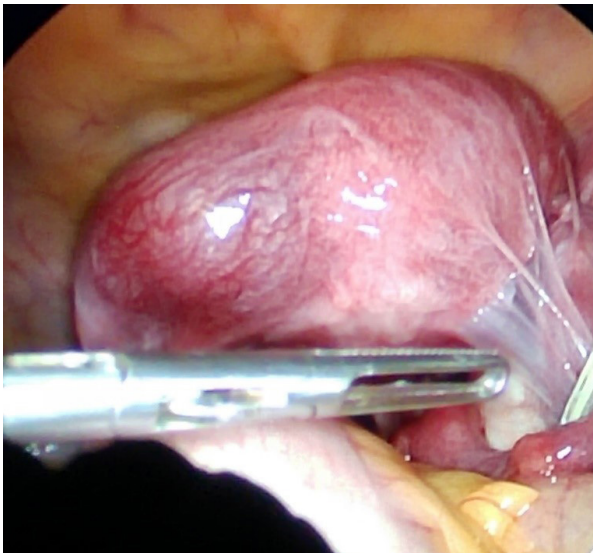

Figure 3.
Laparoscopic diagnosis of left interstitial ectopic pregnancy.

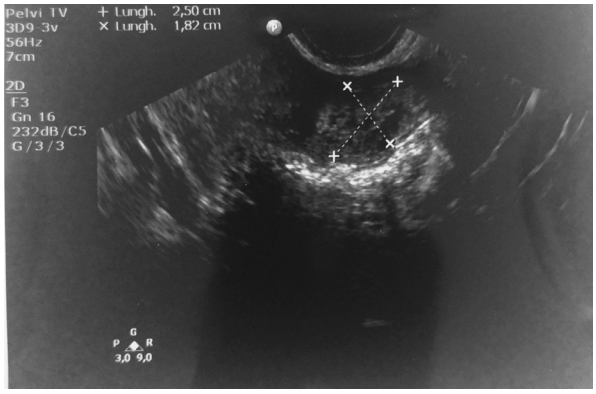

Figure 2.
Near the left horn of the uterus presence of a mass characterized by an oval shape of 24x25x18 mm with a mixed echogenic pattern and a moderate vascularization at Color-Doppler investigation, suggestive for a cornual/interstitial pregnancy.

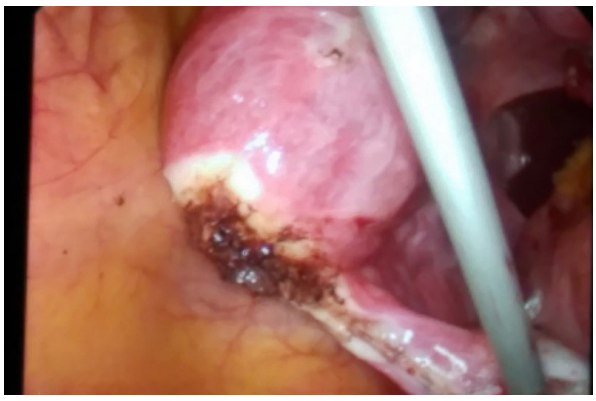

Figure 4.
A complete left salpingectomy performed with a Bipolar Biclamp applied in the proximal interstitial-isthmic portion and Surgiflo Hemostatic Matrix in the left cornual region.

The tube with EP could not be salvaged. For this reason, a complete left salpingectomy was performed with a Bipolar Biclamp applied in the proximal interstitial-isthmic portion and Surgiflo Hemostatic Matrix in the left cornual region (**Figure 4**).

Finally, the adherences were removed by adhesiolysis. The patient was discharged from the hospital without complications on the second postoperative day. At the demission, a serial dosage of serum βhCG levels was suggested to the patient every week for the follow-up until the βhCG titer became negative. Furthermore, it was prescribed transvaginal ultrasound control and clinical examination after 15 days. An important advice for the patient was not to get pregnant for 1 year after the surgery. After two weeks, histopathological report confirmed the laparoscopic diagnosis: interstitial ectopic pregnancy.

DISCUSSION

Cornual and interstitial pregnancies are two rare subtypes of EP characterized by the implantation of the gestational sac in the uterine horns or into the proximal portion of the fallopian tube. These conditions present a significantly greater propensity to expand before rupture if compared with the distal portion[7]. For these reasons, IP may remain asymptomatic until 7–16 weeks' gestation, timing at which tubal rupture may result in catastrophic, life-threatening maternal hemorrhage[8,9]. CP, on the other hand, refers to a pregnancy that develops in a horn of a bicornuate uterus, with highly variable clinical outcomes that are particularly related to the size of the uterine horn involved[4]. However, the two terms are often used interchangeably in the medical literature and in clinical practice. Today, the use of sensitive β-human chorionic gonadotropin (β-hCG) assay and transvaginal ultrasound permits earlier diagnosis[10] of IP. But the final diagnosis is usually made at the time of surgery[11]. Once a diagnosis of IP is suspected, multiple factors should be considered to determine whether surgical or medical treatment is indicated. These factors include clinical presentation and features of EP, gestational age at diagnosis, contraindications to medical therapy and patient preference. Early diagnosis may potentially allow conservative treatment thus minimizing morbidity and mortality rates. Formerly, treatment options for IP mainly relied upon laparotomy[3]. Conservative laparoscopic treatment is now the preferred surgical approach in cases of EP that are not eligible for medical treatment. The Royal Collage of Obstetricians and Gynecologist recommends that the women with EP who are most suitable for medical (Methotrexate) therapy are those with minimal symptoms and low serum β-hCG levels (<3000 IU/l). Even in women with significant hemoperitoneum, laparoscopic surgery can be safely conducted by experienced laparoscopic surgeons if hemodynamic stability is achieved through perioperative management. Laparoscopic treatment per se offers several advantages over laparotomy. These include lower surgical morbidity, shorter hospital stay, faster return to normal activities, and decreased healthcare cost[12]. Conservative laparoscopic treatment may potentially remove the EP while preserving uterine architecture[13]. It does not appear necessary to routinely monitor serum β-hCG levels postoperatively in women diagnosed with tubal miscarriages undergoing complete salpingectomy. On the contrary, it is advisable for a ruptured EP or in cases of salpingectomy where there is thought to be spillage of trophoblast[14]. Expectant management of EPs that are located in the distal tube has been shown to be an acceptable approach in the presence of a spontaneously declining serum β-hCG level in an asymptomatic woman[15]. Nonetheless expectant management may also potentially be associated with uterine rupture leading to severe maternal morbidity, unpredictable course to resolution (even with declining β-hCG levels) and the need for prolonged hospitalization. Risk of recurrence of IP[13] and risk of uterine rupture during subsequent pregnancy may be also considered.

CONCLUSIONS

An early diagnosis and a correct treatment of IP avoids invasive operations, such as a laparotomy obtaining a favorable maternal outcome. A successful and safe management of this condition is possible when the treatment strategy is based on the patient's clinical conditions, on the evaluation of the risk factors and on the integration of the different available diagnostic techniques.

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