INTERSTITIAL PREGNANCY. DIAGNOSIS AND MANAGEMENT. FILANTROPIA HOSPITAL EXPERIENCE

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Abstract

Interstitial pregnancy is a rare form of ectopic pregnancy. Its diagnosis is usually difficult and requires careful clinical examination correlated with laboratory investigations. The diagnosis is usually delayed and natural history is towards spontaneous uterine rupture with heavy bleeding that could be lifethreatening. Treatment could be medical or surgical and depends on the age of pregnancy, intraoperative findings, gynecologist's laparoscopic experience and the patient's choice and desire of fertility.

Rezumat: Sarcina interstiţială. Diagnostic şi conduită. Experienţa Spitalului Clinic Filantropia

Sarcina interstiţială este o formă rară de sarcină ectopică. Diagnosticul său este, de obicei, dificil şi necesită o examinare clinica atentă corelată cu investigaţii de laborator. Diagnosticul este, în mod obişnuit, stabilit cu întârziere iar istoria naturală evoluează către ruptură uterină spontană cu sângerare masivă care poate pune viaţa pacientei în pericol. Tratamentul poate fi medical sau chirurgical şi depinde de vârsta sarcinii, aspectul intraoperator, experienţa laparoscopică a ginecologului şi opţiunea pacientei, mai ales în ceea ce priveşte fertilitatea.

Cuvinte cheie: sarcină ectopică, interstiială, laparoscopie, fertilitate

Introduction

The most common location of an ectopic pregnancy is in the fallopian tube (98%) [1]. Interstitial pregnancy (IP), also known as cornual pregnancy, is a type of ectopic pregnancy with an incidence of approximately 2.4%. Others uncommon implantation sites are described at the level of uterine cervix, scar after caesarean section (Figure 1), ovary or abdominal cavity. Much rare an intrauterine pregnancy could coexist with an extrauterine one (heterotopic pregnancy). Interstitial pregnancy (IP) develops in the intramyometrial part of the fallopian tube, a situation correlated with some particular aspects: it can be falsely diagnosed as an intrauterine pregnancy due to the partial implantation into the endometrial cavity [2], the diagnosis is usually delayed and natural history is towards spontaneous uterine rupture with heavy bleeding that could be life threatening.

Risk factors for IP are similar to those of tubal pregnancy except that the ipsilateral salpingectomy is a specific risk factor. Spontaneous rupture of an IP could occur quite early, in contrast to what has been known in the past. [3]

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KEY WORDS: ectopic pregnancy, interstitial, laparoscopy, fertility

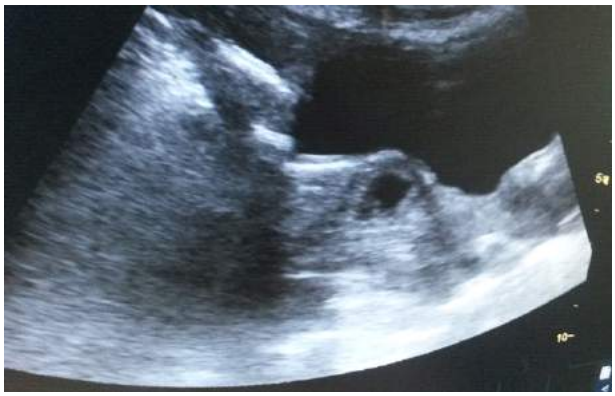

Figure 1 - Ultrasonografic aspect of caesaren section scar pregnancy.

Diagnosis

The diagnosis of IP is based on personal history, clinical examination and laboratory investigations. Detailed patient's history is very important. Clinical examination of the patient may raise the suspicion of ectopic pregnancy which is given by spontaneous lower abdominal pain or at bimanual palpation of the uterus and adnexal areas and/or uterine bleeding. [4]

One of the most important investigations is the endovaginal ultrasound (US). Ultrasonographic signs suggestive for IP are the eccentric location of gestational sac right near the fallopian tube and its circumscription by a very thin layer of myometrium (< 5mm), located near the uterine serosa. [5]

The interstitial line is an US sign defined by the presence of a hyperechogenic line that stretches from the superior lateral area of the endometrium towards the middle area of the gestational sac. The interstitial line corresponds to either the endometrial cavity or intramyometrial portion of the fallopian tube, depending on gestational age. [6]

Among the US signs used for the IP diagnosis, the interstitial line is considered to be a more accurately sign and more predictable than eccentric location of gestational sac or the myometrium thinning near gestational sac. [7]

An important step in the laboratory diagnosis is the serum level of β-hCG which can raise suspicion of an ectopic pregnancy before the US signs appears. In a normal intrauterine pregnancy serum â-hCG level doubles at 48 hours interval. In the case of an IP the â-hCG level raises gradually but not at the same rate compared to an intrauterine pregnancy. β-hCG discriminatory zone is described to be the interval value where the gestational sac could be detected on US examination. The range depends on the technical characteristics of the US machine and is between 1,500-2,000 IU. Usually the IP is detected when β-hCG level is above the discrimination zone.

Treatment

In the past, the cornual resection and hysterectomy were the usual methods of treatment, perhaps as a result of a delayed diagnosis. [8]

In the current practice, IP is usually diagnosed earlier, before rupture, thus providing the opportunity of a conservative medical or surgical treatment. [3] It was also described the removal of IP hysteroscopically, but long-term results of this procedure are still unknown. [9] Among conservative surgical procedures there are cornual resection and laparoscopic cornuostomy with pregnancy removal. The patient must be informed of a possible uterine rupture in case of a future pregnancy. Such cases have been described in the literature. [10] Multilayer suture of the myometrium and serous could prevent this complication.

Medical treatment consists in the administration of methotrexate (MTX) in a single or multiple doses. The most common protocol consists of multiple doses of MTX, 1mg/kg/day i.v. or i.m. on days 1, 3, 5 and 7 and Leucovorin 0.1 mg/kg orally on days 2, 4, 6, and 8. The regimen may be repeated after 7 days of the last dose. [11] With this protocol the success rates are ranging between 66-100%.[12] Careful monitoring is recommended after medical treatment and surgical option must be presented to the patient in case of failure. After successful conservative medical treatment of IP there is a risk of uterine rupture in the subsequent pregnancies. [13] There have also been described cases treated by a combination of MTX with selective arterial embolization.[14]

Presentation of cases

We present a series of three cases diagnosed and treated in the Filantropia Clinical Hospital of Bucharest.

Case 1. A 37-years old patient with a history of cesarean section and miscarriage, with approximately 5 weeks of amenorrhea, was hospitalized for moderate metrorrhagia and positive pregnancy test. Level of β-hCG was 7,438 mIU/ml without doubling at 48 hour interval. Ultrasound examination revealed an image of 1,83cm in the right uterine horn suggestive for a gestational sac with adjacent thin myometrium (Figure 2).

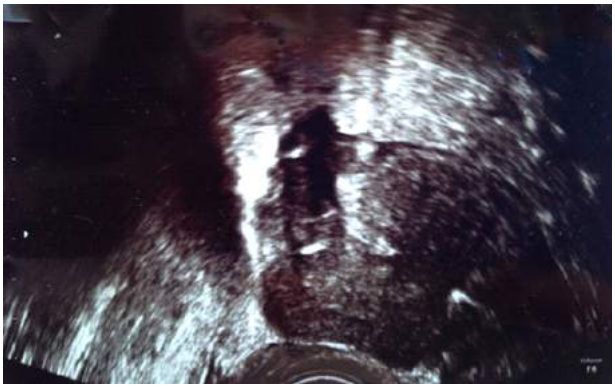

Figure 2 - Ultrasound aspect of right uterine horn pregnancy.

Laparoscopic surgery was performed finding a dilated right uterine horn suggestive for an IP (Figure 3).

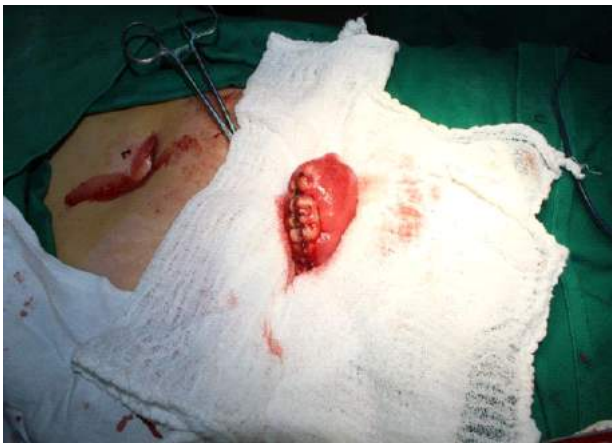

Figure 3 - Laparoscopic aspect of right uterine horn pregnancy.

Due to a large base of uterine implantation, laparoscopy was converted to open surgery and a cuneiform resection of the right uterine horn was performed. Pathology report confirmed the diagnosis. Postoperative outcome was uneventful.

Case 2. A 34-years old patient, with a personal history of 2 spontaneous vaginal deliveries and 6 terminations, presents with 12 weeks amenorrhea and is hospitalized for intense pelvic pain and minimal vaginal bleeding. One months ago, the patient had a uterine D&C in another hospital. Endovaginal US revealed no gestational sac in the uterine cavity.

Figure 4 - Intraoperative aspect - post excision suture.

Emergency surgery was performed and revealed about 700 ml haemoperitoneum. After removing blood and clots a left uterine horn purple bulging tumor of about 3/2 cm with bleeding area was found (Figure 5), suggestive for IP. Partial left salpingectomy and cuneiform resection of the left uterine horn with two layers suture of the myometrium was performed. Postoperative outcome was uneventful with discharge on day 2.

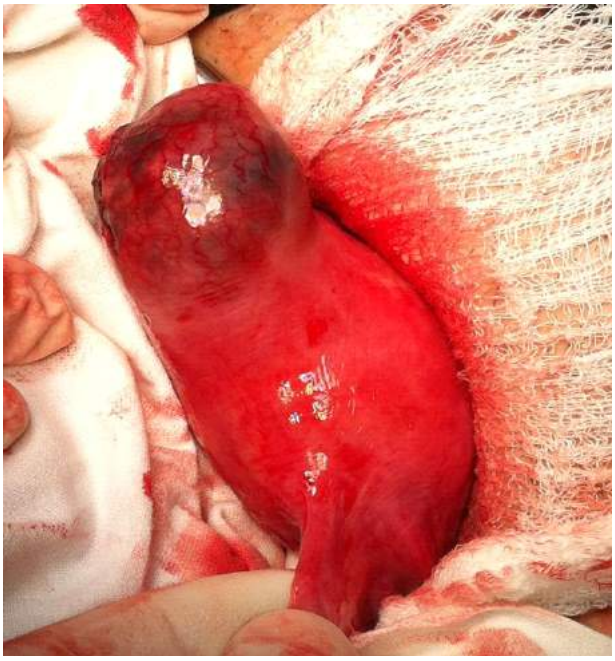

Figure 5 - Intraoperative aspect of left uterine horn pregnancy

Case 3. A 34-years old patient with personal history of a cesarean section and one termination presents at the hospital for 8 weeks amenorrhea and

minimum metrorrhagia. First value of β-hCG was 13,642 mIU/ml and after 48 hours 12,137 mIU/ml. Ultrasound revealed a intrauterine heteroechogenic image of 6 mm diameter with irregular edges, eccentric, and a 15 mm endometrium. Initially, D&C was performed for the suspicion of missed pregnancy. Because of the negative D&C and persistent US image, surgery is decided. The right uterine horn is found dilated and purplish suggestive for IP. A cuneiform resection was performed and the diagnosis was confirmed by pathology (Figure 6).

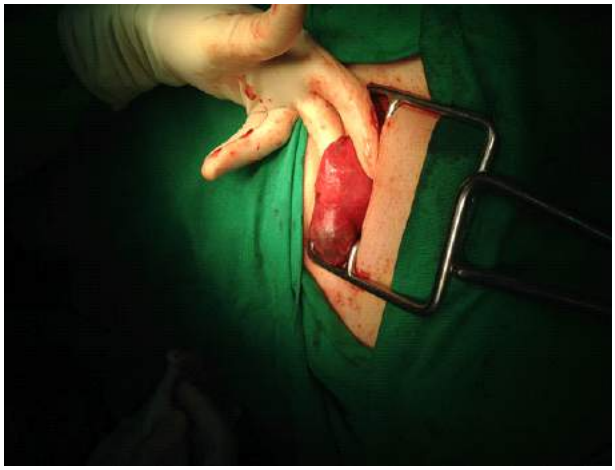

Figure 6 - Intraoperative aspect of right uterine horn pregnancy.

Conclusions

Interstitial pregnancy is a rare gynecologic pathology, with a difficult diagnosis in the most cases and requiring a very careful correlation between clinical and US examination and laboratory. Treatment can be both medical and surgical and must be individualized according to the age of pregnancy, intraoperative finding, laparoscopic skill of the gynecologist and patient's choice and desire for future fertility.

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