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Right angular pregnancy at seven weeks' gestation: a case report treated by laparoscopic approach

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Summary

Angular pregnancy (AP) or implantation of the embryo in the lateral angle of the uterine cavity close to the internal ostium of the fallopian tube is a very rare event. In fact, angular pregnancy refers to implantation of the embryo just medial to the uterotubal junction, in the lateral angle of the uterine cavity. AP must be distinguished, anatomically, from interstitial pregnancy by its position in relation to the round ligament, which crosses the Müllerian duct at the side of the uterotubal junction. AP is associated with a high rate of complications such as bleeding and ruptured uterus due to delayed diagnosis. The authors present a clinical report of AP at seven weeks' gestation without uterine rupture. They performed directly operative laparoscopy because of acute intra-abdominal hemorrhage. Laparoscopy was useful in the treatment of early angular pregnancy and could avoid the need for invasive surgery or hysterectomy.

Key words: Angular pregnancy; Laparoscopy.

Introduction

The majority of ectopic pregnancies are tubal (95%), most commonly in the ampulla of the fallopian tube [1, 2]. Two to five percent of ectopic pregnancies are interstitial; less than one percent are angular [2].

The term interstitial pregnancy is used if the implantation occurs in the interstitial part of the fallopian tube that is embodied within the muscular wall of the uterus. Angular (AP) pregnancy, on the contrary, occurs by embryo implantation in the medial to the uterotubal junction, in the lateral angle of uterine cavity. Anatomically, it is distinguished from interstitial pregnancy by its position in relation to the round ligament, which crosses the Müllerian duct at the side of the uterotubal junction [3]. AP must be differentiating from others forms of ectopic pregnancy such as interstitial, and intramural pregnancy in order to make a correct clinical and histopathological diagnosis, to identify the signs when the uterine rupture appears imminent, and to take the best therapeutic decision according to gestational age at presentation. Undetected, AP may develop until the early second trimester with the risk of catastrophic hemorrhage and greater maternal mortality risk [2, 3].

The authors present a case of AP at seven weeks gestation without uterine rupture, treated directly by laparoscopic approach. The rarity and clinical management of this condition are discussed, as well as the importance of ultrasound investigation for early diagnosis.

Case Report

A 31-year-old Nigerian woman (para 1), with a history of two prior voluntary terminations of pregnancy, one spontaneous vaginal delivery, and a prior ectopic pregnancy of the right fallopian tube followed by right unilateral salpingectomy, came to the present authors' attention for routine ultrasound control. She denied fever, nausea, vomiting, diarrhea, vaginal bleeding, abdominal pain or voluntary guarding.

She had a screening ultrasound made by transvaginal ultrasonography (TVUS), performed at seven weeks' gestation, which revealed a gestational sac, reported as extrauterine and containing a live embryo of five-mm CRL with heart beats, corpus luteum of the left ovary, and intraperitoneal free fluid. The pregnancy was located in the right angular region and surrounded by thin (five-mm) asymmetric myometrium (Figure 1). The value of beta-hCG was 10,057 mUI/ml at recovery.

The case was treated directly by laparoscopy because of acute intra-abdominal hemorrhage. At laparoscopy, the AP with an in-

Figure 1. — Ultrasound finding: the pregnancy in the right angular region, surrounded by thin asymmetric myometrium.

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tact amniotic sac and embryo was on the right side and the uterine wall was about to break (Figure 2). The endometrial cavity, round ligaments, extrauterine parts of the left fallopian tube, and ovaries were normal, and the right fallopian tube was absent.

The pregnancy could not be saved, and thus the authors removed the pregnancy and coagulated by bipolar forceps the myometrial tissue bleeding without suture (Figure 3). A uterine curettage was performed afterwards. The patient was discharged on the third postoperative day.

Figure 2. — Laparoscopy: the angular pregnancy with an intact amniotic sac and embryo is on the right side of the uterine wall.

Figure 3. — The pregnancy is removed and the myometrial tissue is coagulated by bipolar forceps without suture.

Discussion

The majority of ectopic pregnancies are tubal (95%), most commonly in the ampulla of the fallopian tube [1, 2]. Two to four percent of ectopic pregnancies are interstitial and less than one percent are angular [2].

Risk factors associated with the higher incidence of angular ectopic pregnancy, include congenital uterine anomalies, previous ectopic pregnancy, in vitro fertilization and ovulation induction, pelvic inflammatory disease, previous intrauterine procedure,. and use of intrauterine contraceptive devices [4, 5].

APs are usually represented by rupture, which is associated with severe abdominal pain, the syndrome of internal haemorrhage, and often a state of shock, mostly occurring usually between the 6^{th} and the 12^{th} week of pregnancy [6].

In the present case, the pregnancy was implanted in the right angle part of the uterine wall, with a prior ectopic pregnancy of the right fallopian tube followed by right unilateral salpingectomy.

The patient had an unremarkable postoperative course and was discharged after 72 hours when the serum hCG level dropped to 10 IU/L and the hemoglobin value was 11.5 g/dL. Over the next four weeks, the serum hCG level appropriately declined to a negative value and TVUS revealed a normal uterine wall. The histology of surgical specimen confirmed the presence of pregnancy.

Treatment of patients with ectopic pregnancy is not standardized regarding level of ß-HCG, gestational age, and size of gestational mass. There are several treatment strategies for ectopic pregnancies: expectant management, systemic or local medical treatment with methotrexate (MTX), surgical treatments including laparotomy, laparoscopy, hysteroscopy or dilatation and curettage. In many cases MTX alone or a combination therapy with MTX before surgical intervention has been recommended. The surgical approach will depend on the surgeon's experience in laparoscopy and the gestational week. In early gestational weeks, angular, interstitial or abdominal pregnancies can be treated by laparoscopy.

Management of AP is faced by many unresolved questions such as whether the intervention is always necessary, or how long is too long for a wait-and-see approach. Data from randomized trials regarding the future fertility and obstetric outcome are also lacking. There have been no prospective studies comparing outcomes of medical and surgical treatment options for APs. In recent years, the tendency towards conservative medical treatment has been increasing.

According to the present authors' experience, laparoscopy should be the first-line treatment of early APs in case of acute intra-abdominal bleeding.

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