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*Successful conservative treatment of rare ectopic pregnancies:
a report of three cases*

An ectopic pregnancy implanted in the proximal part of the fallopian tube or in the Caesarean scar is a rare but potentially dangerous occurrence.

The incidence of interstitial pregnancy is about 2% to 4 % of all extra uterine pregnancies or one of every 2,500–5,000 live births (2, 7, 9). A diagnosis of interstitial pregnancy carries with it a maternal mortality rate of 2% to 2.5%, making early diagnosis and appropriate treatment crucial (9). The traditional treatment of interstitial pregnancy was cornual resection or hysterectomy in laparotomy. New conservative options vary from laparoscopic treatment with or without cornuostomy to local or systematic treatment using methotrexate (9). Hysteroscopic treatment has been used recently, as well (2).

The scar of a previous Caesarean delivery is the least frequent of ectopic pregnancy locations (8). It may be complicated by uncontrollable haemorrhage from the cervix, uterine rupture, hysterectomy and significant maternal morbidity. To maintain fertility several conservative medical and surgical methods have been used (3).

C a s e 1

The patient was a 36-year-old woman, gravida 3, para 0, who presented with a 7-week history of amenorrhea and a sonographic suspicion of a right cornual pregnancy. The serum hCG level was 9237 mIU/ml. The transvaginal sonography revealed a gestational sac with a yolk sac and fetal pole distinct from the endometrium and surrounded by myometrium. Both ovaries appeared normal and there were no adnexal masses or free fluid in the cul de sac. The general physical examination was normal and findings on gynaecologic examination included a nontender cervix, and a mildly enlarged, nontender and mobile uterus. She had previously suffered two ectopic pregnancies in the right fallopian tube, both treated by intravenous methotrexate, and subsequent laparoscopic and hysterosalpingoscopic exams documented bilateral tubal patency.

After three days of expectant management, the serum hCG level was 14,934 mIU/ml and fetal cardiac activity was detected by sonography. Ten days from admission, the serum hCG level had risen to 48,944 mIU/ml, and at this point, in the eighth week of gestation, the treatment options were reviewed and active surgical treatment was tried.

Diagnostic hysteroscopy and laparoscopy under general anaesthesia were performed, and confirmed the diagnosis. Laparoscopy showed an enlarged, mobile uterus with a bilge in the right cornua of the uterine body. Both tubes and ovaries appeared normal and no blood was present in the pouch of Douglas.

Previous dilatation and suction curettage was performed to remove the decidua and the entire right cornual endometrium was resected using the Stortz hysteroscopic resectoscope under laparoscopic and ultrasound control. Given the obstetric history of the patient, a right laparoscopic salpingectomy was performed to prevent further ectopic pregnancies. The estimated blood loss was less than 100 ml. The patient had an unremarkable post-operative course and was discharged

after two days when transvaginal ultrasound revealed a normal uterine cavity and the serum hCG level had dropped to 7427 mUI/ml. The pathology report confirmed a cornual pregnancy. At both one and three month visits, the patient was well and no signs of the previous cornual pregnancy were detectable both by sonography and by hysteroscopy.

Case 2

A 34-year-old woman, gravida 3, para 1, was admitted 8 weeks after her last menstrual period because of the absence of the gestation sac in the endometrial cavity by transabdominal ultrasound examination and a positive urine pregnancy test.



Fig. 1. Transvaginal ultrasound of cornual pregnancy: a 5.1 mm thick myometrium surrounding the gestational sac

Serum hCG level was 33059 mUI/ml. The patient underwent ultrasound transvaginal examination, which revealed a gestational sac containing an embryo 8 mm long in the left side of the uterus, distinct from the endometrial cavity. The fetal cardiac activity was detected by sonography. Both the endometrium and gestational sac appeared to be surrounded by a 5.1 mm thick myometrium. Both ovaries appeared normal and there was no free fluid in the pouch of Douglas. The general physical examination was normal and the patient had not recently experienced any pain, vaginal spotting or bleeding, or nausea or vomiting. She has previously had a normal pregnancy with the spontaneous delivery at the term. Both pregnancies were conceived spontaneously. The next day hCG level was 27882 mUI/ml.

After 2 days of expectant management, the serum hCG level was 35305 mUI/ml and the ultrasound examination was the same, but there was free fluid in the cul de sac. At this point, laparoscopy was performed and confirmed the diagnosis of interstitial pregnancy. Both ovaries and the right tube appeared normal, but at the left there appeared to be a 4 cm bilge in the cornua of the uterine body and the proximal part of the tube. Because the tubal wall appeared to be very thin and destructed by the pregnancy, we decided to remove the entire fallopian tube. Vasopressin infiltration of the mesosalping was performed and a loop was applied on the left uterine cornua to create a temporal haemostasis. Laparoscopic left salpingectomy was performed and the incision was made up to endometrium slit without opening the uterine cavity. An introflect haemostatic suture was executed. The estimated blood loss was less than 100 ml.

Two days after surgery the patient was discharged when the ultrasound control revealed a normal uterine cavity and hCG level was 10.749 mUI/ml. At successive weekly controls the serum hCG level has dropped to less than 2 mUI/ml and there were no ecographic signs of the previous ectopic pregnancy. The pathology report confirmed an interstitial pregnancy.



Fig. 2. Interstitial pregnancy: gestational sac with a yolk sac and a fetal pole

Case 3

A 34-year-old woman, gravida 3, para 2, at 7 weeks' amenorrhea presented at our hospital. The patient had no vaginal bleeding or abdominal pain and a home pregnancy test was positive. She has had two prior Caesarean sections by transverse incision of the lower uterine segment, both at the term of the pregnancy, the latest two years before. The physical examination was normal. Findings on gynaecologic examination included a nontender cervix, and a mildly enlarged, nontender and mobile uterus. Transvaginal sonography revealed a gestational sac of 15 mm with a yolk sac in the anterior part of the uterine isthmus, secretive endometrium and an empty cervical canal. The right ovary contained a luteal cyst of 26 mm, the left one appeared normal and there was not free fluid in the cul de sac. Serum hCG level was 4600 mUI/ml. A diagnosis of Caesarean scar pregnancy was made.



Fig. 3. Ultrasound imaging: an empty cervical canal and the presence of the gestational sac in the anterior part of the uterine isthmus

As the patient desired future childbearing, and there was no evidence of uterine rupture, we decided for expectant management. Serial quantitative hCG levels were static at 4600–5000 mUI/ml and ultrasound follow-up showed no progress of the volume of the gestation sac. Spontaneous

uterine bleeding began 10 weeks after the last menstrual period of the patient, and serum hCG decreased to less than 2 mIU/ml a week later. Not excessive bleeding was observed, no pelvic pain. The Caesarean scar mass controlled by ultrasonography, regressed after two months and the patient resumed normal menstrual cycles.

DISCUSSION

The incidence of ectopic pregnancies has been increased in recent years. Diagnostic and surgical improvements had given opportunity not only to save life of the patient but also to preserve her fertility, in most of the cases. Despite this, ectopic pregnancy is still a potentially dangerous diagnosis and the leading cause of first trimester maternal death in the United States (1).

The use of assisted reproductive technology plays an important role in the increased incidence of ectopic pregnancy, including interstitial pregnancy (9). The incidence of ectopic pregnancy after in vitro fertilization is about 1 in 100 pregnancies (2). All three ectopic pregnancies reported in this article were conceived spontaneously.

The diagnosis of an interstitial pregnancy by the combination of physical examination and ultrasound may not be obvious. In a recent study ultrasound revealed a gestational sac in 40.6% of the patients and hyperechoic mass in the cornual region in another 25% (9). The diagnosis was established in 71.4% cases with sensitivity of 80% and a specificity of 99%. Laparoscopic exam may be necessary to establish the diagnosis (2, 9).

Traditionally the treatment of interstitial pregnancy has been hysterectomy or laparotomic cornual resection. The incidence of rupture in the cornual area is 48.6% and, if occurs, it leads to catastrophic haemorrhage and even death (4). In a recent study all cases of interstitial pregnancy rupture occurred before 12 weeks, that is relatively early, in contrast to previous beliefs (9).

Conservative treatment with hysteroscopic resection or with laparoscopic surgery has several advantages: immediate evidence of success or failure and preservation of uterine integrity and fertility. Total salpingectomy does not always prevent cornual pregnancy (5). In our case, it was performed to avoid the risk of a new tubal pregnancy.

The surgery of cornual pregnancy is associated with an increased risk of severe haemorrhage. Cauterisation of ascending uterine vessels or use of fibrin glue has been proposed (5). In our case a haemostatic loop was successfully used. The early sonographic diagnosis allowed the procedure to be performed while the patients is stable. We do not know whether it could be performed during heavy bleeding or unstable haemodynamic condition. We recommend, in case of operative hysteroscopy for interstitial pregnancy, performing it under laparoscopic control so if uterine rupture or bleeding occurs, haemostasis can be immediately achieved.

Although Caesarean delivery is a very common procedure, few ectopic pregnancies within Caesarean scar have been reported. Because outcomes and treatments may differ, Caesarean scar pregnancies must be distinguished from other types of ectopic pregnancies, including cervical, cervico-isthmic, and cervico-isthmic corporeal pregnancy (10). The differential diagnosis can be difficult. A sagittal ultrasound view along the long axis of the uterus, through the gestational sac is recommended. Strict ultrasound imagining criteria proposed lately are: an empty uterine cavity, an empty cervical canal, the development of the gestational sac in the anterior part of the uterine isthmus, and an absence of healthy myometrium between the bladder and sac. The last criterion allows differentiation from cervico-isthmic implantation (3). According to these criteria the third case was a Caesarean scar pregnancy.

Because of the rarity of this ectopic implantation, there is not standardized treatment for Caesarean scar pregnancy. Local or systemic methotrexate treatment (3), local somministration of hyperosmolar glucose followed by oral methotrexate and laparoscopic resection were successfully used. Curettage seems to be contraindicated because of the risk of severe haemorrhage. Surgical resection seems to be the best treatment option. One case of expectant management with healthy newborn has been described. In our case the spontaneous abortion occurred after expectant management and the potential fertility of the patient was preserved.

CONCLUSIONS

The early sonographic diagnosis appears to be helpful in conservative management decision making of ectopic pregnancy. Surgical conservative treatment appears to be safe and effective option for patients with early cornual pregnancy desiring to preserve their fertility.

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SUMMARY

Ectopic pregnancy implanted in the proximal part of the fallopian tube or in the Caesarean scar is rare but potentially dangerous occurrence. Early diagnosis and appropriate treatment are crucial. The authors report two cases of interstitial pregnancy successfully treated by conservative surgery and one case of Caesarean scar pregnancy spontaneously resolved after expectant management. The early sonographic diagnosis appears to be helpful in conservative management decision making of ectopic pregnancy. Surgical conservative treatment appears to be safe and effective option for patients with early cornual pregnancy desiring to preserve their fertility.

Pomyślne leczenie zachowawcze rzadkich typów ciąży pozamacicznej: opis trzech przypadków

Ciąża pozamaciczna zagnieżdżona w śródściennej części jajowodu lub w bliźnie macicznej po cięciu cesarskim występuje niezwykle rzadko, ale stanowi ogromne zagrożenie dla życia ciężarnej. Wczesna diagnoza i odpowiednie leczenie są kluczowe. Autorzy przedstawiają dwa przypadki śródściennej ciąży, skutecznie leczone chirurgicznie z zachowaniem funkcji rozrodczych oraz przypadek ciąży w bliźnie po cięciu cesarskim zakończony poronieniem naturalnym. Wczesna diagnoza ultrasonograficzna dopomaga w podjęciu leczenia ciąży pozamacicznej, umożliwiającą zachowanie przyszłej płodności pacjentki. Chirurgia zachowawcza jest bezpieczną i skuteczną metodą w leczeniu wczesnej ciąży pozamacicznej u pacjentek pragnących zachować płodność.