Successfull Treatment of Cervical Pregnancy with Methotrexate Administration: A Case Report

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A case of cervical pregnancy which was successfully treated by intramuscular methotrexate therapy is presented. It is suggested that, in cervical pregnancies in which fertility preservation is desired, medical treatment would be applied if the patient condition is proper.

Key Words: Cervical pregnancy, Methotrexate, Fertility preservation

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Introduction

Cervical pregnancy is a rare form of ectopic pregnancy which is often associated with significant morbidity and devastating effects on future fertility. It accounts for, 1% of all ectopic gestations. Its incidence varies between 1 in 1000 to 16 000 pregnancies, with the highest figures reported from Japan, which also has a high incidence of antecedent curettage. The diagnosis of cervical pregnancy is commonly delayed and is often made intraoperatively in the presence of massive blood loss, necessitating an emergency hysterectomy in ~50% of cases. Early diagnosis has been improved by ultrasonography, with a consequent decrease in morbidity and mortality. During the last decade, in an attempt to avoid hysterectomy and preserve fertility, more conservative surgical approaches were developed including intra-cervical balloon tamponade after cervical curettage, cervical cerclage, hypogastric iliac artery ligation, arterial embolization under angiographic curettage, local prostaglandin injection and hysteroscopic resection. On the other hand surgical techniques has the risk of abundant bleeding and medical treatment methods using methotrexate (MTX), actinomycin-D and etoposide have recently been developed. In this report, we present a conservative approach using treatment with MTX for cervical pregnancy.

Case report

A 35-year-old woman, gravida 2, abortion 1 was admitted to our department at 6 weeks gestation for the first antenatal visit. Her medical history was remarkable, with previous intrauterine procedure for 12 weeks intrauterine ex fuita gestation and she uses levothyroxine for hypothyroidism. Vital signs were stable, and the abdomen was soft and not tender. Pelvic examination revealed a barrel-shape uterine cervix with minimal bright bleeding protruding through a closed external os. The uterus was slightly enlarged and had no adnexal masses. Transabdominal and transvaginal ultrasound examinations (Aloka SSD prosound 5500, Tokyo, Japan, 5 MHz) confirmed the presence of a cervical pregnancy with fetal pole and fetal cardiac activity (Figure 1). Quantitative beta-human chorionic gonadotrophin (ßHCG) concentration was 37378 mIU/ml on admission.

Figure 1: Cervical pregnancy with fetal pole and fetal cardiac activity

In an attempt to preserve fertility, we offered the patient conservative management with intramuscular (im) MTX. The potential risks and alternative methods of treatment were explained to her, and written informed consent was obtained. The most commonly used treatment regimen in our department was applied. This consisted of im MTX 1 mg/kg and folinic acid 0.1 mg/kg given alternately every other day for 4
days. The patient’s complete blood count (CBC) with hemo-
gram (Hb)=12.8, white blood cell (WBC)=9110, platelet
(plt)=247.000 and liver function tests ALT/AST=26/22
mIU/ml were normal at admission. On the first day of MTX
therapy, disappearance of fetal cardiac activity was deter-
mined with ultrasound examination. On the fifth day of med-
ic treatment, despite decreasing βHCG value (24283
mIU/ml) sudden profuse vaginal bleeding has been occurred.
On the basis of the patient’s haemodynamically stable state
and cessation of vaginal bleeding after two days, we decided
to follow up the patient conservatively. In laboratory findings
Hb(11.6) was decreased a little and liver enzymes were in-
creased (ALT/AST=37/31). There were 2x2cm gestation ma-
terial at cervix on speculum examination and ultrasound im-
ageing showed 41x21mm gestation sac with CRL=10mm ex
fetus. One more dose of MTX was repeated. During expectant
management, vaginal spotting has been continued and liver
enzymes were increased (ALT/AST=91/41). Because of im-
paired liver function, MTX therapy has not been repeated. On
the tenth day of MTX treatment βHCG level was 12362
mIU/ml, on the 13th day βHCG level was significantly de-
creased to 4183mIU/ml and cervical gestation sac was de-
creased to 12x12mm diameters. One week later βHCG level
was regressed to 363 mIU/ml, gestation sac was measured
5x5mm diameters and the amount of vaginal spotting has been
diminished. The βHCG concentration continued to drop to 68
mIU/ml level and gestation sac was disappeared two weeks
later. With the commencement of menstruation, the pelvic
sonography was evaluated as normal.

Discussion

Cervical pregnancy is a rare form of ectopic pregnancy, al-
though its prevalence may be increased in patients undergoing
in vitro fertilization. With the introduction of high resolution
ultrasound and sensitive serum βHCG assay, cervical preg-
nancy is diagnosed much earlier.

There are two main treatment options for cervical preg-
nancy when fertility is desired: surgical and pharmacological.
The different methods described include cervical cerclage,
intracervical balloon tamponade of the cervix, vaginal pack-
ing, local haemostatic sutures, curettage followed by local
prostaglandin instillation, ligation of the descending
branches of the uterine arteries, and bilateral hypogastric ar-
tery ligation. Since the early 1980s there have been many re-
ports of the successful and unsuccessful use of chemotherapy;
MTX has been variously administered by the im, intravenous,
intracervical and intra-amniotic routes. The presence of
fetal cardiac activity or advanced gestational age has not in-
fluence to the success rate of treatment.

In our case, in an attempt to preserve fertility, we chose a
conservative approach. We suggest that MTX, which seems

by far the best choice for treatment of cervical pregnancies,
should be offered first by the im route, by the routine protocol
most commonly used by the department, which is considered
simple and safe. If on follow-up evaluation, βHCG concen-
trations do not decrease (15% from baseline) or persistent fetal
cardiac activity is observed, direct intra-arterial MTX should
be instituted.

Massive hemorrhage is the serious complication of the cer-
vical pregnancy and reported the incidence 29,1% at the time
of admission to the hospital. Spotting or mild bleeding rate
was seen only 20,2% of patients. The patient had mild bleed-
ing when she admits to the hospital and the bleeding was con-
tinued as spotting after MTX treatment.

The adverse effect of MTX administration includes bone
marrow depression, nausea, vomiting, diarrhoea, oral ulcers,
stomatitis and high doses can cause significant myeloid sup-
pression, acute and chronic hepatotoxicity, pulmonary fibrosis
Local treatment was chosen to avoid the adverse effects of
the systemic MTX administration. Intra-cervical or intra-am-
niotic administration were used successfully to treat the cervi-
cal pregnancy recently.

In previous reports, a gestational age of >9 weeks, serum
βHCG concentration of >10000 mIU/ml, a crown-rump
length>10mm and embryonic cardiac activity were associated
with unsatisfactory results of MTX treatment. However Kim
et al. reported that the fetal heart activity and the size of ges-
tation sac did not affect the treatment efficacy of medical or
surgical treatment.

In conclusion, early diagnosis and appropriate MTX regi-
men could contribute to successful treatment with preserva-
tion of the uterus and future reproductive ability.

Servikal Gebeliğin Metotreksat Uygulamasıyla
Başarılı Tedavisi

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İntramüsküler metotreksat tedavisi ile başarılı şekilde tedavi
edilen servikal gebeliğin olgusu sunulmaktadır. Çalışmamız gös-
termektedir ki, fertilite korunması amaçlanırsa ve hastanın
kliniği uygun ise servikal gebelikle medikal tedavi uygulanabilir

Anahtar Kelimeler: Servikal gebeliğ, Metotreksat, Fertilite
koruma

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