

# Successful conservative treatment of a cervical ectopic pregnancy at 13 weeks

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## Summary

**Background:** Cervical ectopic pregnancy is a potentially life-threatening condition due to the unexpected occurrence of uncontrollable bleeding from the cervix. **Case Report:** A 39-year-old secundigravida was admitted with amenorrhea of 12 weeks and four days due to suspected cervical pregnancy, without bleeding. The ultrasonography revealed a gestational sac at the anterior wall of the isthmic-cervical part with a single viable fetus, with crown-rump length (CRL) of 59 mm and regular heart rate. The serum  $\beta$ -human chorionic gonadotropin ( $\beta$ -hCG) level on admission was 143.416 mIU/l. Two possible therapeutic options were considered, (1) systemic methotrexate treatment and (2) uterine artery embolization with gelatine sponge. The first was rejected due to gestational age, viable fetus, high  $\beta$ -hCG level, and CRL, and the later was rejected by the vascular surgeons due to lack of experience. The curettage was performed. After the evacuation, prostin was administered into cervix accompanied with tamponade. On the next day  $\beta$ -hCG level was 44.342 mIU/l and the following day ultrasonography revealed the oval non-homogenous formation in the cervical cavity (blood clots or residual trophoblastic tissue);  $\beta$ -hCG level was 36.501 mIU/l. The reintervention was performed on the fifth day after the curettage and 200 ml of coagulated blood was aspirated;  $\beta$ -hCG level was 16.432 mIU/l. Since the isthmic-cervical part was slightly dilated (23 mm) seven days after the curettage, systemic methotrexate treatment (100 mg intramuscular) was initiated. Serum  $\beta$ -hCG level on the second and fourth day after methotrexate were 12.553 mIU/l and 8.900 mIU/l, respectively. The second dose of 100 mg of methotrexate was administered intramuscular seven days after the first dose. Three days after,  $\beta$ -hCG level was 2.329 U/l and ultrasound scan revealed normal isthmic-cervical finding. **Conclusion:** The present case report showed efficient fertility sparing conservative treatment, dilatation and curettage, of 13 week cervical pregnancy followed by systemic methotrexate.

**Key words:** Cervical ectopic pregnancy; Fertility-sparing treatment.

## Introduction

Cervical ectopic pregnancy is a potentially life-threatening condition due to unexpected occurrence of uncontrollable bleeding [1]. The incidence of cervical ectopic pregnancy is very low ranging from 0.005% to 0.1% [2]. The etiology of cervical pregnancy is unclear. Potential contributing factors are the following: previous curettage, Asherman's syndrome, previous cesarean delivery, previous uterine or cervical surgery, in vitro fertilization, and older maternal age [3].

## Case Report

A 39-year-old secundigravida was admitted to the Intensive Care Unit with amenorrhea of 12 weeks and four days due to suspected cervical pregnancy. Patient had previous cesarean delivery five years prior to admission. She was referred from regional hospital where cervical pregnancy had not been recognized in sixth gestational week during evaluation of mild vaginal bleeding, and progesterone had been administered. At admission to the present authors' department, patient complained of mild pelvic pain and pressure. Vaginal examination showed regular-sized cervix, no bleeding, and closed external

cervical os. The transvaginal ultrasonography revealed a gestational sac in isthmic-cervical part with a single viable fetus, with crown-rump length (CRL) of 59 mm and regular heart rate and obvious movements. Chorion was invading anterior cervical wall. Cesarean section scar on front isthmical wall was neat. Uterine cavity revealed thick endometrium without gestational sac. The serum  $\beta$ -human chorionic gonadotropin ( $\beta$ -hCG) level on admission was 143.416 mIU/l. Escherichia coli and Candida were isolated from cervical and vaginal smears, so adequate systemic antibiotics were administered.

Since the patient had strong desire for preserving the uterus and her condition was not life threatening, the authors considered possible conservative treatments. After revising the literature, no study with satisfactory outcome after conservative treatment of cervical pregnancy of this gestational age was found, hence the authors were considering two possible therapeutic options. One of them was systemic methotrexate treatment and the other was uterine artery embolization with gelatine sponge. Vascular surgeons were consulted but the proposition was rejected since they had no experience with such technique and they were concerned about the outcome and potential complications. Since patient's condition became unstable, considering all relevant facts, the authors could only try to perform curettage being aware of possible massive bleeding and potential hysterectomy. Before the procedure, patient was informed about all potential complications and written consent was obtained.

Revised manuscript accepted for publication January 12, 2015

On obtaining sterile smears, controlled by transabdominal ultrasonography, cervical and uterine cavity dilatation and curettage was performed and the fetus and most of the trophoblastic tissue were evacuated. The intraoperative assessment indicated high risk for uterine perforation on the caesarian scar, therefore the evacuation was aborted although the entire trophoblastic tissue had not been evacuated. Several single sutures were placed on implantation site and prostin was administered into cervix accompanied with cervical and vaginal tamponade. Systemic wide-spectrum antibiotics and uterotonic drugs (oxytocin and methylergometrine) were administered. On the day following the curettage,  $\beta$ -hCG level was 44.342 mIU/l. Two days after the curettage, transvaginal ultrasonography suggested that cervical cavity was filled with oval non-homogenous formation sized 38 x 23 mm, featuring blood clots or residual trophoblastic tissue;  $\beta$ -hCG level was 36.501 mIU/l. Since the ultrasonographic finding was the same five days after the curettage, it was decided to perform reintervention and approximately 200 ml of coagulated blood was aspirated;  $\beta$ -hCG level was 16.432 mIU/l. Two days after the second intervention (seven days after curettage), isthmic-cervical part was slightly dilated (23 mm) and filled with non-homogenous content, so systemic methotrexate treatment (100 mg intramuscular) was initiated. Serum  $\beta$ -hCG level was decreasing during the second and fourth day after methotrexate administration and were 12.553 mIU/l and 8.900 mIU/l, respectively. Since ultrasound scan seven days after the first dose of methotrexate revealed that non-homogenous formation was still present although less, the second dose of 100 mg of methotrexate was administered. Three days after the second methotrexate dose,  $\beta$ -hCG level was 2.329 U/l and ultrasound scan revealed normal isthmic-cervical finding. Subsequent monitoring showed a steady decline of  $\beta$ -hCG values, which dropped below detectable limits a month after the procedure, and also by that time, the woman had her next menstrual period. At the moment, the patient is under oral contraceptive therapy and it is planned that this treatment is to last for six months.

## Discussion

Because cervical pregnancy is so infrequent, no randomized controlled trials of treatment options exist. Case reports may add new knowledge, particularly on new ways of minimizing the risk of hysterectomy. Most patients with cervical ectopic pregnancy are women with low parity; thus, the current treatment tendency is to preserve reproductive function. The main problem with nonsurgical treatment of cervical ectopic pregnancy is the possibility of a life-threatening hemorrhage before or after pregnancy evacuation [4].

The goal of methotrexate administration is to selectively kill the cytotrophoblastic tissue of ectopic pregnancy while preserving fertility. The single dose protocol describes the administration of 50 mg/m<sup>2</sup> of methotrexate given by intramuscular injection without the use of leucovorin. The reported success rate of systemic methotrexate administration differs among various authors. Presence of fetal cardiac activity, CRL greater than ten mm, gestational age greater than nine weeks, and initial serum hCG levels greater than 10,000 mIU/ml have been considered as poor prognostic factors with high failure rates. However, ex-

ceptions have been described, and some authors suggest that it may be worthwhile to start treatment with intra-muscular methotrexate [5, 6].

Embolization of the uterine artery has been well described and may be the best option of treatment of cervical pregnancy, which does not respond to systemic methotrexate, even up to 12 weeks of gestation [7]. Embolization with gelfoam considerably reduces circulation in the catheterized region for about 24 hours and provides only temporary occlusion of the vessel for two to six weeks. It is often done bilaterally, but unilateral embolization can be used when angiography indicates unequal disposition of the arterial connections supplying the embryo. This may be preferable because less pelvic pain and fewer cases of temporary or consistent amenorrhea as the sequel of tissue ischemia occur [8]. All patients usually experience some degree of cramp pelvic pain after the embolization procedures, mostly on the first day, resolving within a week. Most of the women conceived after this procedure and delivered healthy newborns at term. Cervical dilatation and curettage performed after uterine artery embolization provides more secure removal of the pregnancy, shortens follow-up, and reduces cost. Initial angiographically directed embolization reduces the risks for the surgical procedure and appears to be the method of choice when treatment with methotrexate fails [9].

Since no study with satisfactory outcome after conservative treatment of cervical pregnancy of this gestational age was found, hCG level was greater than 10,000 (143.416 mIU/l), CRL was greater than ten mm (59 mm) and amenorrhea was greater than nine weeks (13 weeks), the authors excluded the possibility of treatment with methotrexate, as a single strategy and prior to surgical evacuation, and decided to attempt dilation and curettage.

## Conclusion

The present case report showed that conservative treatment, dilatation and curettage, of 13-week cervical pregnancy followed by methotrexate administration was efficient. Reproductive ability of the patient was preserved, which was the main goal.

## References

- [1] Nadisauskiene R., Vaicekavicius E., Taraseviciene V., Simanaviciute D.: "Conservative treatment of cervical pregnancy with selective unilateral uterine artery embolization". *Medicina (Kaunas)*, 2007, 43, 883.
- [2] Pantelis A., Daniilidis A., Dinas K.: "Conservative treatment of a 7 week cervical ectopic pregnancy after intra-uterine insemination". *Hippokratia*, 2013, 17, 95.
- [3] Hirakawa M., Tajima T., Yoshimitsu K., Irie H., Ishigami K., Yahata H. *et al.*: "Uterine artery embolization along with the administration of methotrexate for cervical ectopic pregnancy: technical and clinical outcomes". *AJR Am. J. Roentgenol.*, 2009, 192, 1601.

- [4] Heikinheimo O., Leminen A., Cacciatore B., Rutanen E.M., Kajanoja P.: "Advanced cervical pregnancy: uterus sparing therapy initiated with a combination of methotrexate and mifepristone followed by evacuation and local hemostatic measures". *Acta Obstet. Gynecol. Scand.*, 2004, 83, 211.
- [5] Zakaria M.A., Abdallah M.E., Shavell V.I., Berman J.M., Diamond M.P., Kmak D.C.: "Conservative management of cervical ectopic pregnancy: utility of uterine artery embolization". *Fertil. Steril.*, 2011, 95, 872.
- [6] Moon H.S., Hyun J.H., Kim K.S., Kim H.J., Moon S.E., Koo J.S.: "Use of Tuohy needle for intraamniotic methotrexate injection through the cervical canal in a cervical pregnancy after failure of systemic methotrexate therapy". *Am. J. Obstet. Gynecol.*, 2010, 202, e4.
- [7] Burbank F.: "History of uterine artery occlusion and subsequent pregnancy". *AJR Am. J. Roentgenol.*, 2009, 192, 1593.
- [8] Chaudhary V., Sachdeva P., Kumar D., Arora R., Banavaliker J., Khan M.: "Conservative management of cervical pregnancy: a report of two cases". *J. Reprod. Med.*, 2013, 58, 451.

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