

Cervical ectopic pregnancy: Mersilene tape in surgical management

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In view of the rarity of cervical ectopic gestation and the potentially high morbidity that may be associated with its presentation and management, we report management of a case of cervical ectopic pregnancy using cervical cerclage with Mersilene tape as an intervention to reduce intraoperative haemorrhage during evacuation. The 36-year-old woman had a classic diagnosis of cervical ectopic pregnancy made in the consulting room with a transvaginal ultrasound examination. Evacuation with suction curettage was performed, and brisk bleeding was arrested with Mersilene tape. Placing a cervical cerclage is a relatively easy procedure to perform and may prevent major intraoperative bleeding, thereby minimising the risk of a major surgical procedure.

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Cervical ectopic gestation is rare and may potentially be associated with high morbidity. We report a case of cervical ectopic pregnancy that was managed using cervical cerclage with Mersilene tape as an intervention to reduce intraoperative haemorrhage during evacuation.

Case report

A 36-year-old woman, gravida 3 para 2, with two previous caesarean sections in 2004 and 2012 (reasons not known), was referred by a general practitioner (GP) with a history of vaginal bleeding. A provisional diagnosis of threatened miscarriage requiring further assessment and treatment had been made by the GP.

Further history from the patient at presentation revealed that she had been admitted to a district hospital by the GP 2 weeks earlier for anaemia, and had been transfused with two units of blood. The cause of the anaemia had not been investigated. She was on highly active antiretroviral therapy, which was assumed to be the cause of the anaemia. She had been discharged to see a gynaecologist for further evaluation of the cause of the anaemia. Pregnancy was not diagnosed at that time.

The patient's last menstrual period had been during the previous month (exact date not known), and she was not on any contraceptive as pregnancy was anticipated. There was no further history of note. She was not pale, and was haemodynamically stable. Abdominal examination was unremarkable. Vaginal examination showed a closed but bulky and hyperaemic cervix with a pinkish stain on the examining glove. It was slightly tender to pressure. Transvaginal ultrasound examination showed an empty uterus with no adnexal mass. A gestational sac was found in the endocervix with a fetal pole consistent with a 4-week pregnancy (compatible with the last menstrual period). Cervical ectopic pregnancy was diagnosed.

Admission, treatment modalities and potential risks were discussed and consent was obtained. The beta-human chorionic gonadotrophin (hCG) level was 1 838 mIU/ml, urea and electrolyte levels were normal, and the haemoglobin and haematocrit levels

were 9.8 g/dl and 31%, respectively. Two units of blood were made available for evacuation and other possible surgical intervention.

The patient was placed in the lithotomy position. Vasopressin, 20 U/ml, was diluted 1 in 20 and injected paracervically while suction evacuation was done with an 8 mm flexible plastic curette. Copious cervical bleeding ensued immediately post evacuation and was arrested by placing a Mersilene tape circumferentially on the uterine cervix. Bleeding was controlled and two units of blood were given. The patient was sent to the recovery ward. She was closely monitored for post-evacuation haemorrhage and discharged to the gynaecological high-care ward for further monitoring. The first postoperative day was uneventful, and the Mersilene tape was removed 36 hours after the procedure. The patient was discharged in a satisfactory condition 2 days after evacuation. Follow-up was arranged weekly for 3 weeks. Repeat haemoglobin was 9.1 g/dl a week after discharge. Weekly monitoring of the beta-hCG level showed decreasing levels until <5 mIU/ml 3 weeks after procedure. The patient made an uneventful recovery. Written consent was obtained from her for publication of this case report.

Discussion

Cervical ectopic pregnancy is a rare occurrence; the incidence is less than 1% of ectopic pregnancies.^[1] There may be cases where the diagnosis could have been missed and the patient managed as an inevitable miscarriage. With the use of transvaginal ultrasound, many more cases are being diagnosed. Patients may present with mild abdominal cramps and vaginal bleeding. The notable risk factors are use of an intrauterine contraceptive device, previous abortion, a history of smoking, a history of dilatation and evacuation, caesarean section and *in vitro* fertilisation with embryo transfer.^[2,3] Ultrasound imaging was first used in the diagnosis of cervical pregnancy in 1978 and has been the 'gold standard'. Diagnosis by ultrasound examination, as suggested by Raskin,^[4] should include four factors: enlargement of the cervix, uterine enlargement, diffuse amorphous intrauterine echoes, and absence of intrauterine pregnancy. In 1993, Timor-Tritsch *et al.*^[5] proposed more stringent criteria: the placenta and entire chorionic sac

containing the live pregnancy must be below the internal os, and the cervical canal must be dilated and barrel shaped. The point of insertion of the uterine artery was used as the level of the internal os. Later reports with transvaginal and colour Doppler imaging modified the diagnostic criteria.^[6]

The pathogenesis of cervical ectopic pregnancy is still debated, but it has been postulated to be due to abnormal embryonic implantation to the mostly fibrous tissue of the uterine cervix. The 80% fibrous tissue and 20% smooth-muscle component of the cervix has poor contractility, and it is therefore predisposed to haemorrhage with poor response to uterotonic agents.^[7]

Management is preferably medical with the use of methotrexate and potassium chloride, with a varying degree of success.^[8] Massive bleeding can occur after methotrexate treatment as a result of decidua shedding from the atonic cervix. Feticide with the use of potassium chloride has been advised in cases of embryonic cardiac activity prior to methotrexate administration to minimise failure.^[9] Conservative surgical treatment under general anaesthesia includes suction curettage, Foley balloon tamponade and intracervical infiltration of Carboprost.^[10] In a study undertaken by Kirk *et al.*,^[11] the success of conservative surgical treatment could be predicted by the diagnostic accuracy of initial ultrasound. The accuracy of early diagnosis will minimise the chance that hysterectomy or blood transfusion will be necessary. However, failure of medical intervention warrants surgical manoeuvres that can vary from dilatation and curettage and cervical artery angiographic embolisation to hysterectomy.

Our report combines the use of a vascular constrictive agent and mechanical pressure on the cervical arteries using Mersilene tape during the evacuation procedure, without the use of intracervical tamponade. The emphasis in this clinical report is the use of Mersilene tape to arrest haemostasis. Mersilene tape (Ethicon Endo-Surgery Inc.) is a polyethylene terephthalate suture, which is non-absorbable and braided. It is used in cases of cervical incompetence in early pregnancy to prevent miscarriage or premature delivery. The tape, which is 5 mm in width, is circumferentially placed close to the internal os and the 'purse string' tightened to occlude the cervico/

uterine arteries. As in our case, this may arrest haemorrhage to an acceptable level and prevent massive bleeding. The use of a cervical cerclage and Foley's balloon tamponade in preventing haemorrhage in cervical ectopic pregnancies has been reported in three cases.^[13] The tamponade was removed on postoperative day 2 and the cervical cerclage was removed on day 7. We removed the cerclage on our patient's second postoperative day. We assumed that the normal haemostatic mechanism would have been optimised during this period, thereby reducing the cost of hospitalisation.

Adjuvant cervical cerclage in this case report and a few other previously reported cases will bring into focus the gradual introduction of cervical cerclage as a conservative surgical procedure in the armamentarium of surgical intervention in cervical ectopic pregnancies.

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