CERVICAL ECTOPIC PREGNANCY IN A PATIENT SUSPECTED WITH CERVICAL CANCER: A CASE REPORT

M Febiani¹, NB Mahendra¹, II Maker², NS Laksminingsih³

¹Obstetrics & Gynecology Department, ²Pathology Anatomy Department, ³Radiology Department Sanglah General Hospital/Udayana University Bali, Indonesia

Background and aims: Ectopic pregnancy (EP) is one of obstetrics challenge which is associated with high mortality and morbidity. Cervical pregnancy occurs in less than 0.1% of pregnancies, and less than 1% of all EP. Although extremely rare, it is potentially life-threatening, due to delays in diagnosis and proper management. We aim to discuss a case of cervical ectopic pregnancy which was mistaken as neoplasm.

Case: This is a case report presenting a 32 yo female with profuse vaginal bleeding. She was referred from a clinician with diagnosis severe anemia and intracervical mass. She admitted positive pregnancy test, of which was pronounced miscarried by the clinician 1 month prior to admission. Our vaginal examination revealed a fragile and easy to bleed cervical mass which was really suggestive of cervical carcinoma or cervical extension of gestational neoplasm. Ultrasound was inconclusive. Magnetic resonance imaging showed cervical mass, which was later confirmed as conception by cervical biopsy. Methotrexate therapy was given 4 times (1 mg/kgBW). MRI evaluation afterward showed complete resolution.

Conclusion: Lower incidence of cervical pregnancy, which is opposite with cervical carcinoma's incidence in Bali becomes a major obstacle in diagnosing and in the provision of therapy. An accurate history, physical examination and pregnancy test are key modalities in the determination of cervical pregnancy, supported by histopathologic examination, TVS ultrasound examination and MRI.

Keywords: Ectopic; cervical pregnancy; methotrexate

INTRODUCTION

Ectopic pregnancy (EP) is one of obstetrics challenge, which is associated with high mortality and morbidity for women. In developed countries, the estimated incidence of EP is 1-2% of the general population, and 2-5% among patients using assisted reproductive technique (ART).^{1,2} In Indonesia, the incidence of EP is reported at 3% with 60,000 new cases per year.³ About 10% of cases are non-tubal pregnancies.¹ Cervical pregnancy occurs in less than 0.1% of pregnancies,^{4,5} and less than 1% of all EP with incidence varies from 1: 95,000 to 1: 1,000 pregnancies.^{1,4,6}

Management becomes a major problem in cervical pregnancy. The failure of making early diagnosis is a major cause of patient morbidity and mortality. Hysterectomy used to be an almost routine action because of bleeding that occurs during curettage. With increasing experience and the development of diagnostic modalities, more conservative management becomes more popular.⁶ Common conservative managements include methotrexate injection (MTX), foeticidal injection on conception, curettage plus arterial ligation, and tamponade using Foley catheter.^{1,4}

Because of the rarity of incidence, demographic and resource differences, the most effective treatment for cervical pregnancy can not be determined.⁷ Protocols vary across centres which makes it more of a dilemma for clinicians. Here we present a case of cervical pregnancy previously thought to be a cervical uterine neoplasm which was treated with conservative approach.

CASE REPORT

A 32 yo primiparous woman referred from O&G with diagnosis severe anemia post abortion + intracervical mass (Figure 1). She complained vaginal bleeding since 2 days before that worsened hours prior to admission. One month before, she was diagnosed with miscarriage and was given uterotonics; no complain was noted afterward. She admit repeat vaginal spotting since one year, and never seek treatment. No additional complain or remarkable history was noted.

Her vital signs showed hypovolemic shock which was stabilized immediately. Vaginal examination revealed fragile and easy to bleed cervical mass sized 2x2 cm. Livide sign was recognized, and no vaginal involvement was seen. Uterus size was normal and no pelvic or adnexal mass was palpable. Cervical punch biopsy was taken. Laboratory examination showed severe anemia (Hb 4.33 g/dL) and positive pregnancy test. She was diagnosed with suspected cervical carcinoma, and choriocarcinoma as differential diagnosis. Blood transfusion and antifibrinolytic were given during hospital stay. Serum β -human chorionic gonadotropine (β -hCG) was 1238.0 mIU/mL which decreased into 484.70 mIU/mL. In the following day, she was discharged in the 4th day.

During outpatient visit, pathologic anatomy result (Figure 2) confirmed cervical pregnancy, which was supported by transvaginal ultrasound (TVS) and MRI (Figure 3). Medical treatment was chosen, using Intravenous methotrexate (MTX, 1 mg/kgBW) combined with Leucovorin (0.1 mg/kgBW). Chemotherapy was given 4 times, every two days interval. One week after treatment, her β -hCG level dropped to normal (0.19 mIU/mL), which was consistent in the following week (0.17 mIU/mL). Repeat imaging studies confirmed the pregnancy resolution (Figure 4).

Figure 1. Seen intracervical mass from vaginal inspection

Figure 2. Pathologic Anatomy examination images: (A) Using 40x magnification, and (B) 400x magnification, the presence of chorionic villi and trophoblast; (C-D) Using 100x magnification, the presence of chorionic villi and trophoblast; (E) The endocervical tissue contains areas of bleeding with chorionic villi in between (yellow arrow: endocervical gland, blue arrow: chorionic villi); (F) The cervical tissue contains chorionic villi (yellow arrows) covered by trophoblastic cells, syncytiotrophoblast (green arrow) and cervical stroma in the form of decidual tissue (blue arrow).

Figure 3. Imaging studies before treatment. (A) Transvaginal ultrasound prior to chemotherapy; (B) Pelvic MRI image prior to chemotherapy. T1 Axial picture; (C) T1 Coronal; (D) T2 Sagittal.

Figure 4. Imaging studies after treatment. (A) Transvaginal ultrasound after chemotherapy; (B) Pelvic MRI image after chemotherapy. T1 Axial picture; (C) T1 Sagittal; (D) T2 Sagittal.

DISCUSSION

Cervical pregnancy is defined as implantation of the blastocyst at the endocervix, distal from the internal uterine ostium (IOU).^{4,8,9} The mechanism of ectopic pregnancy is still unknown though it is thought to be related to the altered fallopian tube architecture, as well as microenvironment.² Several associated risk factors are identified, such as endometrial damage after curettage or chronic endometritis, history of cesarean section, leiomyoma, intrauterine device (IUD), in vitro fertilization, and primary embryonic disorder.¹⁰ The most common complaints are vaginal bleeding (91%) and inguinal pain (28%).¹¹ Paalman and McElin (1959) first presented clinical diagnosis criteria as follows: (1) amenorrhoea followed by painless vaginal bleeding, (2) cervical distension, may be of the same size or greater than corpus, (3) Palpable conception product and/or firmly attached to the endocervix, (4) closed IOU, and (5) partially opened external ostium.⁸ Ultrasound and MRI have become the diagnostic method of choice in cervical pregnancy, with TVS as the principal modality.¹¹ The determination of gestational sacs location in the cervix, the depth of trophoblast invasion, and the identification of the uterine parts are important in the diagnostic process.^{12,13} MRI findings include: (1) the presence of gestational sacs filling the cervical area, (2) normal endometrial line, (3) hourglass-shaped uterus with a disproportionately enlarged cervix.¹²

The main differential diagnosis of cervical pregnancy is incomplete abortion during its endocervical phase of expulsion.^{12,13} Jurkovic et al describes two main criteria that can distinguish these two conditions: (1) Sliding sign, cervical compression with TVS probe is applied, if the gestational sac does not move, cervical pregnancy is more likely.^{14,15} and (2) peritrophoblast blood flow indicates ongoing pregnancy, which is absent incomplete abortion.¹² The diagnosis of cervical pregnancy can be established on the basis of anamnesis, physical examination, imaging studies, and histopathology of cervical biopsy.^{12,13}

Anamnesis, physical examination and proper imaging studies should be performed simultaneously at the onset of the patient's arrival so that errors in the diagnosis do not occur. In this patient, cervical carcinoma was suspected due to cervical appearance that was similar to malignant cervical tumor. Her history and physical examination were not supportive of malignancy. Increased β -hCG level was also noted, although it is not very significant in the determination of cervical pregnancy, but it should warrant investigators about the possibility of cervical pregnancy, which we failed to recognize. TVS and MRI were performed only afterward. Sliding test and colour Doppler on the cervix were not done. Area of implantation was determined using MRI.

In the past, more than 70% of cases of cervical pregnancy ended in hysterectomy. With the development of imaging studies, early diagnosis is possible, resulting in a more conservative shift in management to maintain uterus and fertility. Cervical pregnancy management can be divided into conservative and surgical measures, including: tamponade with Foley catheter, reduction of blood flow (ligation or embolization), intra-amniotic foeticidal injection (methotrexate, potassium chloride), systemic chemotherapy, and surgical evacuation or resection (curettage or hysterectomy).¹

More aggressive treatment should be done in patients with unstable hemodynamic state to control bleeding, such as hysterectomy, uterine artery embolization, cervical artery ligation, or dilatation and curettage followed with Foley catheter tamponade. Chemotherapy injection with serum β -hCG level monitoring was chosen for this patient considering her stable condition and desire to retain fertility. Generally, MTX administration can be given after initial diagnosis when serum β -hCG < 34,000 mIU/mL. Due to delay in diagnosis, our patient received late chemotherapy. In subsequent monitoring, serum β -hCG levels after chemotherapy immediately returned to normal which is a sign of pregnancy resolution. TVS and MRI studies had proven disappearance of conception mass in the uterine cervix and uterus returning to normal.

The return of menstruation and the ability to conceive are favourable fertility outcomes. In a study conducted by Svirsky et al (2008) of 314 women who received MTX therapy for ectopic pregnancy, pregnancies were achieved within 6 months after the last MTX chemotherapy. And it is recommended that women who receive MTX chemotherapy to delay their pregnancy at least after three normal menstrual cycles. The number of poor pregnancy outcomes such as congenital abnormalities in infants and miscarriages are low if pregnancy occurs after 6 months after MTX administration. Even though data is still lacking to support that, it is recommended that pregnancy that occurs less than 3 months after chemotherapy should be terminated.¹⁶ After proper counselling, combined oral contraceptive was chosen to delay pregnancy.

CONCLUSION

Early diagnosis determines the success of patient management and prognosis. The lack of experience of the examiner becomes a major obstacle in diagnosing and in the provision of therapy; thus, standard operational procedures is appropriate in every centres. There is also a need for more in-depth study on cervical pregnancy as it is one of the rarest ectopic pregnancy. Accurate history taking and physical examination are key modalities in the diagnosis, supported by histopathology examination, TVS ultrasound and MRI.

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