Cervical ectopic pregnancy. A case series and literature review

Embarazo ectópico cervical: serie de casos y revisión de la literatura

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ABSTRACT

Objective: To describe a case series of nine patients diagnosed with cervical ectopic pregnancy. Design: Descriptive retrospective study of the clinical records of nine consecutive cases of women diagnosed with cervical pregnancy attended at the Instituto Nacional de Perinatología, Mexico City. Results: 448 ectopic pregnancies were attended from January 2011 through June 2018. They represented 2.2% of all pregnancies during the period studied. Of these, nine were cervical pregnancies (2% of all ectopic pregnancies). Five of these patients were admitted because of vaginal bleeding. All nine patients were diagnosed with cervical pregnancy by ultrasonography. Eight patients were initially offered pharmacological treatment with resolution of the ectopic pregnancy confirmed by hCG in two patients. Six patients required surgical intervention, and fertility was preserved in five cases. Conclusions: Cervical ectopic pregnancy is a risk factor for extreme maternal morbidity. It can present as an unexpected massive hemorrhage that commonly leads to hysterectomy and even death. Nowadays, there is no universal algorithm for treatment as it is performed in a regional and non-standardized manner, and in many cases, fertility preservation is not contemplated. Prospective studies are needed to issue recommendations on the management of these patients. Key words: Pregnancy, ectopic.

RESUMEN

Objetivo. Describir una serie de casos de nueve pacientes con diagnóstico de embarazo ectópico cervical atendidas. Metodología. Estudio retrospectivo descriptivo, con revisión del expediente clínico de nueve casos consecutivos de mujeres con diagnóstico de embarazo ectópico cervical entre enero 2011 y junio 2018, en el Instituto Nacional de Perinatología de Ciudad de México. Resultados. Se halló un total de 448 embarazos ectópicos, que representaron 2.2% del total de embarazos, de los cuales, 9 (2% de los ectópicos) resultaron cervicales. Clínicamente, 5 pacientes presentaron sangrado transvaginal, 3 cursaron con dolor cólico y 2 estuvieron asintomáticas. La edad gestacional promedio fue 7,5 semanas. El diagnóstico de embarazo cervical fue mediante ultrasonografía de segunda dimensión. Con respecto al tratamiento, a 8 de las 9 pacientes se les ofreció inicialmente tratamiento farmacológico; solamente dos de las pacientes mostraron resolución de la hCG (gonadotropina coriónica humana) con la terapia farmacológica; el resto requirió alguna intervención quirúrgica. Se logró tratamiento preservador de la fertilidad en 5 pacientes. Conclusiones. El embarazo ectópico cervical es un factor de riesgo de morbilidad materna extrema. Puede presentarse con hemorragia masiva inesperada, que comúnmente conduce a la hysterectomía e incluso a la muerte. Actualmente no existe un algoritmo universal de tratamiento; se realiza de forma regional y no estandarizada y, en muchos casos, no se contempla la preservación de la fertilidad. Se requiere estudios prospectivos para poder emitir una recomendación sobre el manejo de este grupo de pacientes. Palabras clave. Embarazo, cervical, ectópico, Fertilidad.

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BACKGROUND

Cervical pregnancy results from the implantation of the blastocyst in the endocervix, below the internal cervical orifice. Less than 1% of ectopic pregnancies are implanted in the cervical canal(1).

There are predisposing factors such as cervical manipulations (instrumented uterine curettage, manual endouterine aspiration). Risk is specially increased in patients with in vitro fertilization, with prevalence of 0.1% of all pregnancies achieved through this reproduction technique(2,3). While the etiology of this implantation is still uncertain, it is attributed to the underlying factors mentioned, as endometrial manipulation would damage the decidua basalis, promoting implantation and growth of the trophoblast in the cervical myometrium. The low incidence of this type of pregnancy has not allowed to correlate pathology with physiopathological causes(3,4).

Clinically, it tends to simulate a threatened miscarriage. It presents with transvaginal bleeding after a cycle of amenorrhea and only one third of the patients experience pelvic pain(5). In advanced pregnancies, it can be accompanied by abdominal pain(6).

In 1959, Paalman and McElin established diagnostic criteria for cervical pregnancy that remain valid today: 1) uterine bleeding after a period of amenorrhea and only one third of the patients experience pelvic pain(5). In advanced pregnancies, it can be accompanied by abdominal pain(6).

With transvaginal ultrasound, especially three-dimensional ultrasound and sometimes two-dimensional ultrasound, this type of implantation is easily identifiable. It shows an empty uterus and a gestational sac in the isthmic-cervical area invading the anterior and posterior wall of the cervix. Doppler color scan can be used to identify peri-trophoblastic blood flow. If diagnosis cannot be performed with ultrasound, nuclear magnetic resonance could be required(3). Histologically, trophoblastic tissue erodes through the endocervix and the conceptus grows in the fibrous wall of the cervix; a hemorrhagic mass surrounds the trophoblastic structures(8,9).

This disease is associated with high rates of morbidity and mortality, with risk of secondary hemorrhage from erosion of the cervical blood vessels that may require hysterectomy. Therapeutic options can be divided into 5 categories: compression with Foley catheter, reduction of blood flow, surgical resection of the trophoblast, intraamniotic feticid and systemic chemotherapy(7). Viable options for hemorrhage control include curettage, Foley catheter compression, local prostaglandins, cerclage, ligation of hypogastric or uterine arteries, and hysterectomy(10).

METHODS

This is a descriptive retrospective study of nine consecutive cases of women with diagnosis of first-trimester cervical ectopic pregnancy attended from 2011 to 2018 at the Instituto Nacional de Perinatología (INPer), a third level reference center from Mexico City. The project was approved by the institutional review board.

RESULTS

A total of 448 ectopic pregnancies were attended from January 2011 through June 2018, representing 2.2% of all pregnancies during this period of study; 9 were cervical pregnancies (2% of the ectopic pregnancies).

Patient’s general characteristics are presented in Table 1. Most of the 9 patients had risk factors consisting in previous cesarean section (3), in vitro fertilization (3), former diagnosis of uterine leiomyomatosis (3), uterine curettage (2), and cone biopsy secondary to human papilloma virus infection (2). As individual factors, a cervical polyp was found in one patient. Only one patient did not have an apparent risk factor (Table 2).

On admission, 5 patients presented vaginal bleeding, 3 manifested colic type pain, and 2 were asymptomatic. The average gestational age was 7.5 weeks. Diagnosis of cervical pregnancy was by two-dimensional ultrasonography.

Eight of the 9 patients were initially offered pharmacological treatment, in 4 cases methotrexate (MTX) as first line drug, either intramuscular, intravenous, and/or intrasaccular. Patients received pharmacological treatment for 9 days average, usually through more than one route, and remained hospitalized for 13 days. One patient...
was treated with one dose of mifepristone 200 mg, and two more received combined treatment, either with methotrexate and mifepristone or methotrexate and misoprostol. Only two of the patients showed hCG resolution and the rest required some surgical intervention (Table 3).

Concerning the surgical interventions, 6 were indicated due to failure of the pharmacological treatment and 1 was performed on arrival due to hemorrhage and hemodynamic instability. Three patients required hysterectomy (two abdominal and one laparoscopic) (Table 4), and conservative treatment was achieved in 5 patients using different approaches (Table 5).

**Discussion**

Ally Murji et al. performed a retrospective study of cervical pregnancies diagnosed between January 2002 and July 2014 in a third-level center in Canada, with the objective of evaluating the safety and effectiveness of conservative management with methotrexate. Less frequent interventions were uterine arteries embolization, cervical arteries ligation, dilation and curettage with or without vasopressin, and tamponade with Foley catheter. Of the 27 cervical pregnancies included, all approaches were successful.
In a retrospective study, Donald L et al. reviewed 13 consecutive cervical pregnancies from 1995 to 2014 at the University of South Carolina. All cases were treated surgically with the same technique: the cervical stroma was injected in a circumferential way (around the cervical pregnancy) with 20 mL of diluted vasopressin in 50 mL of saline solution; this was followed by placement of a cervical suture as prophylactic McDonald technique (without tying the sutures), curettage of the trophoblast through suction, and a compression balloon was immediately placed in the cervical canal (Foley catheter) with 30 mL of saline solution, leaving the tamponade for 24 hours before slowly deflating it. Of the 13 patients studied, none presented hemorrhage after the procedure. Furthermore, the cerclage sutures never required tying, but rather stayed in place until after the curettage, and were removed following aspiration and placement of the tamponade(1).

Among the limitations of the study that could influence the results, it is retrospective in nature and with a reduced number of patients. This is a hypothesis generator study, prospective type, as well as multicenter. Further studies will be required to achieve an adequate number of patients to identify the best treatment scheme.

**References**


