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SINGLE DOSE METHOTREXATE TREATMENT OF INTERTITIAL PREGNANCY: CASE REPORT

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Abstract: *We present a case of an interstitial ectopic pregnancy managed with a single dose of methotrexate. A 40-year-old woman with a history of a right salpingectomy was diagnosed with a left interstitial pregnancy based on ultrasound findings and B-hCG value of 9,438 IU/ml. Early diagnosis of interstitial pregnancy and hemodynamic stability allowed conservative treatment consideration with a longer and close follow-up without affecting the fertility.*

Keywords: Interstitial pregnancy, Single methotrexate dose, Conservative management

INTRODUCTION

An ectopic pregnancy occurs when the embryo implants outside the uterine cavity. In approximately 4% of ectopic pregnancies, this implantation can occur in the cornua between the proximal part of the fallopian tube and the uterus [1,2]. Its mortality rate is 6-7 times higher than all ectopic pregnancy types. This is attributed the zone of implantation expanding and subsequently rupturing at a later gestational age, leading to severe hemodynamic compromise [3].
Cornual resection stands as the preferred treatment method, although alternative approaches, more conservative, have also been documented [4,5]. We report in our case a successful non-surgical management with intramuscular methotrexate administration.

CASE REPORT

A 40-year-old gravida 2 (G2) para 0 (P0) at seven weeks, presented to the emergency department with abdominal pain and vaginal bleeding. She was hemodynamically stable. Her medical history was significant for a previous ruptured ectopic pregnancy treated surgically by right salpingectomy and known for history of chlamydial salpingitis.
Her serum beta-human chorionic gonadotropin (B-hCG) level was 9,438 IU/ml. Transvaginal ultrasound (US) revealed a gestational sac at the left fundal uterine wall consistent with an interstitial ectopic pregnancy (Figure1,2). No free pelvic fluid was mentioned.
The initial complete blood count was normal. The patient had stable vital signs. Methotrexate was highly recommended and is typically successful and serves as a fertility-preserving option for managing unruptured interstitial pregnancies[6]. Alternative treatment was provided including the laparoscopic surgery and its potential impact on her fertility. The patient opted for a conservative approach. She had no contraindications for MTX.
A single intramuscular dose of methotrexate (MTX) 100mg total was administrated. On the 4th day after MTX , serum B-hCG level was 6,809 IU/ml. On the 7th day serum B-hCG level was 3,000 IU/ml. The patient underwent frequent monitoring with US and B-hCG blood tests every four days observing a decreasing trend until it dropped below 4 IU/ml with an empty uterus.

Figure 1: Left interstitial pregnancy with no visible embryo: ultrasound appearance(2D)

Figure 2: Left intertitial pregnancy with no visible embryo: ultrasound appearance(3D)

DISCUSSION

Interstitial ectopic pregnancy is a rare form of ectopic pregnancies. Its increasing incidence is linked to predisposing factors include, but are not limited to, fallopian tube inflammation (salpingitis), prior tubal surgery, prior ectopic pregnancy, assisted reproductive technologies, smoking, and advanced age [7,8,9,10,11].

Methotrexate stands as the primary conservative treatment for managing early ectopic pregnancies with a success rate of 91% and up to 66.7% in interstitial pregnancies [1,12,13]. Women wishing to maintain their fertility may contemplate systemic MTX or intralesional and or local MTX [1,14].
MTX impacts rapidly proliferating tissues, making it contraindicated in conditions such as chronic liver disease, blood dyscrasias, pulmonary disease, gastric ulcers, and immunodeficiency. Masses larger than 3.5 cm in diameter and B-hCG levels ranging from 6,000 to 15,000 mIU/mL in unruptured cases serve as relative contraindications. Physicians should carefully evaluate the risks and benefits before prescribing MTX to these patients [15]. Fetal cardiac activity presents a relative contraindication for MTX administration. Nevertheless, when combined with KCL injection, this approach seems to be safe and effective [16]. A retrospective study involving hemodynamically stable patients with interstitial pregnancy demonstrated the effectiveness of direct MTX injection into the gestational sac under ultrasound guidance as an effective alternative to surgery [17].

The selection of treatment primarily relies on the patient's clinical status, hemodynamic stability, and the fertility desire [18]. Unstable patients with hemoperitoneum necessitates an immediate laparotomy with cornual resection. With the major risk of hysterectomy in cases of hemodynamic instability or when patients encounter technical challenges regarding cornual repair [19]. The major complication of a cornual resection is uterine rupture in subsequent intrauterine pregnancies. Therefore, these patients should receive diligent antenatal follow-up [20].

CONCLUSION

A conservative therapeutic strategy, as outlined here, could be contemplated with vigilant monitoring for hemodynamically stable patients wishing to preserve future fertility, reserving surgical intervention only for instances of treatment failure. Our work has been reported in line with the SCARE Guidelines 2020 criteria [21].

CONSENT

A consent was obtained from the patients to publish these case reports and accompanying images.

ETHICAL APPROVAL

Ethical approval is not applicable. The case reports are not containing any personal information.

CONFLICT OF INTEREST STATMENT

The authors declare that they have no competing interests relevant to the content of this article.

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