

■ Case Report

Organ-Preserving Methotrexate Treatment in Recurrent Ectopic Pregnancy: A Case Report

Tekrarlayan Ektopik Gebelik Olgusunda Organ Koruyucu Metotreksat Tedavisi: Vaka Sunumu

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Abstract

Objective: To assess the significance of diagnosis, treatment, and management approaches in cases of recurrent ectopic pregnancies.

Material and Method: This study presents the management of a 31-year-old woman with a history of left tubal pregnancy and subsequent left salpingectomy, who presented with a right tubal ectopic pregnancy. Methotrexate (MTX) treatment was initiated due to the absence of contraindications. On the first day of MTX, the patient's serum β hCG level was 5135.64 U/L, but it continued to rise. Subsequently, the patient received a second dose of MTX. On the fourth day of the second MTX dose, the serum β hCG level was 8333.98 U/L, while on the fifth day of the second MTX dose, the β hCG level dropped dramatically to 6819.35 U/L. Twenty-two days after the second dose of MTX treatment, the serum β hCG level was 848.76 U/L. Transvaginal ultrasound revealed a decrease in the ectopic mass.

Conclusion: Early diagnosis of tubal ectopic pregnancies can be effectively managed through medical intervention, demonstrating a high success rate.

Keywords: ectopic pregnancies; recurrence; medical treatment; success rate

Öz

Amaç: Tekrarlayan ektopik gebelik olgularında tanı, tedavi ve yönetim yaklaşımlarının önemini değerlendirmek.

Gereç ve Yöntem: Bu çalışmada, sol tubal ektopik gebelik ve ardından sol salpenjektomi öyküsü olan ve sağ tubal ektopik gebelik nedeni ile başvuran 31 yaşında bir kadının yönetimi sunulmaktadır. Kontraendikasyon olmaması nedeni ile metotreksat (MTX) tedavisi başlandı. MTX'in ilk gününde hastanın serum β hCG düzeyi 5135,64 U/L idi ancak yükselmeye devam etti. Daha sonra hastaya ikinci doz MTX uygulandı. İkinci MTX dozunun dördüncü gününde serum β hCG düzeyi 8333,98 U/L iken ikinci MTX dozunun beşinci gününde β hCG düzeyi dramatik bir şekilde 6819,35 U/L'ye düştü. İkinci doz MTX tedavisinden 22 gün sonra serum β hCG düzeyi 848.76 U/L idi. Transvajinal ultrasonda ektopik kitlede azalma görüldü.

Sonuç: Tubal ektopik gebeliklerin erken tanısı tıbbi müdahale yoluyla başarılı bir şekilde yönetilebilir ve bu da yüksek başarı oranı gösterir.

Anahtar Kelimeler: tubal ektopik gebelikler; nüks; medikal tedavi; başarı oranı



1. Introduction

An ectopic pregnancy (EP) is the implantation of a developing embryo/fertilized ovum in a location other than the endometrium in the uterine cavity. The incidence of ectopic pregnancies is reported to be 0.25%-2% (1). Tubal pregnancies are the most common form of EP and have a high maternal mortality and morbidity when they rupture (2). A woman with an ectopic pregnancy may present to hospital with non-specific symptoms such as lower abdominal pain and vaginal bleeding. These symptoms often resemble non-gynecologic conditions such as appendicitis, urinary tract stones or gynecologic conditions such as early pregnancy loss, ovarian torsion or pelvic inflammatory disease (3). In half of the women diagnosed with EP, there are no identified risk factors. However, a history of ectopic pregnancy carries a 10% risk of subsequent pregnancies, and previous tubal pathology/surgery is also considered a risk factor for EP (3,4). To diagnose EP, the patient’s medical history is combined with serial β hCG levels, consecutive ultrasound examinations and sometimes uterine aspiration to arrive at a definitive diagnosis of EP (3). Currently, surgical, drug and pregnancy-related treatment options are available to women with EP, with MTX being the mainstay of drug management for EP (5). In this case report, we present our organ-preserving MTX treatment approach in a patient who had previously undergone salpingectomy for a left tubal ectopic pregnancy.

2. Case Report

A 31-year-old female patient (gravida 3, parity 0, abortion 1, ectopic pregnancy 1) was admitted to the early pregnancy service of our hospital with a preliminary diagnosis of ectopic pregnancy after no gestational sac was seen in the uterine cavity during routine pregnancy control. Written and verbal

consent was obtained from the patient and her family for this case report. Her medical history revealed a previous single dose of MTX treatment for a left tubal ectopic pregnancy, followed by left salpingectomy. The patient also disclosed a history of allergic asthma. Otherwise, her medical history was unremarkable, and she was a non-smoker. Upon admission, the patient was diagnosed with a pregnancy of 7 weeks and 2 days gestation based on her last menstrual period. She presented in good general condition with stable vital signs and was cooperative during examination. Physical examination revealed no abdominal tenderness or vaginal bleeding. Her serum β hCG level on admission was 5134.64 U/L, with other blood parameters within normal limits. Transvaginal ultrasonography (TVUS) was performed during the night shift and revealed an area consistent with ectopic pregnancy in the right adnexal area of the uterus, along with a ring-of-fire image around the periphery of the uterus measuring 16 mm and a 5.5 cm gestational yolk sac. The patient underwent probe curettage without complications. Radiologic ultrasound imaging was performed the next day after the procedure with a serum β hCG level of 5649.57 U/L. Transabdominal and transvaginal imaging showed an oval formation with thick echogenic walls adjacent to the ovary in the right adnexal lobe with an 8x6 mm cystic area in the center. The patient was administered 100 mg of methotrexate (MTX) intramuscularly. On the 1st day of MTX treatment, serum β hCG level was 5649.57 U/L. On the 4th day after the first dose of MTX, the serum β hCG level was 7744.31 U/L and it was decided to administer the 2nd dose of MTX. On the 4th day after the 2nd dose of MTX, the serum β hCG level was 8333.98 U/L. The patient and her relatives were informed about surgical treatment methods, and it was decided to continue clinical and imaging follow-up

Table 1. Results of liver function tests measured during the treatment period

	AST (0-32 U/L)	ALT (0-33 U/L)	ALP (35-104 U/L)	LDH (0-247 U/L)	GGT (0-38 U/L)	T.Bilirubin (0.3-1.2 MG/DL)	PT (10-14 S)	INR (0.80-1.2)	aPTT (21.6-32 s)	Fibrinogen (180-400 MG/DL)
Initial admission	33.0	21.0	62.0	157.0	-	-	124	1.06	26	358.01
4th day after the 2nd dose of MTX	77.0	67.0	66.0	208.0	-	-	12.3	1.01	26.3	406.08
5th day after the 2nd dose of MTX	63	58	-	-	14.0	-	11.8	1.01	26.3	406.8
6th day after the 2nd dose of MTX	68	59	58	270	-	0.7	-	-	-	-
7th day after the 2nd dose of MTX	72	64	-	-	-	1.3	-	-	-	-
20th day after the 2nd dose of MTX	29	20	85	157	-	-	11.4	0.97	26.2	350.45

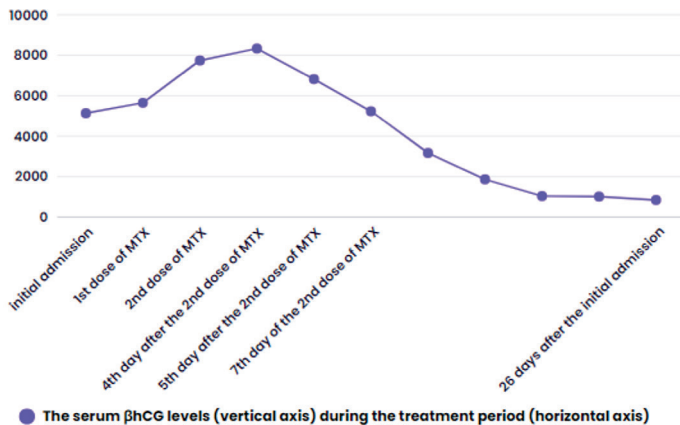


Figure 1. The serum β hCG levels during the treatment period

along with serum β hCG level monitoring. On the 5th day after the 2nd dose of MTX, the patient’s serum β hCG level decreased dramatically to 6819.35 U/L. The patient with nosebleeds was consulted to internal medicine for evaluation of liver toxicity after MTX treatment and im vitamin K was administered according to the recommendations. Liver function tests showed an increase and the patient was advised by internal medicine to repeat the test and to start ursodeoxycholic acid treatment if the increase continued (Table 1). The next day, nosebleeds recurred and vitamin K treatment was repeated in consultation with internal medicine. On the 7th day of the 2nd dose of MTX treatment, the serum β hCG level measured on the 7th day was 5230.4 U/L and the patient was discharged the next day upon her own request and in accordance with the recommendations of internal medicine. There was no change in the physical examination of the patient during the process, she had vaginal bleeding in the form of spotting from time to time and she reported abdominal pain during defecation twice. After discharge, the patient had groin pain and was admitted to the ward twice as a precautionary measure, but discharge was repeated after a satisfactory decrease in serum β hCG levels (Figure 1). The serum β hCG level measured 26 days after the initial admission was 848.76 U/L.

3. Discussion

Tubal EP is the most common form of EP and clinicians have the important task of diagnosing and treating this condition before the ectopic mass ruptures and threatens the patient’s life. EP should be considered in any pregnant woman with vaginal bleeding or lower abdominal pain when an intrauterine pregnancy has not yet been established (3,6). The diagnosis of EP is usually based on ultrasound findings that correlate with serum β hCG levels. Once EP is diagnosed, there are three ways for treating this condition: medication, surgery or expectant

management. Intramuscular MTX is the medical treatment for non-ruptured early EPs and can be given in one or multiple doses. Although systemic MTX has more side effects than other treatments, clinicians may prefer MTX in patients who are hemodynamically stable and have no contraindications. Before administering methotrexate, β -hCG levels should be measured on days 1, 4, and 7 of treatment. The first measurement helps the clinician decide between the one- and two-dose protocols (3). MTX success is defined as a greater than 15% decrease in β hCG levels between four and seven days after treatment with MTX (7).

A study by Lipscomb et al. reported that previous EP was associated with success of systemic MTX treatment, but the previous treatment modality (salpingostomy, salpingectomy or previous systemic MTX) was not conclusively associated with treatment failure (6).

A retrospective cohort study by Khalil et al. reported that a single dose of MTX was sufficient to terminate EP in 55.9% of patients and that EP was successfully treated in 93.8% of patients after the second dose of MTX (7).

A study by Karadeniz et al. reported that for the tubal EP cases β hCG level on admission and diameter of EP mass can predict tubal rupture (8). Another case report reported a successful multiple dose MTX treatment on unilateral twin tubal ectopic pregnancy (9). Additionally, these two studies provide examples of our hospital’s EP treatment approaches.

In this case, the patient was an ideal candidate for systemic MTX treatment as there was no contraindication and serum β hCG levels were high. One of the main reasons of choosing medical treatment in this case was patient’s history of salpingectomy and her desire to become pregnant. Although serum β hCG levels were elevated until the fifth day of the second MTX dose, the success of organ-sparing MTX treatment cannot be overlooked.

In our case report, we present our approach to organ-sparing MTX therapy in a patient who had previously undergone a left salpingectomy for an ectopic pregnancy and whose serum β hCG levels continued to rise until the fifth day of the second MTX dose. The patient and clinicians had a very harmonious and good relationship during the treatment process. The patient was informed of every step and decision regarding her treatment and was aware of all side effects. During treatment, she had epistaxis twice and abdominal pain during bowel movements twice. After the second dose of MTX, her liver enzymes were elevated for a while, but after a few days the tests were normal.



Improving the standardization of ultrasound diagnostic parameters, the validation of biomarkers and the correct choice of treatment are very important in this patient group. It is clear that further studies are needed in this area.

Author contribution

Study conception and design: RSK; data collection: RSK and ZNE; analysis and interpretation of results: RSK and ZNE; draft manuscript preparation: RSK and ZNE. All authors reviewed the results and approved the final version of the manuscript.

Ethical approval

Written and verbal consent was obtained from the patient and her family for this case report.

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Conflict of interest

The authors declare that there is no conflict of interest.

Yazar katkısı

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