

A Case Report on Management of Recurrent Ectopic Pregnancy- A Medical Success

SHYMA THONDALIL SEENI¹, VINITHA WILLS², NS SREEDEVI³

(CC) BY-NC-ND

ABSTRACT

Recurrent ectopic cases have been on the rise as there is increase in Artificial Reproductive Techniques (ART) recently. Earlier patient presentation and more precise diagnosis by proper clinical examination and with proper interpretation of serial β -human Chorionic Gonadotropin (β -hCG) allows identification of an ectopic pregnancy before ruptures and differentiates from other common conditions like infection, miscarriage, degenerating leiomyomas or pain around ligament. Various studies have been conducted over time to set a discriminatory zone for β -hCG. Initially, the cut-off for β -hCG was taken to be 1000-2000 mIU/mL. But now the cut-off has been increased to 3510 mIU/mL. Methotrexate has been used as first line drug in medical management of ectopic pregnancy for a long time. But methotrexate has been used with caution when laboratory values show a high β -hCG. Here, authors report a case of a 29-year-old female with recurrent ectopic pregnancy which was successfully managed with methotrexate therapy despite the initial high β -hCG values thus avoiding a surgical intervention.

Keywords: Methotrexate, Serum β -human chorionic gonadotropin, Tubal ectopic

CASE REPORT

A 29-year-old G3P1L1E1 presented to casualty with spotting per vaginum and mild lower abdominal pain since one day following five weeks of amenorrhoea. It was a spontaneous conception with positive pregnancy test.

On admission, her vitals were stable. Pulse rate 78 per minute, blood pressure 120/70 mmHg, oxygen saturation 98% in room air. Her abdomen was soft and no positive signs could be elicited. Ultrasonography at the time of admission showed a well-defined echogenic lesion 1.7x1.4 cm closely abutting the left ovary with peripheral ring of fire vascularity and with a central anechoic area, a dilated left fallopian tube with internal echoes and empty endometrial cavity. The β -hCG the same day was 7882 mIU/mL [Table/Fig-1,2].

Her previous obstetric history included a caesarean section for meconium stained amniotic fluid six years back and an emergency right salpingectomy two years back for a right ruptured tubal ectopic at ampullary region where she presented in shock.



[Table/Fig-1]: Well-defined echogenic lesion abutting the left ovary and a central anechoic area, a dilated left fallopian tube with internal echoes.



[Table/Fig-2]: Empty endometrial cavity.

She had no history of intrauterine device use or recurrent pelvic infection. As patient was haemodynamically stable, keeping future fertility in mind and history of previous right salpingectomy, medical management of ectopic was opted. In view of high β -hCG values multidose regimen of methotrexate was opted. Patient was treated with Inj. methotrexate 1 mg/kg body weight was given on Day 1, D3, D5, and D7. Folic acid rescue was given on D2, D4, D6, and D8. Her β -hCG was checked on D1, D3, D5, D7, and D11. As there was a falling trend in β -hCG values she was discharged on D13 and was asked to review with β -hCG value on D17. Her β -hCG values were dropped further in subsequent outpatient visits for five weeks. The values of β -hCG in the subsequent visits are illustrated in [Table/Fig-3].

DISCUSSION

Proper identification of risk factors in an ectopic pregnancy will help to prevent recurrence to a great extent. Pelvic infections, previous

Time	β -hCG (mIU/mL)	% fall in β -hCG
Day 1	7882	-
Day 3	12256	↑
Day 5	14961	↑
Day 7	13445	10.1% ↓
Day 9	13036	Plateau
Day 11	7992	38.6% ↓
Day 13	5578	30.2% ↓
Day 17	2238	59.8% ↓
3 rd week	634	-
5 th week	<4	-

[Table/Fig-3]: Serial β -hCG values.

↑: Increase; ↓: decrease

tubal surgery, infertility are common risk factors for an ectopic pregnancy [1]. In this case, her risk factor was that she had one previous history of ruptured ectopic which was surgically managed by right salpingectomy. Recurrence rate in a patient with previous salpingectomy is 10% [2]. Here an initial β -hCG value of 7882 mIU/mL with a left adnexal lesion and an empty uterine cavity in the ultrasonograph report confirmed the diagnosis of an ectopic pregnancy. Baseline β -hCG and increment were predictors of successful treatment in previous studies on first ectopic pregnancy but on the contrary treatment success rate of recurrent ectopic pregnancy has not been observed to be associated with β -hCG values [3]. Treatment must be individualised to patients. Methotrexate multidose regimen was opted for this patient taking into account her haemodynamic stability, her age, desire for future fertility, absence of cardiac activity in ultrasonogram despite very high initial β -hCG values. It has even been recommended in certain studies that an obstetrician should no longer rely on discriminatory zone due to its high variability to exclude the diagnosis of an ectopic pregnancy [4].

Methotrexate, a folate antagonist inhibits DNA synthesis, repair and replication- is effective in treatment of recurrent ectopic pregnancy. In some of the cases, there will be an initial rise in β -hCG on 4th day after methotrexate injection. This is not due to persistence trophoblastic tissue and failure of β -hCG value to decrease by atleast 15% from day 4 to day 7 is associated with risk of treatment failure [5].

There have been no established protocols that mention the cut-off β -hCG for initiating methotrexate treatment so far. American Society of Reproductive Medicine (ASRM) 2013 guidelines have mentioned serum β -hCG values >5000 mIU/mL as a relative contraindication

[2]. Previous studies have observed a lower success rate of methotrexate treatment with higher β -hCG values [6,7]. In contrary to above studies, Safdarian L et al., has concluded that high β -hCG level more than 12,000 is not a contraindication for methotrexate therapy and can be successfully managed [8] provided adequate counseling regarding prolonged hospital stay, chance of failure of medical management, probable need for a surgery in the event of a rupture has been explained to the patient. Dadhwal V et al., has reported a case of live ectopic with β -hCG levels 89,200 mIU/mL which was successfully managed with methotrexate and intrasac potassium chloride injection [9]. A recurrent ectopic pregnancy was considered to be only an independent factor associated with outcome of the treatment [3].

CONCLUSION(S)

A proper evaluation and structured approach here helped to prevent a repeat laparotomy which would have resulted in loss of both tubes. β -hCG levels should not be a deterrent in initiating medical therapy in ectopic pregnancy. Proper patient and relative counselling regarding all the aspects of disease and management must be carried out.

REFERENCES

- [1] Petrini A, Spandorfer S. Recurrent ectopic pregnancy: Current perspectives. *International Journal of Women's Health*. 2020;12:597.
- [2] Practice Committee of the American Society for Reproductive Medicine. Medical treatment of ectopic pregnancy: A committee opinion. *Fertility and Sterility*. 2013;100(3):638-44.
- [3] Levin G, Dior UP, Shushan A, Gilad R, Benschushan A, Rottenstreich A. Success rate of methotrexate treatment for recurrent vs. primary ectopic pregnancy: A case-control study. *J Obstet Gynaecol*. 2020;40(4):507-11.
- [4] Peryman S, Sim J, Wallis K, Scadeng M. Reassessing the role of the human chorionic gonadotropin (hCG) discriminatory zone in the evaluation of patients with a pregnancy of unknown location. *Ultrasound in Medicine & Biology*. 2019;45:S113-14.
- [5] American College of Obstetricians and Gynecologists. ACOG Practice Bulletin No. 193: Tubal ectopic pregnancy. *Obstetrics and Gynecology*. 2018;131(3):e91-103.
- [6] Menon S, Collins J, Barnhart KT. Establishing a human chorionic gonadotropin cutoff to guide methotrexate treatment of ectopic pregnancy: A systematic review. *Fertility and Sterility*. 2007;87(3):481-84.
- [7] Bachman EA, Barnhart K. Medical management of ectopic pregnancy: A comparison of regimens. *Clinical Obstetrics and Gynecology*. 2012;55(2):440.
- [8] Safdarian L, Mossayebi E, Bادهنوosh B. Medical management of ectopic pregnancy with high hCG levels: A case series. *Middle East Fertility Society Journal*. 2008;13(1):57-58.
- [9] Dadhwal V, Deka D, Ghosh B, Mittal S. Successful management of live ectopic pregnancy with high β -hCG titres by ultrasound-guided potassium chloride injection and systemic methotrexate. *Archives of Gynecology and Obstetrics*. 2009;280(5):799-801.

PARTICULARS OF CONTRIBUTORS:

1. Junior Resident, Department of Obstetrics and Gynaecology, Pushpagiri Institute of Medical Sciences, Thiruvalla, Kerala, India.
2. Professor, Department of Obstetrics and Gynaecology, Pushpagiri Institute of Medical Sciences, Thiruvalla, Kerala, India.
3. Professor and Head, Department of Obstetrics and Gynaecology, Pushpagiri Institute of Medical Sciences, Thiruvalla, Kerala, India.

NAME, ADDRESS, E-MAIL ID OF THE CORRESPONDING AUTHOR:

Shyma Thondalil Seeni,
Junior Resident, Department of Obstetrics and Gynaecology, Pushpagiri Institute of Medical Sciences, Thiruvalla, Kerala, India.
E-mail: reach2shyma@gmail.com

AUTHOR DECLARATION:

- Financial or Other Competing Interests: None
- Was informed consent obtained from the subjects involved in the study? Yes
- For any images presented appropriate consent has been obtained from the subjects. Yes

PLAGIARISM CHECKING METHODS: [Jain H et al.]

- Plagiarism X-checker: Oct 23, 2021
- Manual Googling: Feb 17, 2022
- iThenticate Software: Feb 21, 2022 (1%)

ETYMOLOGY: Author Origin

Date of Submission: Oct 22, 2021
Date of Peer Review: Jan 18, 2022
Date of Acceptance: Feb 18, 2022
Date of Publishing: Apr 01, 2022