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Case Report

Successful term vaginal delivery following remission from ultra-high-risk metastatic choriocarcinoma: a rare case of preserved fertility and favourable obstetric outcome

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ABSTRACT

Metastatic choriocarcinoma represents one of the most aggressive forms of gestational trophoblastic neoplasia (GTN), particularly when associated with distant spread such as pulmonary and central nervous system involvement. Advances in multi-agent chemotherapy have significantly improved survival; however, data regarding fertility and pregnancy outcomes following treatment for ultra-high-risk disease remain limited. We report a young woman diagnosed with metastatic choriocarcinoma following a medical termination of pregnancy, who achieved complete remission after EP/EMA chemotherapy and subsequently conceived spontaneously. Serial β-hCG levels showed a rapid decline from 443,096 IU/l to normal values, confirming treatment response. The interval between completion of chemotherapy and conception was approximately two years. Her antenatal course was clinically stable. She presented in labour at term and progressed to vaginal delivery despite meconium-stained liquor, with reassuring fetal status throughout. Both mother and neonate had an uncomplicated postpartum course. This case highlights the possibility of preserved reproductive function and favourable obstetric outcomes even after treatment for ultra-high-risk metastatic GTN.

Keywords: Choriocarcinoma, Gestational trophoblastic neoplasia, Metastatic GTN, EP/EMA, Pregnancy after GTN, Vaginal delivery

INTRODUCTION

Gestational trophoblastic neoplasia encompasses a spectrum of malignant disorders arising from placental trophoblastic tissue, with choriocarcinoma representing the most aggressive subtype. It is characterised by rapid hematogenous dissemination, most commonly to the lungs and central nervous system.[1] Patients with multiple metastases and markedly elevated β-human chorionic gonadotropin (β-hCG) levels are categorised as ultra-high-risk according to the FIGO staging and risk scoring system.[2,8]

The introduction of multi-agent chemotherapy regimens, particularly EP/EMA, has significantly improved survival even in metastatic disease.[2,3] Despite these advances, concerns remain regarding long-term reproductive function because of the potential gonadotoxic effects of chemotherapy.[4,10]

Although successful pregnancies have been reported following treatment for GTN, data specifically addressing outcomes after ultra-high-risk metastatic disease remain limited.[5] We described a patient who achieved spontaneous conception and successful term vaginal delivery following remission from metastatic choriocarcinoma.

CASE REPORT

The patient conceived at 18 years of age and underwent a first-trimester medical termination of pregnancy. Following the procedure, she experienced intermittent vaginal bleeding after approximately eight months. Due to

persistent symptoms, an ultrasound examination was performed, which raised suspicion of gestational trophoblastic disease (Figure 1).

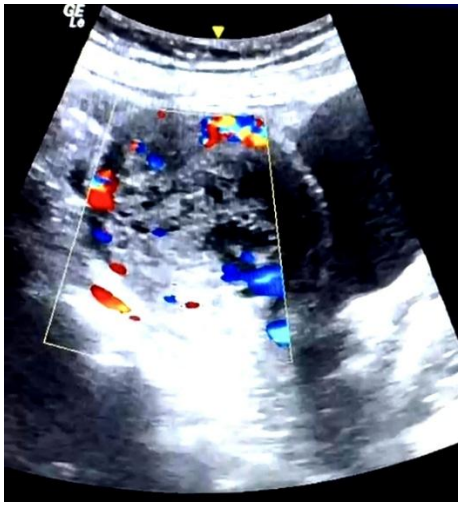

Figure 1: Post abortal transabdominal ultrasound with color Doppler showing heterogeneous intrauterine lesion with increased vascularity, suggestive of gestational trophoblastic neoplasia.

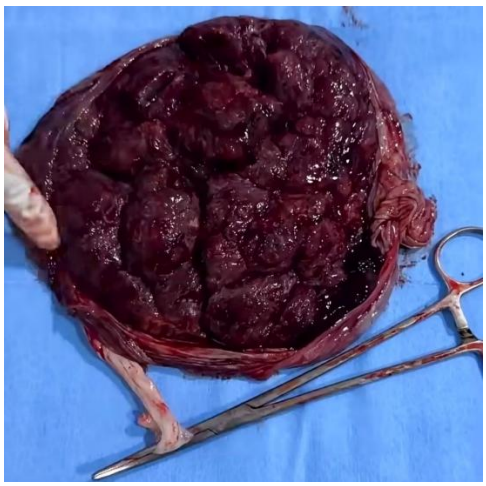

Figure 2: Gross photograph of the delivered term placenta showing no macroscopic abnormalities.

Further evaluation revealed a markedly elevated serum β-hCG level of 443,096 IU/l at presentation. Imaging demonstrated multiple pulmonary nodules along with a with a lytic calvarial lesion with dural extension involving the brain, suggestive of metastatic involvement.

Based on clinical, biochemical, and radiological findings, a diagnosis of metastatic choriocarcinoma was made. The FIGO prognostic score was calculated to be 14, based on a β-hCG level >100,000 IU/l (score 4), cranial metastasis suggestive of central nervous system involvement (score 4), antecedent pregnancy-abortion (score 1), and interval of 8 months from the index pregnancy (score 2), largest tumor mass-6 cm (score 2), number of metastases- 2 (Score 1), a diagnosis of FIGO stage IV metastatic choriocarcinoma was established, placing her in the ultra-high-risk category.[2]

The patient was initiated on multi-agent EP/EMA chemotherapy, administered in alternating cycles. Serial β-hCG monitoring demonstrated a rapid and sustained decline in tumour marker levels, reflecting an excellent therapeutic response: 443,096 IU/l at baseline; 243,587 IU/l; 10,887 IU/l; 896 IU/l.

With continued therapy, β-hCG levels normalized, confirming complete biochemical remission.

She completed multiple cycles of EP/EMA, including consolidation therapy after normalization of β-hCG levels, in accordance with standard treatment protocols.[3] Treatment was well tolerated, with manageable adverse effects such as fatigue, nausea, and alopecia. Radiological reassessment demonstrated resolution of metastatic lesions, confirming complete response.

Following remission, β-hCG was monitored weekly until normalization and subsequently at monthly intervals. The patient remained under structured surveillance for over 18 months, during which β-hCG levels remained within normal limits, confirming sustained remission.[7]

The patient conceived spontaneously approximately two years after completion of chemotherapy, consistent with current recommendations to delay conception following GTN remission.[2,7]

Her antenatal course was clinically stable. Blood pressure remained within normal limits throughout pregnancy. Haemoglobin levels ranged between 9.8 and 10.7 g/dl. Thyroid, renal, and liver function tests were within normal limits.

Serial ultrasound examinations demonstrated appropriate fetal growth with normal amniotic fluid volume and reassuring Doppler findings. There were no episodes of vaginal bleeding or symptoms suggestive of recurrence.

At 38 weeks and 6 days of gestation, she presented with spontaneous onset of labour. On admission, her vital parameters were stable. Vaginal examination revealed a favourable cervix (3 cm dilatation and 1 cm effacement).

During labour, spontaneous rupture of membranes occurred with meconium-stained amniotic fluid. Continuous fetal monitoring demonstrated reassuring patterns, with normal baseline variability and no decelerations.

Labour progressed satisfactorily, and she delivered a live female infant weighing 2.26 kg by spontaneous vaginal delivery. The neonate had Apgar scores of 8 and 9 at one and five minutes, respectively, required no resuscitation, and did not require NICU admission.

Placental examination revealed features consistent with a term placenta, including perivillous fibrin deposition, chorangiosis, and focal calcification. There was no evidence of trophoblastic proliferation or molar changes (Figure 2).

The postpartum period was uncomplicated. The uterus remained well contracted, and lochia was normal. The neonate remained stable and established breastfeeding successfully. Both mother and baby were discharged in good condition on postpartum day five.

Postpartum follow-up included β-hCG testing at six weeks and monthly monitoring for six months. β-hCG levels remained within normal limits throughout the follow-up period, with no evidence of disease recurrence.

DISCUSSION

Metastatic choriocarcinoma involving pulmonary and cranial sites represents a severe form of GTN. Despite its aggressive nature, advances in chemotherapy have resulted in high cure rates.[2,3]

Fertility preservation following chemotherapy remains an important concern. The gonadotoxic effects of EP/EMA chemotherapy are primarily related to the impact of alkylating and cytotoxic agents on ovarian follicles. Etoposide and cisplatin induce DNA damage and apoptosis of rapidly dividing granulosa cells, leading to depletion of the follicular pool. Additionally, vascular compromise and stromal fibrosis may contribute to impaired ovarian reserve. However, in younger women, a larger baseline follicular reserve allows recovery of ovarian function following treatment in a significant proportion of patients.[4]

Previous studies report successful pregnancy rates of approximately 40-50% following GTN treatment, although data specific to ultra-high-risk disease remain limited.[5]

The rapid decline in β-hCG levels observed in this patient is consistent with a favourable response to EP/EMA therapy, as described in previous studies.[3]

Current guidelines recommend delaying conception for at least 12 months following remission to allow reliable interpretation of β-hCG levels and to reduce recurrence risk.[2,7] The patient adhered to this recommendation and conceived nearly two years after treatment.

Intrapartum management was guided by fetal monitoring. Despite the presence of meconium-stained liquor, reassuring cardiotocographic findings allowed safe continuation of labour. Vaginal delivery is not contraindicated in patients with prior GTN who are in remission.[1]

Placental evaluation is recommended to exclude persistent trophoblastic disease. In this case, no such evidence was identified.

This case is notable for successful pregnancy following ultra-high-risk metastatic choriocarcinoma involving both pulmonary and cranial metastases, a scenario that remains infrequently reported, particularly in low- and middle-income settings.[9]

CONCLUSION

Successful pregnancy and vaginal delivery are achievable following remission from ultra-high-risk metastatic choriocarcinoma. Careful timing of conception, vigilant antenatal monitoring, and structured postpartum follow-up are essential to ensure favourable maternal and neonatal outcomes.

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