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ABOUT COVER
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Uterine epithelioid trophoblastic tumor with the main manifestation of increased human chorionic gonadotropin: A case report

Li-Na Huang, Xi Deng, Jian Xu

BACKGROUND
Epithelioid trophoblastic tumor (ETT) is an extremely rare malignant gestational trophoblastic neoplasm commonly presenting with abnormal vaginal bleeding, abdominal pain, and increased human chorionic gonadotropin (hCG). This study reported a case of uterine ETT with the main manifestation being increased hCG.

CASE SUMMARY
A 39-year-old female was referred to the Ningbo Maternal and Child Hospital of China in December 2022, complaining of increased hCG levels for 1 month. Magnetic resonance imaging revealed gestational trophoblastic tumor, and hysteroscopic electrotomy and curettage of intrauterine hyperplasia were performed. The patient was diagnosed with uterine ETT through postoperative pathological examination and immunohistochemical results. Total laparoscopic hysterectomy and bilateral salpingectomy were performed, and hCG levels returned to normal. The patient was without recurrence during the postoperative 3-month follow-up.

CONCLUSION
This study reported a case of uterine ETT with the main manifestation being increased hCG, highlighting that ETT should be considered in the presence of abnormal hCG. A total laparoscopic hysterectomy is recommended.

Key Words: Uterine epithelioid trophoblastic tumor; Gestational trophoblastic neoplasm; Diagnosis; Human chorionic gonadotropin; Case report
INTRODUCTION

An epithelioid trophoblastic tumor (ETT) originates from chorionic-type intermediate trophoblast cells and occurs mainly in women of childbearing age, accounting for 1%-2% of gestational trophoblastic neoplasm (GTN)[1]. The ETT lesions most commonly occur in the corpus uterus, followed by the cervix uteri and lungs, while a few cases occur in other pelvic and abdominal organs such as the vagina, oviduct, intestinal tract, and liver[2]. ETT commonly presents with abnormal vaginal bleeding, abdominal pain, and normal or mildly increased human chorionic gonadotropin (hCG). Due to the rare occurrence of the disease and the lack of specific clinical manifestations, ETT is very difficult to diagnose. This study reported a case of uterine ETT with the main manifestation being increased hCG.

CASE PRESENTATION

Chief complaints
A 39-year-old female was referred to the Ningbo Maternal and Child Hospital of China in December 2022, complaining of increased hCG levels for 1 month.

History of present illness
hCG was 49.21 IU/L at admission. The patient denied any other complaints.

History of past illness
The patient underwent curettage for hydatidiform mole in 2006.

Personal and family history
The patient had undergone two full-term cesarean deliveries in 2010 and 2016, respectively. The patient had no relevant family history.

Physical examination
The physical examination was unremarkable and normal.

Laboratory examinations
hCG was 49.21 IU/L at admission.

Imaging examinations
The color Doppler flow imaging of the uterus showed a 21 mm × 7 mm × 20 mm hypoechoic area in the anterior uterine wall with a well-circumscribed margin and a rich blood flow signal (resistance index: 0.46). Magnetic resonance imaging showed roundish long T1 and slightly short T2 signals of 19 mm × 19 mm × 16 mm in the anterior uterine wall (Figure 1), which suggested a GTN.

FINAL DIAGNOSIS

Hysteroscopic electrotomy and curettage of intrauterine hyperplasia were performed. Postoperative pathological examination showed endometrial hyperplastic and intrauterine malignant tumor. Immunohistochemical results showed diffuse positivity for GATA-3, CK (pan), and CD146 and focal positivity for β-hCG, human placental lactogen (hPL), and
Figure 1  Magnetic resonance imaging of the uterine epithelioid trophoblastic tumor. A: T2 weighted image (T2WI) coronal view of a mixed T2WI iso-signal nodular mass (arrow) in the myometrium of the left anterior wall of the uterus with local protrusion into the uterine cavity; B: T2WI pectral attenuated inversion recovery (SPAIR) in axial position with a mixed iso-signal mass (arrow); C: T1 weighted image SPAIR-enhanced coronal view with an inhomogeneous enhancement of the mass (arrow).

α-inhibin. Nuclear staining of Ki-67 and P63 was seen (Figure 2). Therefore, the patient was diagnosed with uterine ETT.

**TREATMENT**

Total laparoscopic hysterectomy and bilateral salpingectomy were performed. Postoperative pathology showed tumor residues (infiltrating < 1/2 fibromuscular wall) between the local muscle wall of the uterus, and the maximum diameter of the residual tumor was about 0.6 cm under the microscope.

**OUTCOME AND FOLLOW-UP**

The hCG levels returned to normal, and the patient did not recur during the postoperative 3-month follow-up.

**DISCUSSION**

ETT typically presents with atypical symptoms, such as vaginal bleeding or abdominal pain, but these features were not observed in the present case, posing a challenge to the initial diagnosis. The diagnosis of ETT mainly relies on histopathology and immunohistochemistry. Immunohistochemistry can be used to differentiate ETT from other types of GTN, and the important immunohistochemical markers include p63, α-inhibin, β-hCG, GATA3, hPL, PLAP, and the Ki67 proliferation index[3], consistent with the findings in the case reported here.

Currently, the primary treatment for ETT is hysterectomy, which is recommended for patients with lesions confined to the uterus and no requirement for fertility preservation[4]. In a retrospective review, five women with ETT were cured by hysterectomy[5]. One study reported a case that underwent hysteroscopic resection with uterus preservation and found no recurrence at the 16-month follow-up[6]. For lesions confined to the uterus, complete hysterectomy or extensive resection of lesions can completely alleviate the disease[7]. Considering the strong concealed of ETT, surgery with preservation of reproductive function is generally not recommended[8]. The patient’s hCG decreased to normal after hysteroscopic electrosurgical and curettage of intrauterine hyperplasia, while the pathological results of the specimen showed tumor residue in the endometrial myometrium, indicating that normal hCG after surgery and residual lesion may coexist, and preservation of the uterus should be considered with caution.

The preoperative assessment of the patient indicated that the uterus was of normal size and could be fully extracted vaginally. Therefore, laparoscopic surgery was selected. In cases where the uterus is enlarged and cannot be fully extracted vaginally, open abdominal surgery is still recommended, or protective measures should be taken to remove the specimen (such as placing it in a sealed specimen bag and extracting it through a vaginal incision). The use of a morcellator should be avoided to prevent iatrogenic tumor dissemination and implantation[9-11].

ETT should be considered in the presence of abnormal hCG levels. A total laparoscopic hysterectomy is recommended.

**CONCLUSION**

This study reported a case of ETT, the main manifestation of which was increased hCG, providing valuable experience in
Figure 2 Immunohistochemical findings of uterine epithelioid trophoblastic tumor. A: Hematoxylin and eosin (HE) (× 10), the tumor cells were arranged in nested clusters, and a large map-like necrosis was seen in the center of the neoplastic nests, marked with an asterisk; B: HE (× 20), most of the tumor cells were uniform in size and showed epithelial-like morphology (black triangle): The cells were polygonal with clear borders, abundant cytoplasm, and eosinophilic, clear cell membrane, rounded and centered nuclei with obvious small nucleoli, and occasional nuclear fission images; C: Immunohistochemistry (IHC) (× 10), tumor cells express β-human chorionic gonadotropin; D: IHC (× 10), tumor cells expressed α-inhibin; E: IHC (× 5), tumor cells expressed p63; F: IHC (× 10), tumor cells Ki-67 proliferation index was about 60%.

the diagnosis and treatment of ETT for clinical gynecologists.

FOOTNOTES

Author contributions: Huang LN conducted the studies, collected data, and drafted the manuscript; Deng X and Xu J participated in acquiring, analyzing, or interpreting data and drafting the manuscript. All authors have read and approve the final manuscript.

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