Case Report

# Choriocarcinoma of the Ovary Masquerading as Ectopic Pregnancy

**Roopa Malik, Menka Verma*, Meenakshi Chauhan, Pooja Sinha**
Department of Obstetrics and Gynaecology, Pt. B. D. Sharma PGIMS, Rohtak, Haryana, India

## Abstract

Choriocarcinoma of ovary is a rare aggressive tumor of ovary. It may be gestational or nongestational tumor. High index of suspicion is required for diagnosis in reproductive age group females. Here, we present a case report of a 30-year-old female who was operated for ectopic pregnancy but was diagnosed as ovarian choriocarcinoma on histopathology. The patient had abnormally high beta-human chorionic gonadotropin levels with history of amenorrhea and negative urine pregnancy test. On laparotomy, a mass of 8 cm × 10 cm was found which was confirmed as choriocarcinoma on histopathological examination. The patient was managed with chemotherapy and responded well to treatment.

**Keywords:** Chemotherapy, choriocarcinoma, gestational, ovarian, beta-human chorionic gonadotropin

## Introduction

Choriocarcinoma of the ovary is a rare aggressive tumor of the ovary. It may be either gestational or nongestational in origin. The occurrence of gestational ovarian choriocarcinomas is extremely rare with estimated incidence of 1 in 369 million pregnancies, whereas nongestational ovarian choriocarcinomas account for <0.6% of ovarian germ cell neoplasm.[1,2] Majority of cases are gestational in origin and arise from ectopic ovarian pregnancy or more commonly metastasis from primary tubal or uterine choriocarcinoma. Pure, meaning none of the other germline cells present, nongestational choriocarcinoma of the ovary is extremely uncommon germ cell neoplasm with a worse prognosis. The diagnosis is difficult in women of reproductive age as the clinical features are nonspecific and can be confused with other diseases.[3] Nongestational and gestational choriocarcinoma need to be differentiated as the treatment for nongestational type is aggressive, and quite often, pure nongestational types are lethal.[4] Here, we present a rare case of pure choriocarcinoma in a 30-year-old female. Written informed consent was taken from the patient, and the institutional ethics committee approved the study with reference No. BREC/21/119.

## Case Report

A 30-year-old female (para 1 and abortion 2) with the last abortion 3 years back was referred to our hospital. The patient presented to referring hospital with a history of amenorrhea of 3 months and bleeding per vaginum for 1 week. Her urinary pregnancy test was negative. On per vaginal examination, uterus was palpable as 8–10 weeks gravid uterus and there was a mass of 8 cm × 8 cm size with mixed consistency in right fornix. Her ultrasonography showed the normal size of uterus with endometrial thickness of 6 mm. There was minimal free fluid with a large heterogeneous solid cystic mass lesion of size 8 cm showing internal vascularity displacing uterus anteriorly

*Article History:*
**Submitted:** 23-Jul-2021
**Revised:** 2-Dec-2021
**Accepted:** 15-Mar-2022
**Published:** 19-Sep-2022

Access this article online

Quick Response Code:

Website: www.e-gmit.com

DOI: 10.4103/gmit.gmit_93_21

**Address for correspondence:** Dr. Menka Verma, Department of Obstetrics and Gynaecology, Pt. B. D. Sharma PGIMS, Rohtak, Haryana, India.
E-mail: dr.menkaverma@gmail.com



**How to cite this article:** Malik R, Verma M, Chauhan M, Sinha P. Choriocarcinoma of the ovary masquerading as ectopic pregnancy. Gynecol Minim Invasive Ther 2022;11:247-9.

and arising from right ovary and left ovary appeared bulky. Magnetic resonance imaging findings corroborated to observation made on ultrasound with approximate size of 7 cm × 6 cm and maintenance of fats planes with gut posteriorly and with the bladder anteriorly, thus maintaining the possibility of molar ectopic gestation with bilateral theca lutein cyst [Figure 1]. Blood workup depicted beta-human chorionic gonadotropin (β-HCG) levels as 5,00,000 mIU/ml. The patient underwent laparotomy, per operatively 10 cm × 10 cm lobulated hemorrhagic mass visible on right side ovary and a 6 cm × 6 cm lobulated mass with hemorrhagic areas seen on the left side [Figure 2]. With the involvement of bilateral ovaries, intraoperative stage was considered ovarian carcinoma Ib. Salpingo-oophorectomy was carried out on the right side, and biopsy was taken from left side ovarian tumor and omentum which were insignificant on histopathological examination. On postoperative day 3, she was referred to our hospital; on per abdominal examination, an irregular firm mass felt in the abdomen of size 8 cm × 10 cm on the left side. Her β-HCG was 15,000 mIU/ml. Microscopically, there was marked atypia, the presence of mitotic figures, and cytotrophoblast cells. The tumor was confirmed to be pure choriocarcinoma with immunohistochemistry tumor markers found positive for β-HCG, Ki-67 present in 30%–40%, and also for cytokeratin. For staging purposes, the mass was classified as International Federation of Gynecology and Obstetrics stage II with WHO risk score of 11. The patient was given six cycles of (etoposide, methotrexate, dactinomycin, cyclophosphamide, and vincristine [EMACO]) regime. Her β-HCG decreased to 2 mIU after the fifth cycle of chemotherapy, and the patient was responding well with chemotherapy without any complications and side effects. Currently, the patient is under regular follow-up.

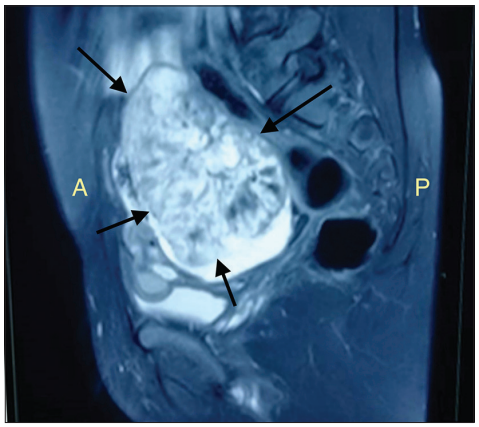


**Figure 1:** Preoperative magnetic resonance imaging pelvis showing large mass with heterogeneous texture (arrows showing margins) with uterus on the anterior side (A) and colon and spine on the posterior side (P)

## Discussion

Pure ovarian choriocarcinomas are rare ovarian tumors and difficult to diagnose with therapeutic challenges. It is very difficult to diagnose pure ovarian choriocarcinomas preoperatively and even more difficult among patients in the reproductive age due to the nonspecific clinical symptoms mimicking other more common diseases such as ectopic pregnancy and molar gestation. An adnexal mass in reproductive age with an increased serum β-HCG level and irregular vaginal bleeding can be easily misdiagnosed as an ectopic pregnancy preoperatively.[5] Confirmation of the diagnosis depends upon the histopathologic findings, the presence of malignant cytotrophoblasts and syncytiotrophoblasts, immunohistochemical staining with β-HCG, and placental lactogen.[2]

With no distinctive immunohistochemical or ultrastructural differences between the two in reproductive age groups, gestational and nongestational choriocarcinoma appear similar in histopathologic examination. However, the molecular genetic analysis adds a reliable dimension to identify pure ovarian choriocarcinoma.[2] Analysis of short tandem repeats, highly specific DNA polymorphic loci in human genome, are used to detect paternal alleles of tumor. Tumor with paternal DNA element is gestational while the presence of only the maternal genome confirms nongestational tumor.[6] However, most of the hospitals are not equipped with such advanced techniques, and for the same reason, molecular genetic analysis could not be performed in our patients.

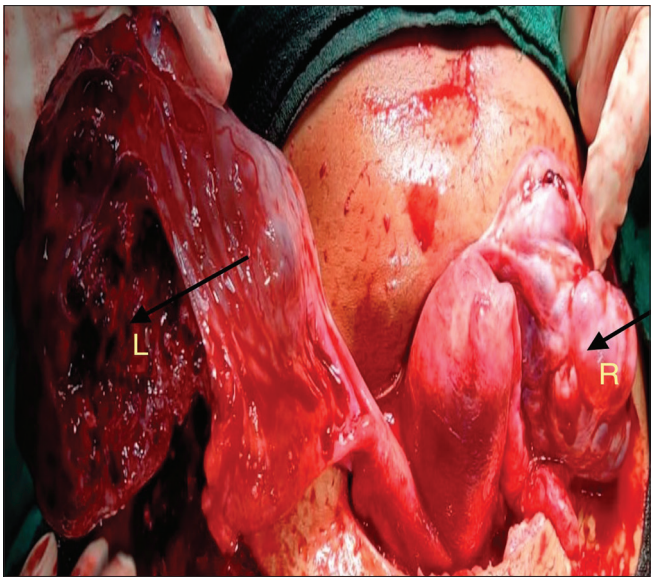


**Figure 2:** Intraoperative view (marked with arrow) showing 10 cm × 10 cm multilobulated hemorrhagic mass on the right side (R) and 6 cm × 6 cm multilobulated hemorrhagic mass with firm consistency on the left side (L)

The diagnostic criteria for nongestational were first described by Saito *et al*., which included the exclusion of molar and uterine pregnancy, pathological confirmation, and the absence of disease in the uterine cavity.[7] Nongestational variants occur in younger age group females who are sexually immature, never had sexual intercourse or unable to conceive, whereas gestational variants occur more commonly in 20–40 years age group.[8] Both gestational, as well as nongestational choriocarcinoma, secrete β-HCG, with values lower in nongestational variant as compared to gestational variant. It is also important for follow-up of the disease.

Treatment of choriocarcinoma involves chemotherapy with or without surgery. Surgical options include removal of ovary and hysterectomy to debulk pelvic tumor mass. Chemotherapy includes single-agent therapy such as methotrexate or actinomycin-D, triple-agent chemotherapy, or multidrug regimes such as EMACO.[4]

## Conclusion

Gestational choriocarcinoma has a good prognosis compared to nongestational tumors, although some of the authors have proposed that prognosis depends on the surgical stage of the disease at the time of presentation rather than gestational or nongestational type. In our case, considering the age of presentation and high initial β-HCG value, we considered the patient as gestational choriocarcinoma and treated with EMACO regime, to which she responded very well.

## Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient has given her consent for her images and other clinical information to be reported in the journal. The patient understands that her name and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

## Financial support and sponsorship

Nil.

## Conflicts of interest

There are no conflicts of interest.

## References

1. Axe SR, Klein VR, Woodruff JD. Choriocarcinoma of the ovary. Obstet Gynecol 1985;66:111-4.
2. Lv L, Yang K, Wu H, Lou J, Peng Z. Pure choriocarcinoma of the ovary: A case report. J Gynecol Oncol 2011;22:135-9.
3. Tarney CM, Tian C, Craig ER, Crothers BA, Chan JK, Gist GD, *et al.* Relative effects of age, race, and stage on mortality in gestational choriocarcinoma. Int J Gynecol Cancer 2018;28:338-45.
4. Babu MK, Kini U. Choriocarcinoma of the ovary in a post-menopausal woman. Indian J Cancer 1996;33:111-5.
5. Han V, Kaye S. A rare case of gestational choriocarcinoma presenting as cornual ectopic pregnancy. J Obstet Gynaecol Can 2018;40:351-3.
6. Corakçi A, Ozeren S, Ozkan S, Gürbüz Y, Ustün H, Yücesoy I. Pure nongestational choriocarcinoma of ovary. Arch Gynecol Obstet 2005;271:176-7.
7. Saito M, Azuma T, Nakamura K. On ectopic choriocarcinoma. World Obstet Gynecol 1965;17:459-84.
8. Jacobs AJ, Newland JR, Green RK. Pure choriocarcinoma of the ovary. Obstet Gynecol Surv 1982;37:603-9.