



Gestational trophoblastic disease: Clinical features, diagnosis and care across reproductive settings

Ethan Caldwell*

Department of Obstetrics and Gynecology, Northbridge University, Toronto, Canada

DESCRIPTION

Gestational trophoblastic disease refers to a group of conditions that arise from abnormal growth of trophoblastic tissue, the cells that normally contribute to placenta formation during pregnancy. These conditions vary in severity, ranging from benign forms such as hydatidiform mole to malignant entities like choriocarcinoma and other trophoblastic tumors. Although relatively uncommon, these disorders are important and due to their potential for rapid progression and the need for timely recognition and management. The most common presentation is a hydatidiform mole, which can be classified into complete and partial types. A complete mole typically develops when an egg lacking maternal genetic material is fertilized, leading to tissue composed entirely of paternal chromosomes. This results in diffuse swelling of chorionic villi and absence of a viable embryo. In contrast, a partial mole usually arises when two sperm fertilize a normal egg, producing an abnormal embryo along with focal trophoblastic changes. These genetic differences influence both clinical presentation and outcomes.

Patients often present with abnormal uterine bleeding during early pregnancy, which may be accompanied by symptoms such as excessive nausea, vomiting or pelvic discomfort. The uterus may appear larger than expected for gestational age and levels of human chorionic gonadotropin are often markedly elevated. In some cases, complications such as early-onset hypertension or thyroid overactivity can occur due to the hormonal effects of the disease. Diagnosis relies on a combination of clinical findings, laboratory testing and imaging. Ultrasound plays a central role, with characteristic patterns that help distinguish molar pregnancies from normal

gestation. A complete mole often shows a diffuse echogenic pattern without a fetus, sometimes described as resembling clusters of small cystic spaces. Partial moles may show an abnormal fetus along with placental changes. Measurement of serum human chorionic gonadotropin provides additional support for diagnosis and is essential for follow-up after treatment.

Management typically involves evacuation of the uterine contents, most commonly through suction curettage. This procedure removes abnormal tissue and allows for histopathological examination to confirm the diagnosis. Following evacuation, careful monitoring of human chorionic gonadotropin levels is necessary to ensure that all trophoblastic tissue has been eliminated. These levels are measured regularly until they return to normal and remain stable over a defined period. In a proportion of cases, gestational trophoblastic disease can persist after initial treatment, leading to what is termed gestational trophoblastic neoplasia. This condition may involve local invasion into the uterine wall or spread to distant sites such as the lungs or brain. Early detection of persistent disease is made possible through serial hormone monitoring, which can reveal rising or plateauing levels after initial decline.

Treatment of persistent or malignant forms often involves chemotherapy, which has achieved high success rates even in advanced stages. The choice of regimen depends on factors such as risk classification, extent of disease and prior treatment history. Many patients respond well to single-agent chemotherapy, while others may require combination regimens. Surgical intervention may be considered in selected cases, particularly when localized disease persists or complications arise. An important aspect of care involves counseling and follow-up. Patients are advised to avoid

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Corresponding author: Ethan Caldwell, Department of Obstetrics and Gynecology, Northbridge University, Toronto, Canada
Email: ethan.caldwell@northbridgeuniv.ca

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pregnancy during the monitoring period to prevent confusion in interpreting hormone levels. Contraceptive methods are discussed to ensure effective planning. Emotional support is also important, as the diagnosis can be distressing, especially when it follows a desired pregnancy. The prognosis for gestational trophoblastic disease is generally favorable when appropriate care is provided.

Early detection and consistent follow-up contribute to high cure rates, even in cases with metastatic spread. Advances in diagnostic methods and treatment strategies have significantly improved outcomes over time, allowing most patients to retain future fertility. It continues to explore factors that influence disease development and progression. Genetic and molecular studies have provided insights into the mechanisms that lead to abnormal trophoblastic proliferation. These findings may contribute to improved

diagnostic tools and more individualized approaches to care in the future. Public awareness and access to healthcare services play a role in ensuring timely diagnosis. In many settings, early pregnancy care and routine ultrasound examinations help identify abnormalities at an earlier stage. Education of healthcare providers and patients supports recognition of warning signs and prompt referral for specialized care. Gestational trophoblastic disease illustrates the complexity of reproductive biology, where deviations in normal developmental processes can lead to a wide spectrum of clinical conditions. With appropriate management and follow-up, most individuals affected by these disorders can achieve recovery and maintain reproductive potential, highlighting the importance of continued attention to this area of women's health.