

Invasive Hydatidiform Mole: A Rare Complication of Gestational Trophoblastic Disease. Case Report

Patricia Alejandra González Rodríguez^{1,2}, Alejandro Lenin Villalobos Rodríguez³, Karla Espinoza Aguilar^{1,2}

^{1,2}Gynecology and Obstetrics Resident. Hospital General de Cancún “Dr. Jesús Kumate Rodríguez”, Servicios de Salud del Instituto Mexicano del Seguro Social para el Bienestar (IMSS-BIENESTAR). ²Facultad de Medicina de la Universidad Autónoma de Yucatán (UADY).

³Gynecologist and Obstetrician. Hospital General de Playa del Carmen, Servicios de Salud del Instituto Mexicano del Seguro Social para el Bienestar (IMSS-BIENESTAR).

ABSTRACT

Background: Gestational trophoblastic disease (GTD) comprises a heterogeneous group of disorders arising from abnormal proliferation of trophoblastic tissue. Invasive hydatidiform mole is an uncommon but potentially serious complication, characterized by myometrial invasion and, rarely, metastatic spread. Early diagnosis is essential due to its high curability with appropriate management.

Case presentation: 34-year-old primigravida who presented with abdominal pain, amenorrhea, severe anemia, and markedly elevated β -human chorionic gonadotropin (β -hCG) levels. Pelvic ultrasound revealed a heterogeneous endometrial mass with cystic areas, and magnetic resonance imaging suggested invasive trophoblastic disease. Due to the risk of uterine complications, total abdominal hysterectomy was performed. Histopathological examination confirmed the diagnosis of invasive hydatidiform mole without evidence of extrauterine spread.

Conclusion: Invasive hydatidiform mole, although rare, should be suspected in patients with persistently elevated or rising β -hCG levels following molar pregnancy. Strict post-evacuation surveillance and a multidisciplinary approach are crucial to prevent delayed diagnosis and ensure favorable outcomes.

KEYWORDS: Invasive hydatidiform Mole, Gestational Trophoblastic Disease, Gestational Trophoblastic Neoplasia, Pregnancy Complications, Hydatidiform Mole.

ARTICLE DETAILS

Published On:
31 January 2026

Available on:
<https://ijmscrs.com>

I. INTRODUCTION

Gestational trophoblastic disease (GTD) encompasses a group of disorders that arise from the aberrant growth of trophoblastic tissue after fertilization. It originates in the placenta, but can invade other areas^I. Its clinical presentation, biological behavior and evolutionary potential are incredibly diverse. It is recognizable by the cystic formations that resemble bunches of grapes, a direct result of the hydropy of chorionic villi^{II}.

Within this spectrum, we find benign variants: the complete hydatidiform mole, which typically shows an androgenetic diploid karyotype (almost always 46XX) without a trace of embryonic tissue. Also the partial mole, often triploid, with fetal or embryonic remains^{III}. As well as malignant forms, these are encompassed as gestational

trophoblastic neoplasia (GTN). Here we find the invasive hydatidiform mole, the choriocarcinoma, the trophoblastic tumor of the placental site and the epithelioid trophoblastic tumor^{IV}. Although globally rare, GTD has considerable clinical relevance due to its ability to progress, reappear and, in certain cases, spread at a distance. The good thing is that, if detected and treated in time, the cure rates are really high.

It is estimated that between 15 and 20% of the complete mole, and only 1 to 5% of the partial ones, progress to some form of NTG. A key example is the invasive mole hydatidiform. This represents, in fact, one of the most recurrent manifestations of this evolution^V.

Its recognition is based on the invasion of the myometrium by mole trophoblastic tissue, still preserving the hydropic chorionic villi, a distinctive feature. This marks

Invasive Hydatidiform Mole: A Rare Complication of Gestational Trophoblastic Disease. Case Report

a crucial difference with choriocarcinoma, which, for its part, is characterized by the total absence of villi and much more aggressive behaviour^{VI}.

The invading mole, although it typically remains in the uterus, can, on rare occasions, invade neighboring structures or even cause metastases, in distant sites, mainly pulmonary.

Symptoms of a complete mole pregnancy include early vaginal bleeding, severe nausea and a peak of β -hCG. Partial mole, on the other hand, sometimes manifest themselves in a similar way, but can often be confused with a miscarriage, even showing fetal heart activity. Normally, an ultrasound shows anechoic cystic clusters in the complete and fetal tissue in the partial ones.

Clinically, invasive hydatidiform mole is often diagnosed after evacuating a hydatidiform mole. It appears as persistent or recurrent uterine bleeding, uterine subinvolution, pelvic pain, and β -hCG levels that remain high, stabilize or increase.

β -hCG is a very sensitive and specific tumor marker for ETG. Its constant monitoring, in fact, is key. It allows us to identify in time if the disease persists or has invaded, which allows acting before serious complications appear^{VII}.

To diagnose an invasive hydatidiform mole, clinical, biochemical and imaging findings are generally combined^{VIII}. Pelvic ultrasound with color Doppler is the first choice, capable of revealing heterogeneous areas inside the uterus, with greater blood supply and a blurred interface between endometrium and myometrium. Magnetic resonance imaging, offers a much sharper image, showing the exact depth of the invasion in the myometrium and whether it has transcended the boundaries of the uterus^{IX}.

The management of the invasive mole hydatidiform is, above all, medical. It is based primarily on systemic chemotherapy, whose selection is not arbitrary; it depends strictly on the staging of the risk, according to the score established by the International Federation of Gynecology and Obstetrics (FIGO)^X. Low-risk patients respond wonderfully to single-agent regimens, such as methotrexate or actinomycin D. On the other hand, combined treatments are for the most complicated cases: high risk, if the first does not work, or when there is already metastases^{XI}. The amazing chemosensitivity of trophoblastic tissue is key: cure rates exceed 90%. Even with advanced illness, this is possible, as long as the approach is punctual and the follow-up, rigorous^{XII}.

Despite progress in diagnosis and therapy, invasive mole hydatidiform persists as a complication, although rare, potentially severe, of gestational trophoblastic disease. Its danger is evident, especially where monitoring with β -hCG is erratic or simply does not exist.

The global incidence of the hydatidiform mole is far from uniform; there are huge disparities from one region to another. It is markedly higher in developing nations compared to industrialized areas. It is linked to nutritional, genetic aspects and access to specialized health services.

In Latin America, ETG remains a challenge for Gynecology and Obstetrics. Especially in second and third level hospitals, where the most complex cases arrive, those that require an accurate diagnosis, a thorough follow-up and inevitably a chemotherapeutic management.

Early diagnosis of invasive hydatidiform mole depends crucially on the maintenance of follow-up after uterine evacuation. However, in health systems in developing countries, the interruption of monitoring is a relevant problem conditioned by factors such as economic limitations, geographical barriers, patient education level and saturation of health services.

These conditions trigger the risk of a late diagnosis, which leads to serious complications: massive uterine bleeding, perforation and even metastatic disease. Handling an invasive hydatidiform mole requires a multidisciplinary team. This means that oncologists, pathologists, radiologists and medical oncologists must work side by side. Only in this way is truly complete attention guaranteed, always following standardized protocols.

II. PRESENTATION OF THE CASE

It is a 34-year-old patient's first gesture. No relevant pathological personal history. She goes to the Emergency Service of his health center for abdominal pain referred to 8/10 on the VAS scale, 10-week amenorrhea and positive pregnancy test. At admission, it is hemodynamically stable, with blood pressure of 112/85mmHg, heart rate of 70 bpm and temperature of 36°C.

During the physical examination, a soft abdomen was found, with pain on deep palpation in both iliac pits, with no signs of peritoneal irritation. The uterine height at the umbilical scar level, which does not correspond to the gestational age. Laboratory studies were requested that showed hemoglobin 5.1gr/dL, hematocrit 16.1%, leukocytes $12.5 \times 10^3/\mu\text{L}$, platelets $326 \times 10^3/\mu\text{L}$, pregnancy immune test: positive, quantification of HCG $>300,000\text{mIU/mL}$. Liver function was within normal parameters. Thyroid profile T3free 2.46pmol/L, T3 total 0.94nmol/L, T4 free 22.84pmol/L, T4 total 195.26nmol/L, TSH $<0.05\text{uIU/mL}$.

Pelvic ultrasound reported uterus in anteversoflexion (AVF) increased in size, with smooth edges, no fibroids are observed in the parenchyma. Thickened endometrium that measures 69mm at the bottom level, of heterogeneous content with hypoechogenic areas and with some cystic images inside, without identifying gestational sac at the moment and in the exploration with the color Doppler and Doppler power there is an increase in its signal. Ovaries with corpus luteal cyst in right ovary, 20mm, cervix without free liquid at the bottom of the sac.

With these findings, the diagnosis of gestational trophoblastic disease, grade IV anemia, was made. It begins with the transfusion of three globular bundles.

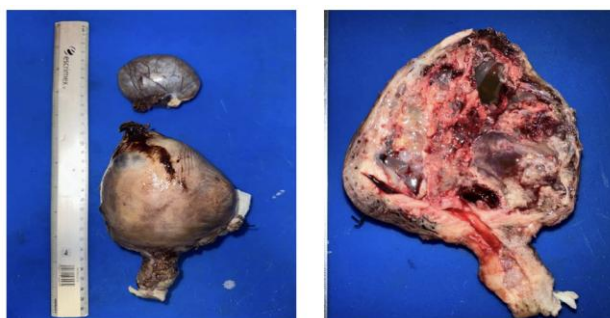
Invasive Hydatidiform Mole: A Rare Complication of Gestational Trophoblastic Disease. Case Report

Extension of the study was requested with chest TV taking which does not show alveolar infiltrate nodules, cavitated lesions, pleural effusion or mediastinal lymphadenopathies. In addition, Nuclear Magnetic Resonance is performed (figure 1), which reports data suggestive of invasive mole versus choriocarcinoma with thinning of the anterior and posterior uterine wall of the uterus of 5mm, without observing invasion of neighboring organs.



Figure 1: Abdominal-pelvic Nuclear Magnetic Resonance

Once the patient has been evaluated and invasion is ruled out, it is decided to perform a total abdominal hysterectomy, during the procedure a uterus of approximately 15x13cm is observed with perforation in the fundic area that presents fetid purulent secretion. Part is removed without complications and piece is sent to pathology. Macroscopic description: uterus increased in size, with dimensions of 10x9x8cm. Perforation of the uterine wall is observed, characterized by loss of the continuity solution at the level of the uterine fundus, of 2 x 1 cm. Uterine cavity completely occupied by a heterogeneous and irregular tumor, with dimensions of 9 x 8 x 7cm, composed of vesicles with grape cluster appearance, as well as cystic areas, more solid areas of purplish color and hemorrhagic appearance. Separately, a round, cystic specimen of 7 x 5 x 4.5cm is additionally received, on which fimbriae are identified, measuring 3 x 0.4cm. The outer surface of the cyst is smooth, light brown in color. At its opening, with transparent serous liquid output, as well as a unilocular cavity, with a smooth, homogeneous inner surface. (figures 2 -3)



From left to right figure 2: Uterus and paratubal cyst, figure 3: Sagittal cut of the uterus and cervix

A. Pathology report: Product of simple hysterectomy

- Invading hydatidiform mole
- Tumor site: uterine body
- Lymphovascular invasion: indeterminate
- Positive uterine fundus, with tumor perforation of the wall and serous
- Negative cervix (without tumor extension)
- Simple paratubal serous cyst

III. DISCUSSION

Invasive hydatidiform mole is a rare form of gestational trophoblastic neoplasia that typically occurs as a complication after a hydatidiform mole, mostly of a complete type.

According to studies, the unusual increase in hormonal levels of hCG was key to guiding the diagnosis of invasive hydatidiform mole. Various studies show that when β -hCG levels remain the same or increase after uterine evacuation, it represents the most sensitive criterion for identifying persistent gestational trophoblastic disease, even before clinical manifestations appear.

Other studies have already described it: heterogeneous hypervascular lesions and loss of endometrial-myometrial interface as characteristic findings.

The treatment plan for the case was consistent with international recommendations for the management of gestational trophoblastic neoplasia.

Previous studies have documented cure rates greater than 90% in patients treated in a timely manner. This behavior reaffirms the high chemosensitivity of trophoblastic tissue and the effectiveness of single-agent schemes in appropriately selected cases.

It is very important to talk about how crucial it is to continue with the follow-up after the mole evacuation. The literature points out that not adhering to regular β -hCG controls is a great reason why invasive diseases are detected late.

Finally, the experience described reinforces the relevance of biochemical surveillance and the multidisciplinary approach to ensure that patients receive the best care and avoid any major health complications.

CONCLUSIONS

Invasive hydatidiform mole, a rare but significant complication in gestational trophoblastic disease, whose prognosis depends drastically on a rapid diagnosis and meticulous follow-up after evacuation. The serial monitoring of β -hCG is absolutely key to detect in time if the disease persists or, even worse, becomes invasive and this even when there are no clear symptoms.

A timely diagnosis, based on the correlation of clinical, biochemical and imaging data, allowed early intervention

Invasive Hydatidiform Mole: A Rare Complication of Gestational Trophoblastic Disease. Case Report

and an appropriate treatment, always in accordance with international guidelines.

ETHICAL CONSIDERATIONS

This case report has been removed from all data related to the patient.

FINANCING

This research has not received any type of funding from public or commercial sector agencies, or for-profit.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ACKNOWLEDGMENT

Thanks to the “Facultad de Medicina de la Universidad Autónoma de Yucatán (UADY)”

REFERENCES

- I. Berkowitz RS, Goldstein DP. Clinical practice. Mole pregnancy. *N Engl J Med*. 2009;360(16):1639–45.
- II. Lurain JR. Gestational trophoblastic disease I. *Am J Obstet Gynecol*. 2010;203(6):531–9.
- III. Sebire NJ, Fisher RA, Foskett M, et al. Reproductive outcomes after complete and partial mole pregnancy. *Lancet*. 2002;359(9324):224–8.
- IV. Seckl MJ, Sebire NJ, Berkowitz RS. Gestational trophoblastic disease. *Lancet*. 2010;376(9742):717–29.
- V. Savage P, Seckl MJ. Gestational trophoblastic neoplasia. *BMJ*. 2010;340:c1110.
- VI. Ngan HY, Seckl MJ, Berkowitz RS, et al. Update on the diagnosis and management of gestational trophoblastic disease. *Int J Gynaecol Obstet*. 2018;143 Suppl 2:79–85.
- VII. Goldstein DP, Berkowitz RS. Current management of gestational trophoblastic neoplasia. *Hematol Oncol Clin North Am*. 2012;26(1):111–31.
- VIII. Lurain JR. Gestational trophoblastic disease II. *Am J Obstet Gynecol*. 2011;204(1):11–8.
- IX. FIGO Oncology Committee. FIGO staging for gestational trophoblastic neoplasia. *Int J Gynaecol Obstet*. 2002;77(3):285–7.
- X. Ngan HY, Bender H, Benedet JL, et al. Gestational trophoblastic neoplasia, FIGO 2000 staging and classification. *Int J Gynaecol Obstet*. 2003;83 Suppl 1:175–7.
- XI. Braga A, Mora P, de Melo AC, et al. Challenges in the diagnosis and treatment of invasive mole. *Best Practice Res Clin Obstet Gynaecol*. 2021;74:35–46.
- XII. Seckl MJ, Hancock BW, Berkowitz RS. Treatment of gestational trophoblastic disease. *Lancet*. 2010;376(9742):717–29.
- XIII. Lurain JR. Chemotherapy for gestational trophoblastic disease. *Best Practice Res Clin Obstet Gynaecol*. 2003;17(6):943–59.
- XIV. Berkowitz RS, Goldstein DP. Advances in the management of gestational trophoblastic disease. *Clin Obstet Gynecol*. 2003;46(3):541–56.
- XV. F Migliorelli, R Pascal, N Baños, A Goncé, MD Gómez-Roig, M Palacio. Management of the mole hidatiforme. *Clinic of Barcelona*. 2023; 1-9
- XVI. Baljeet Kaur FRCPath, Pathology of gestational trophoblastic disease (GTD). *Best Practice & Research Clinical Obstetrics & Gynaecology*, volume 74, July 2021, pages 3-28
- XVII. Ourlad Alzeus G. Tantengco, Federico Cristobal C. De Jesus II et al. Mole pregnancy in the last 50 years: A bibliometric analysis of global research output. *Placenta*, Volume 112, September 1, 2021, pages 54-61.