

Metastatic placenta choriocarcinoma in a 34 week pregnancy. Revision and management

Coriocarcinoma de placenta metastásico en embarazo de 34 semanas. Revisión y manejo

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Abstract

Choriocarcinoma is a rare, aggressive placental tumor that is part of so-called gestational trophoblastic diseases. We present the case of a 22-year-old nulliparous woman who spontaneously presents metrorrhagia with hemoptysis in the course of pregnancy at the 34th week. A tomography scan is performed to confirm nodules compatible with metastasis, cataloging it as a possible metastatic choriocarcinoma. A cesarean section is preferably scheduled and treatment with chemotherapy is initiated. Choriocarcinoma is a tumor very sensitive to chemotherapy and has a high survival rate, although in metastatic cases the disease is usually fatal.

Keywords: Choriocarcinoma. Metastatic choriocarcinoma. Pregnancy.

Resumen

El coriocarcinoma es un tumor de la placenta agresivo y poco frecuente que forma parte de las denominadas enfermedades trofoblásticas gestacionales. Presentamos el caso de una mujer de 22 años nulípara que, en el transcurso del embarazo, en la semana 34, presenta metrorragia con hemoptisis de forma espontánea. Se realiza una tomografía computarizada en la que se aprecian nódulos compatibles con metástasis, catalogándose como posible coriocarcinoma metastásico. Se programa para cesárea preferente y se inicia tratamiento quimioterápico. Este tumor es muy sensible a la quimioterapia y presenta un alto índice de supervivencia, aunque en los casos metastásicos puede ser mortal.

Palabras clave: Coriocarcinoma. Coriocarcinoma metastásico. Embarazo.

Introduction

Choriocarcinoma is an aggressive placental tumor that is part of gestational trophoblastic diseases. Up to 50% of cases originate from malignant transformation of a hydatidiform mole, although there is another

percentage that results from an ectopic pregnancy, an abortion, or even a full-term pregnancy. Risk factors include a history of miscarriages, multiple pregnancy, nulliparity, or age older than 35 years. Pathogenesis is determined by invasion of the decidua by trophoblastic cells with metastatic capacity, preferably to the lungs, although there are cases described with liver

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and brain metastases. Most common clinical manifestations include vaginal bleeding, hemoptysis, chest pain, nausea, and vomiting¹. Human chorionic gonadotrophin hormone beta fraction elevation also stands out, which is a tumor marker that is the basis of diagnosis and treatment response evaluation. High chorionic gonadotrophin production may be the cause of manifestations in other organs, such as theca lutein ovarian cysts, endometrial hyperplasia, mammary lobules hyperplasia, and hyperthyroidism secondary to increased gonadotrophin production². Main treatment is medical and is based on methotrexate, folinic acid, actinomycin D, etoposide or vincristine administration. From the surgical point of view, hysterectomy is carried out when there is chemotherapy resistance. Survival rate is 85-94% if there is no metastatic disease. With metastasis, survival decreases depending on the compromised organ: 70% in case of brain involvement, 27% if it is the liver, and 10% when both are compromised.

Clinical case

Twenty-two-year-old woman, with 34 weeks of pregnancy, with no allergies or otherwise relevant history. Pregnancy was well controlled, with all parameters and controls within normal values. She attended the emergency department with complaints of spontaneous metrorrhagia and hemoptysis, in addition to slight dyspnea. Physical examination revealed tachycardia, right basal pulmonary hypoventilation, and traces of blood in the vagina, with no other findings of interest. Blood tests with biochemistry, human chorionic gonadotrophin beta fraction (β -hCG) and thyroid hormones, blood count, coagulation tests, and chest X-ray were requested.

Blood test showed hemoglobin levels of 9.5 g/dL, β -hCG of 267,789 mIU/mL, and elevated thyroid hormones with decreased thyroid stimulating hormone; the rest of parameters were within normal values. Chest X-ray reported abundant infiltrates consistent with metastases plus predominantly right pulmonary effusion (Fig. 1). In view of the findings, a computed tomography was requested, in which abundant nodules were observed in both lungs, with necrotic component (Fig. 2), and posterior placenta with heterogeneous uptake and nodular/papilliform (nipple-shaped) formations (Fig. 3), all this consistent with choriocarcinoma metastases to be confirmed by anatomic pathology.

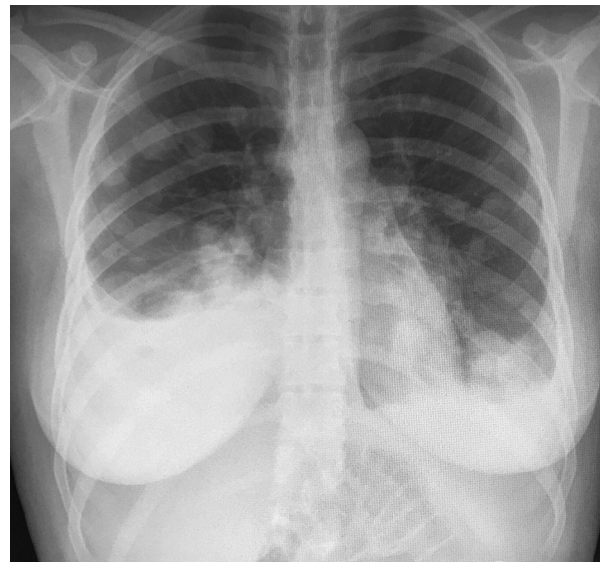


Figure 1. Chest X-ray showing bilateral pulmonary infiltrates consistent with metastases with predominantly right pulmonary effusion.

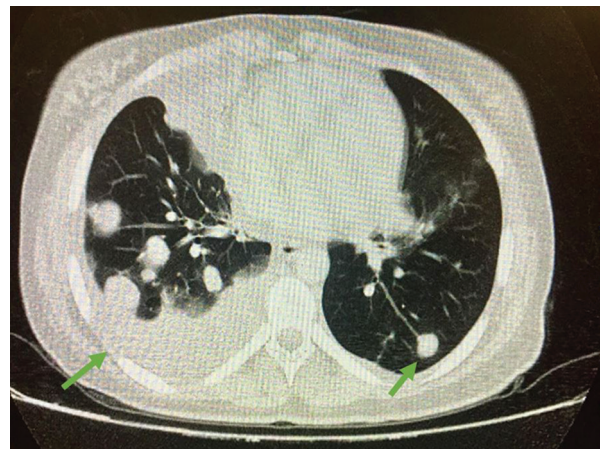


Figure 2. Chest computed tomography showing multiple lesions suspicious of metastases, most of them surrounded by a "ground glass" halo and with heterogeneous uptake, probably necrotic, with right middle lobe atelectasis.

Considering the state of pregnancy, the desire of a future new pregnancy and the severity of the condition, the interdisciplinary team, made up of two anesthesiologists and two gynecologists, decided to carry out a scheduled cesarean section preferably in order for chemotherapy treatment to be started as soon as possible.

Prior to surgery, treatment with propylthiouracil and propranolol was started in order to stabilize the thyroid gland and prevent a thyrotoxic crisis, and intramuscular betamethasone was administered to complete lung maturation. Given the possibility of

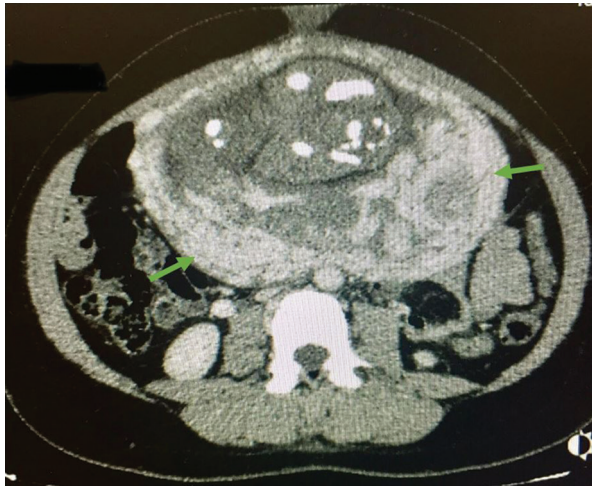


Figure 3. Placenta in posterior position, up to 4-cm thick. It shows heterogeneous density, with nodular and papilliform (nipple-shaped) formations of superior predominance.

bleeding, cross-tests were performed, and three units of packed red blood cells were reserved.

The day of surgery, a new blood test was carried out, which showed a hemoglobin value of 8 mg/dL and hematocrit of 25%, with the rest of parameters within normal values. Transfusion of one unit of packed red blood cells was decided, and two thick peripheral lines (16 G) were placed. The patient was monitored with pulse oximeter, blood pressure measurement, and electrocardiogram, and subdural anesthesia was induced with 0.5% hyperbaric bupivacaine (11 mg) and morphine (0.1 mg). After anesthesia induction, the patient developed hypotension, which was resolved with phenylephrine infusion at a rate of 50 mg/min. Surgery was started with Pfannenstiel incision, and the fetus was removed. The surgery evolved uneventfully and, at the end, bilateral transversus abdominis plane block was carried out with 0.25% levobupivacaine (30 mL), and the patient was transferred to the resuscitation unit, with a favorable evolution, and discharge at 48 hours to the oncology recovery unit, where once the diagnosis was confirmed by anatomic pathology, treatment was started with the EMACO regimen (etoposide 100 mg/m² on days 1-2, actinomycin D 0.5 mg on days 1-2, methotrexate 300 mg/m² on day 1, vincristine 1 mg/m² on day 8 and cyclophosphamide 600 mg/m² on day 8, at repeated cycles every 14 days).

β -hCG values decreased since the start of treatment: 191,702.31 mIU/L at 3 days, 36,353.73 mIU/L at 7 days, and 80.38 mIU/L at one month until they became negative after administration of six cycles with

Table 1. FIGO (International Federation of Gynecology and Obstetrics) classification

Stage	Criterion
Stage I	Disease confined to the uterus
Stage II	Gestational trophoblastic neoplasia extends outside the uterus, but is limited to the genital structures (adnexa, vagina, broad ligament)
Stage III	Gestational trophoblastic neoplasia extends to the lungs, with or without known genital tract involvement
Stage IV	All other metastatic sites

another 6-week reinforcement cycle. Gynecological examination and the last imaging tests (gynecological ultrasound and computed tomography) showed no evidence of disease at 6 months.

Discussion

Choriocarcinoma is a gestational tumor that belongs to the group of gestational trophoblastic diseases and that has a great capacity to invade vessels, which facilitates its dissemination and the development of regional, lung, brain metastases, as well as to other organs. Lung metastases are the most common (80%), followed by vaginal (30%), and liver and brain metastases (10%). In case of liver or brain metastases, it is necessary to carry out an exhaustive search for lung metastases. From the etiological point of view, it is associated with age, ABO system blood group, previous abortions, use of oral contraceptives and not-yet-clarified environmental factors³. For its diagnosis and treatment response evaluation, it is very important for β -hCG to be determined, because high values indicate presence of the disease, and evolutionary follow-up of its figures offers a vision of treatment effectiveness.

First-line treatment for low-risk choriocarcinoma (Tables 1-2) is methotrexate-based chemotherapy⁴, with etoposide, vincristine, and actinomycin/cyclophosphamide being added for high-risk choriocarcinoma. Chemotherapy should be continued until β -hCG becomes negative, and then a consolidation cycle should be administered. Response should be monitored throughout treatment with serial β -hCG determinations. Hysterectomy is not recommended as first-line treatment. However, it may be considered before chemotherapy when there are no metastases or in patients with no desire of future pregnancies.

Table 2. Prognostic score

	0	1	2	4
Age	Up to 39 years	More than 40 years	-	-
Previous pregnancy	Hydatidiform mole	Abortion/unknown	Full-term pregnancy	-
Tumor size (cm)	-	3-5 cm	> 5 cm	-
Human chorionic gonadotrophin beta fraction	103	103-104	104-105	> 105
Previous failed chemotherapy	-	-	1 drug	2 or more drugs
Site of metastasis	Lung Vagina	Kidney Spleen	Gastro-intestinal	Brain Liver
Number of metastases		1-4	4-8	> 8
Low risk: 0-6 points High risk: 7- 13 points Ultra-high risk: more than 13 points	Low risk: methotrexate treatment High risk: polychemotherapy treatment			

Hysterectomy as a co-adjuvant treatment to chemotherapy may be considered in patients with local disease, or who have completed childbearing, or for chemotherapy-resistant choriocarcinoma. Survival is 85-94% if there is no metastatic disease, but with metastasis, survival decreases depending on the compromised organ^{5,6}.

In our case, due to the desire of future pregnancies and the presence of metastatic disease, cesarean section performance and subsequent chemotherapy was opted for.

Conclusion

Choriocarcinoma is a placental tissue tumor of low incidence and high sensitivity to chemotherapy. Clinical presentation is due both to the tumor itself and its hormonal production. β -hCG is the mainstay for its diagnosis and for treatment response evaluation. First-line treatment consists of chemotherapy administration,

with hysterectomy being reserved for selected cases. Despite being a highly aggressive tumor, survival rate is high, but it decreases according to the involvement of other organs.

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Conflicts of interest

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Ethical disclosures

Protection of human and animal subjects. The authors declare that no experiments have been performed on humans or animals for this research.

Confidentiality of data. The authors declare that they have followed the protocols of their work center on the publication of patient data.

Right to privacy and informed consent. The authors have obtained informed consent from the patients and/or subjects referred to in the article. This document is in the possession of the corresponding author.

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