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Pulmonary Metastatic Choriocarcinoma in a Patient with Ectopic Pregnancy

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ABSTRACT

Gestational trophoblastic tumor (GTT) most commonly follows a molar pregnancy. In fact, it can occur following gestational events such as induced or spontaneous abortion, ectopic pregnancy, and term pregnancy. In this study, we present the case of a patient with ectopic pregnancy who was treated with a single dose of methotrexate (MTX). The maximum titer of beta subunit of human chorionic gonadotropin (BHCG) was 402. Work up of occult metastatic GTT was carried out following MTX therapy, due to elevated BHCG titer. In the positron emission tomography (PET) scan, a 17-mm lesion was detected in the right lung and treated via thoracotomy resection and adjuvant chemotherapy. Within an 18-month follow up, the patient did not reveal any symptoms and the BHCG titer level did not increase. Findings of this study revealed that after MTX therapy for ectopic pregnancy patients need to be followed up. Moreover, lack of BHCG titer decline, even in low tittering after treatment with MTX, can be related to GTT tumors or inadequate treatment for ectopic pregnancy.

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Introduction

Metastatic gestational trophoblastic neoplasia (GTN) occurs in about 4% of patients with molar pregnancy after evacuation; however, it seems to be more prevalent when gestational trophoblastic tumor (GTT) develop after non-molar pregnancies (1). Although GTT most commonly follows a molar pregnancy, it can occur after any gestational event, such as induced or spontaneous abortion, ectopic pregnancy, and term pregnancy (2). The incidence rate of ectopic gestation is almost 2% of all pregnancies and the highest rate belongs to those within the age group of 35-44 years (3). In this study, we present a case treated with methotrexate (MTX) due to ectopic pregnancy. After further investigations, metastatic choriocarcinoma was diagnosed.

Case report

The patient was a 31-year-old woman (G:3, L:1, Ab:1) with a history of male factor infertility. All her pregnancies were via in vitro fertilization (IVF). Her first pregnancy was twin, which was aborted at 16 weeks of gestation. The outcome of her second pregnancy was a living infant; she was lactating when her third pregnancy was identified. The patient presented with vomiting, missed period, and beta-human chorionic gonadotropin (BHCG) titer of 100, and rechecked titer of 202 after 48 hours. After 20 days, she complained of spotting and hypogastric abdominal pain with stable hemodynamic state. The ultrasound scan failed to identify an intrauterine or ectopic pregnancy. Therefore, she was advised to check BHCG titer. Her titer was 196, and after 48 hours, it was

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reported 212. In a later ultrasound scan, a 1.5 cm hypoecho lesion was observed in the right adenex in favor of ectopic pregnancy, and thus, she was planned to be treated with multiple doses of MTX. Afterwards, due to elevated liver enzymes after the first injection, she was treated with only a single dose of MTX.

The patient was advised to follow up her BHCG titer on a weekly basis. Her first titer after treatment was 77 revealing an appropriate decline; nevertheless, an increase to 400 was observed in the further checking.

The patient was followed for one month, since some of her symptoms were still observed. GTN was suspected and dilation and curettage was conducted for endometrium sampling, report of which demonstrated simple hyperplasia with secretory changes.

Laboratory findings like CA125, LDH, αfpr, and CEA were within the normal range; then, intensive work up was carried out in order to detect occult choriocarcinoma. Pelvic magnetic resonance imaging (MRI) with contrast was found to be normal and no lesion was detected. Chest computed tomography (CT) scan showed a 14 mm-nodule in anterior segment of the right lung (Figure 1).

Moreover, PET scan demonstrated a 17 mm-pulmonary mass in the right lung and multiple nodules in the left breast with enhanced uptake of radio nuclear substance (Figure 2). Because of existence of suspicious nodules in the left breast that was shown in PET scan, breast ultrasound was performed. In breast ultrasound, the lesions were reported as fibrocystic changes. Breast and lung examinations were normal, and the patient did not complain of any pulmonary symptoms such as coughing, dyspnea, or hemoptysis.

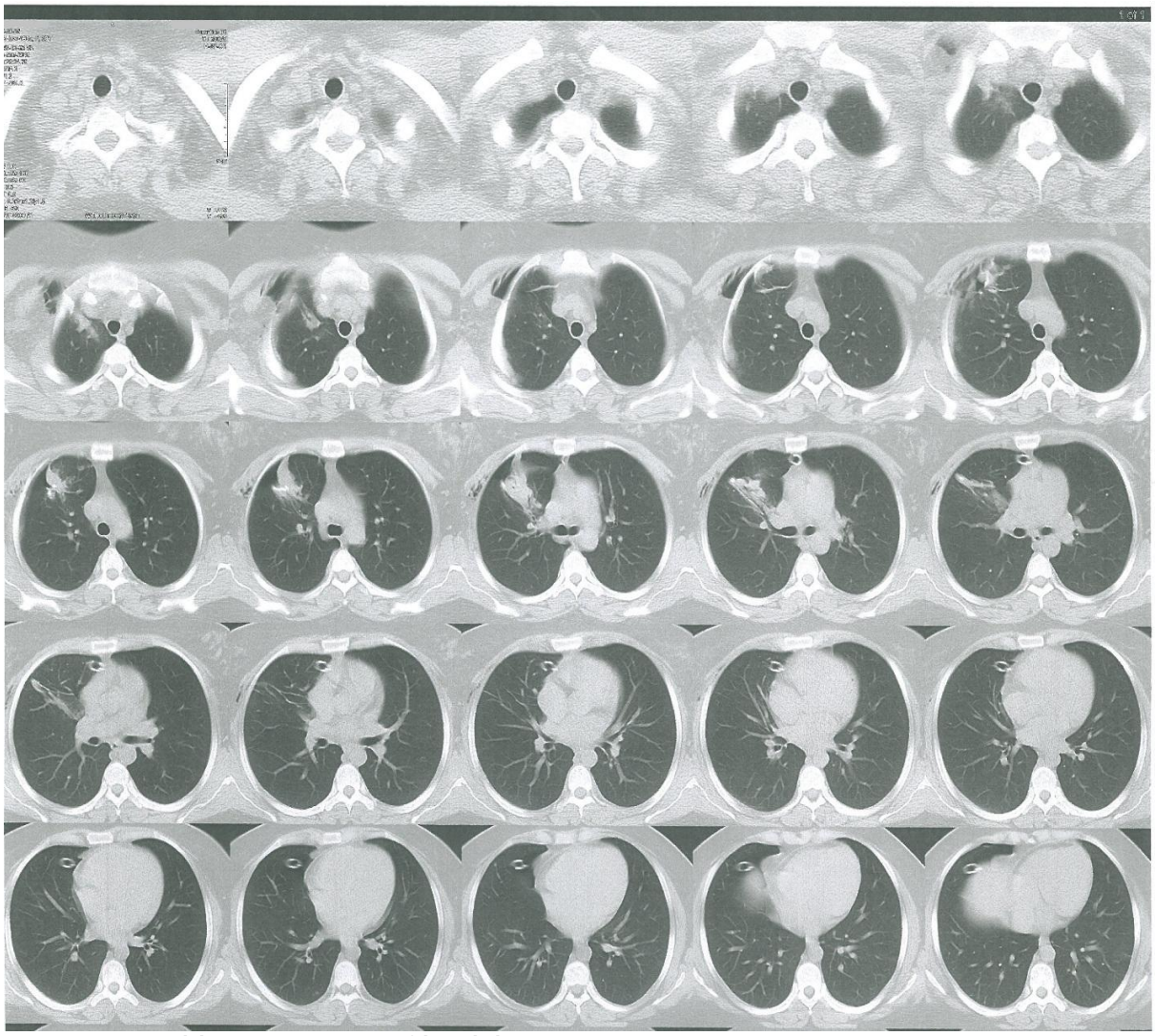

Figure 1. 14 mm nodule in anterior segment of the right lung

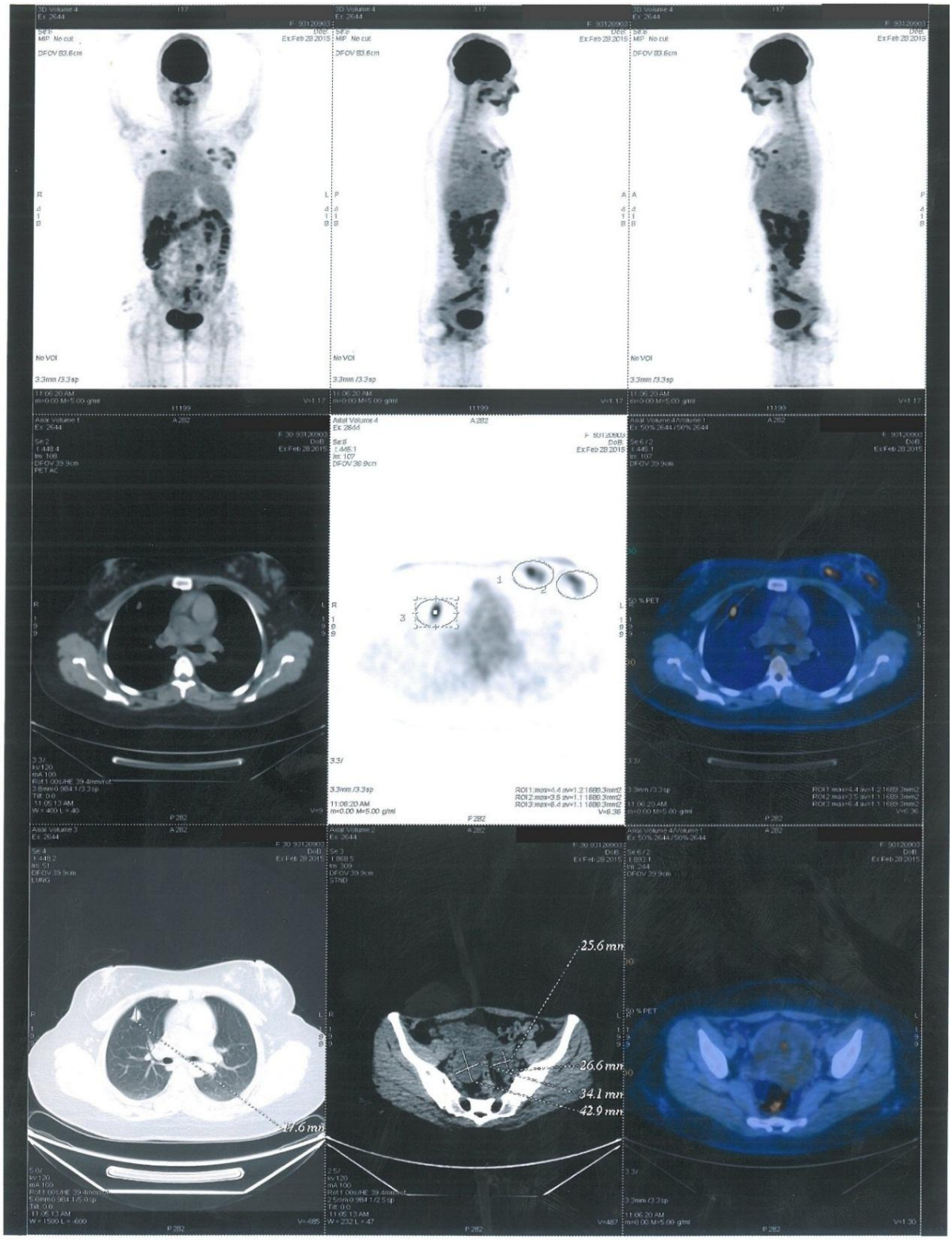

Figure 2. 17 mm pulmonary mass in the right lung and multiple nodules in the left breast with enhanced uptake of radio nuclear substance

Her staging was stage III, and upon the prognostic scoring she was high risk. Women with Federation of Gynecology and Obstetrics (FIGO) stage II and III disease and a World Health Organization (WHO) score of 7 or higher are at high risk for chemotherapy resistance and disease recurrence. They are usually managed by combined surgery and combination chemotherapy (4). The mentioned surgery for isolated pulmonary nodules might be thoracotomy with wedge resection (5). The criteria that predict a favorable outcome from surgical resection include absence of other systemic metastases, unilateral solitary lung nodule, no uterine involvement, and serum BHCG concentration less than 1500 mIU/Ml (6).

Thoracotomy was performed for the patient and pulmonary solitary nodule was resected. The histopathological findings demonstrated metastatic choriocarcinoma. BHCG titer decreased dramatically after surgery and became negative after two days. She was referred to an oncologist in order to undergo multiple drug chemotherapy. She received eight courses of EMA/CO (etoposide, methotrexate, actinomycin d, cyclophosphamide, and oncovin). Within 18 months, BHCG titer was followed up and her chest CT scan was normal showing no lesions; she did not have any symptoms.

Discussion

Metastatic GTT occurs in about 4% of patients of molar pregnancy after evacuation, though it is more commonly observed when GTT develops after non-molar pregnancies. Regarding our presented case, pulmonary metastatic choriocarcinoma occurred after an ectopic pregnancy that is very rare. Fortunately, metastatic lesion in this case was diagnosed soon and treated completely. Since trophoblastic tumors are often perfused by fragile vessels, they are frequently hemorrhagic.

Furthermore, the patient may be thought to have a primary pulmonary disease because of respiratory symptoms and radiographic findings may be dramatic (7), however, in our case, the patient did not have any symptoms such as hemoptysis, dyspnea, or chest discomfort and she was only diagnosed by BHCG titer monitoring after MTX therapy of ectopic pregnancy. In GTTs, metastasis normally occurs in high BHCG titer, but in our case titer was 402 at most. It demonstrates that GTT has the capability of metastasis even in low titers without any symptoms. She only complained of spotting and abdominal pain that could be related to her ectopic pregnancy. Any gestational product or villi was not detected in endometrium curettage. However, in ectopic pregnancies, the pathologic finding of endometrium curettage can be reported as hyperplasia (7).

Conclusion

Pulmonary metastatic choriocarcinoma can be observed in low BHCG tittering without any respiratory symptoms. The remaining symptoms comprising of spotting, absence of negative titter of BHCG, or increased titer after ectopic pregnancy treatment, can be due to inadequate treatment of ectopic pregnancy or other diagnoses such as occult GTN. It should be noted that the first line treatment of metastatic choriocarcinoma is chemotherapy and surgery can be helpful in specific cases.

Acknowledgments

None declared.

Conflicts of Interest

None declared.

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