Case Report

Presentation of Placental Site Trophoblastic Tumor with Amenorrhea

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Abstract

Placental site trophoblastic tumor (PSTT) is a rare manifestation of gestational trophoblastic neoplasia that may complicate any type of pregnancy. The disease is unique from other type, and is defined by slow growth, low human chorionic gonadotropin (hCG) serum levels, the late-onset metastatic potential, and most significantly, insensitivity to chemotherapy. We describe a case of a 31-year-old woman with prolonged amenorrhea and slightly elevated serum beta hCG (βhCG) level, referred for termination of abnormal pregnancy. During curettage, necrotic tissue was removed and severs vaginal bleeding was controlled with medical therapy. Histology examination showed neoplastic intermediate trophoblastic cells with invasion to the vessel wall compatible with PSTT. After that, hysterectomy was down and serum βhCG declined to undetectable level 2 weeks after surgery and was followed for 2 years without complication.

Keywords: *Placental site trophoblastic tumor, amenorrhea, vaginal bleeding*

Introduction

Placental site trophoblastic tumor (PSTT) is an extremely rare form of the gestational trophoblastic disease (GTD) of which approximately 200 cases has been reported in the literature.[1] Histopathologically, PSTT is characterized by a neoplastic population of intermediate trophoblastic cells at the implantation site often arranged as sheets of polyhedral, round, or occasionally spindle-shaped cells that infiltrate the myometrium extensively.[2,3] Because of the rarity of this type of tumor, there is little information about its epidemiology and etiology and few large series on diagnosis and treatment have been published.[4] Thus, report of any new cases with clinical presentation and treatment of disease is very important for characterize of this rare disease.

The serum beta human chorionic gonadotropin (βhCG) level is generally low in PSTT. Abnormal vaginal bleeding is the most common manifestation of this tumor.[5] Herein, we report a case of PSTT, who unexpectedly presented with prolonged amenorrhea.

Case Report

A G6P5 31-year-old woman was referred to our center with a history of 13 weeks amenorrhea and slightly elevated serum βhCG level. On pelvic examination, she had an enlarged uterus measuring about 10–12 weeks in size. The uterus was no tender, mobile and soft. Cervix was soft and adnexes were free. Serum β-hCG level was 190 IU/ml at the time of admission. On ultrasound examination, endometrial thickening of 22 millimeter (mm) was reported. Two cystic lesions measuring 26 mm × 16 mm and 18 mm × 13 mm were seen within the endometrial cavity. These had been interpreted as a blighted ovum or missed abortion.

The patient underwent therapeutic dilation and curettage (D and C) with a preoperative diagnosis of a blighted ovum. The uterus was felt to be soft at D and C and contained necrotic tissue not resembling usual products of conception. Severe vaginal bleeding occurred after D and C. This was controlled by bimanual massage, oxytocin infusion, and rectal prostaglandin. Microscopic study of the curettage specimen revealed sheets of intermediate trophoblastic cells with abundant eosinophilic cytoplasm, large nuclei, nuclear atypia, and <2 mitoses/10 high-power fields (HPF). Fibrin deposition was seen in the background. Prominent necrosis was absent. The neoplastic intermediate trophoblastic cells showed invasion to the vessel wall. According to

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these microscopic findings, the diagnosis of PSTT was made for the patient [Figure 1].

Because of definitive diagnose of our case with the pathological examination, according to comment of our pathologist and financial problems, we did not check prolactin.

Renal and liver function tests following surgery were normal. Computed tomography (CT) of the chest and brain showed no evidence of metastasis. On pelvic CT, the uterus was large, but there was not obvious evidence of a solid mass lesion. Since the patient had five children and did not desire to preserve her fertility and the disease was limited to the uterus, hysterectomy was planned. Intraoperatively, the uterus was symmetrically enlarged and globally infiltrated by tumoral mass. Ovaries seemed normal. Total hysterectomy was done and ovaries were preserved. Pathologic study of the hysterectomy specimen revealed slightly enlarged uterus. A hemorrhagic mass was seen within the endometrial cavity showing deep myometrial and focal serosal invasion. Microscopic study of the mass confirmed the diagnosis of the placental site trophoblastic tumor. Sheets and cords of polygonal intermediate trophoblastic cells with convoluted and occasionally bilobed nuclei were seen. The cells showed nuclear atypia, invasion to the vessel wall and <2 mitoses/10 HPF and deeply extended into the myometrium in a dissecting fashion. Foci of uterine serosal involvement were also evident.

Serum βhCG declined to undetectable level 2 weeks after surgery. The patient has been followed for 2 years. She has been disease free without receiving any adjuvant treatment.

Discussion

The placental site trophoblastic tumor is a rare manifestation of GTD that may complicate any type of pregnancy and presents in 0.25–5% of patients with GTD worldwide.

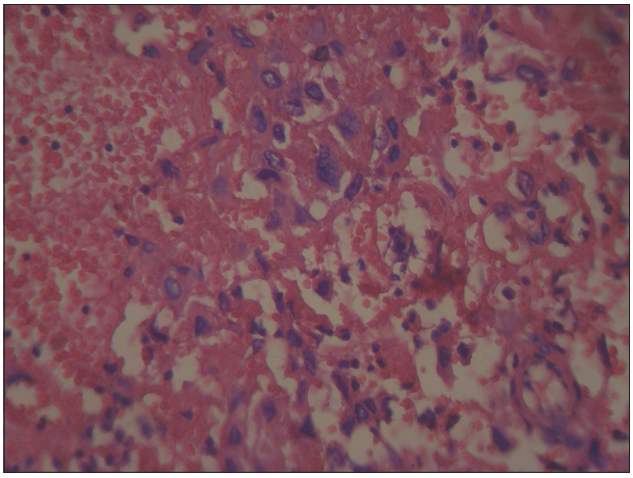

Figure 1: Sheets of polygonal intermediate trophoblasts are seen in a background of fibrin deposition (×400)

The disease is seen mostly in women of reproductive age.[6] Most of PSTT follow a term delivery and remnant arising after abortion or molar pregnancy. Risk factors for PSTT are not well understood. The disease is unique from other GTDs, because of slow growth, low hCG serum levels, late onset metastasis and the relative insensitivity to chemotherapy.[7,8] Due to the rarity of this type of GTD, reporting new cases and their presentations are important to improve PSTT diagnosis and treatment.

Abnormal vaginal bleeding is the most common presentation of the disease. Other presentations include amenorrhea, ruptured uterus, abdominal pain and postmenopausal bleeding in decreasing order of frequency.[5,9] Our case presented with amenorrhea which is not a common presentation of the disease. Seldom symptoms of the metastatic disease have been reported including virilization, nephrotic syndrome, and polycythemia. Most PSTT is diagnosed when a uterine lesion is seen on imaging and serum hCG is mildly elevated.[7] Behnamfar *et al*. from Isfahan University reported one case of PSTT presented with amenorrhea.[10] They collected other cases of PSTT that presented with amenorrhea.[10,11] According to their report, six cases of PSTT had amenorrhea.

Hyman *et al*. describe the presentation, treatment, and outcome of 17 cases of PSTT in Memorial Sloan-Kettering Cancer Center. Only one patient had an interval from last antecedent pregnancy of ≥24 months and others presented with vaginal bleeding.[12]

According to a Japanese study, a correct diagnosis of PSTT is achieved in only 35% of cases on the basis of curettage specimens.[13] However, we could diagnose PSTT in our case after curettage.

Most PSTTs behave in a benign fashion, but approximately 10–15% are clinically malignant.[14] The tumors are usually nonmetastatic and remain confined to the uterus. The most common site of metastasis is lung. However, they can spread to peritoneum, liver, pancreas, and brain late in their course. Tumors with more than 5 mitoses/10 HPF have an increased propensity for metastatic disease.[15]

Surgery remains the primary mode of treatment in patients presenting with disease limited to the uterus. Remission rates of up to 100% have been reported in these cases.

Adjuvant chemotherapy in patients with Stage I or II disease is considered for patients who have risk factors for recurrence including vascular invasion, deep myometrial invasion, serosal involvement, high mitotic index and persistently elevated postoperative serum hCG concentration.[16]

In metastatic disease treatment is surgery, chemotherapy with or without radiation. The response to chemotherapy is variable, and optimum regimen for PSTT is unknown. EMA-EP regimen (etoposide, methotrexate with folinic

acid, actinomycin D, and cisplatin) is a more potent regimen. However, the previous study found PSTT is not a chemosensitive tumor.[16] We treated our case successfully with abdominal hysterectomy without adjuvant or neoadjuvant chemotherapy. Undetectable levels of serum βhCG were achieved in <3 weeks after a hysterectomy. Since the patient had no extrauterine disease and had a rapid decline of hCG titer, postoperative chemotherapy was not necessary. Hysterectomy without chemotherapy has also been reported as a definitive treatment for tumors limited to the uterus in other studies.[16,17] Our experience confirms for patients with early stage and disease confined to the uterus, surgery alone is typically sufficient.

Persistent low levels of hCG titer in parous women presenting with amenorrhea should prompt the possibility of PSTT, which will be best treated with early diagnosis when the disease is confined to the uterus.

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Conflicts of interest

There are no conflicts of interest.

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