Placental site trophoblastic tumor: A case report

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Summary

Patient K.N., age 30, nulliparous deliveries and with one miscarriage, was admitted to the Institute of Gynecology and Obstetrics, Clinical Center of Serbia, in December 2000 with the following diagnosis: *Uterine myoma and adnexal mass.*

Key words: Placental site trophoblastic tumor; Hysterectomy.

Introduction

For a long time placental site trophoblastic tumor was not distinguished as a special entity from choriocarcinoma [1]. Originally it was named atypical chorionepithelioma by Marchand [2] and later it had numerous names: 'atypical choriocarcinoma', 'syncytioma', 'chorionepithelioma', and 'trophoblastic pseudotumor' [1, 2]. Placental site trophoblastic tumor is usually benign but may become a highly malignant neoplasm [1]. In most cases it is limited to the uterus but there are reports describing malignant behavior [1]. The main clinical symptoms are amenorrhea and extensive vaginal bleeding, often associated with uterus enlargement [1, 3].

Histopathologically this tumor is predominantly composed of intermediary trophoblasts and lacks a 'biphasic' trophoblastic appearance found in choriocarcinoma [3].

During examination of gestational material, the possibility of placental site trophoblastics tumor should always be considered in cases of excessive activity of intermediary trophoblasts regardless of the presence of chorionic villi, together with determining β hCG and hPL values [4].

Case Report

The 30-year-old patient, nulliparous and with one miscarriage, was admitted to the Institute of Gynecology and Obstetrics, Clinical Center of Serbia, in December 2000 with the following diagnosis: *uterine myoma and adnexal mass.* Soon after the diagnosis, surgery was performed which included myomectomy, bilateral tumor extirpation and omentum biopsy. Intraoperative findings were as follows: bilateral adnexal tumefactions with micocervical myomatous nodes on the front wall of the uterus. During myomectomy, we separated necrotic tissue that appeared malignant, thus a pathologist was consulted. Histological findings pointed to a placental site trophoblastic tumor (histology verification Birmingham Heartlands, Department of Cellular Pathology, BHDCP) – with ectopic localization of placental implantation into the cervix and dermoid cysts on both ovaries. It was observed that many but not all tumor cells had a weakly positive immunohistochemical reaction with antibodies to hCG, but not a positive reaction to placental alk. phosphatase (PLAP) (BHDCP).

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Two months later, when the patient was hospitalized again, nuclear magnetic resonance (NMR) examination pointed to a nonhomogeneous partly cystic change in the isthmic part of the uterus above the internal mouth, partly filled with blood. NMR findings corresponded to uterine tumor. Ultrasound examination before NMR examination pointed to uterine myomas (anterior myoma with a diameter of 15 mm and posterior myoma with a diameter of 16 mm).

β-hCG values were in the range of 565 IU/l (31/01/2001) up to 280 IU/l (07/02/2001).

After consultations with the Board for Trophoblastic Diseases, excision of the described masses was performed and pathohistological findings pointed to fragments of fibromuscular stroma without the presence of covering or glandular epithelia. After surgery, the values of β-hCG were between 142 IU/l (20/02/2002) and 148 IU/l (26/02/2002). Because of the increased levels of β-hCG, it was decided to administer the first course of monochemotherapy with metotrexate from the 1st to the 5th of March 2001. After the therapy, the values of β subunits demonstrated a serial decline from 533 IU/l (05/03/2001) to 45 IU/l (19/03/2001).

NMR control examination performed on the 20th of March 2001 showed no pathological changes. By reviewing the course of treatment, it was decided to include a second course of polychemotherapy according to EMA-CO protocols, which was administered from the 22nd to the 29th of March 2001 and well tolerated by the patient. Due to the incidence of headache, we consulted a neurologist (EEG findings were regular). After polychemotherapy the values of β-hCG declined in series from 48.2 IU/l (26/03/2001) to 1.6 IU/l (25/04/2001).

By small pelvis NMR examination we determined changes in the uterus at the site where the uterine body transforms into the portio supravaginalis cervicis. In the myometrium, a limited oval mass with a dimension of 16 x 15 mm was clearly distinct with convex projection into the upper part of the uterus (hypodense). Along with this near the uterine cavity, a rough oval-shaped mass with a dimension of 15 x 17 mm was seen. Explorative curettage was performed on the 25th of April 2001 to evaluate the changes in the uterus. Pathohistological findings pointed to hyaline-changed placental site trophoblastic tumor (PSTT) after chemotherapy. β-hCG values at discharge on the 3rd of May were 0.2 IU/l. The patient was discharged for further outpatient therapy.

The third admission to the Institute was a month after the last chemotherapy for a control examination. The value of β-hCG was 2.3 IU/l. Control NMR findings reflected scar-like sequels in the ischemic part of the uterus. The patient was discharged in good general condition for further outpatient therapy.

During the fourth admission, four months after the second surgery, we established the increased values of β-hCG totaling 558 IU/l and seven days later 1180 IU/l. X-rays of the lungs and abdominal ECHO showed no pathological changes. After reviewing beta hCG and NMR findings, it was decided that hysterectomy with bilateral conservation of the adnexae be performed. The patient however had sudden extensive vaginal bleeding, thus subtotal hysterectomy with bilateral conservation of the adnexae was carried out (14/09/2001). Postoperative values of β-hCG were 17 and then 4 IU/l. The patient was discharged in good general condition.

The fifth hospitalization was three years after the hysterectomy (30/06/2004) because of minor vaginal bleeding, and gynecological examination revealed a visible tumefaction on the cervix with a diameter of 1 cm and yellow-whitish color. After the biopsy and cervical canal curettage, histological examination pointed to a placental site trophoblastic tumor. With the fourth laparotomy on the 7th of July 2004, we removed the cervix and final pathohistological findings confirmed a PSTT. The postoperative course was regular and the patient was discharged on the 15th of July 2004. The values of beta subunits during the last hospitalization declined in series from 14.9 IU/l (22/06/2004) to 1.5 IU/l (12/07/2004).

At the last control in March 2005, the values of β-hCG were 0.9 IU/l.

Discussion and Conclusion

Placental site trophoblastic tumor presents a rare form of gestational trophoblastic disease, usually limited to the uterus, while metastases are present in 10% of the cases [5]. The tumor is preceded by a normal delivery, hydatiform mole or abortion as was the case in our patient [6]. An enlarged uterus and vaginal bleeding are clinical symptoms of PSTT.

Considering the fact that this tumor is present in the female population, preserving fertility during the reproductive period is very important [7]. Local excision of the tumor is keynote for therapy, thus recommended by many authors as a conservative surgery for localized changes in the uterus [7]. During our patient's second hospitalization, after the previously diagnosed PSTT, we performed excision of the uterine masses observed by NMR which histologically corresponded to stroma without covering or glandular epithelia.

Placental site trophoblastic tumor sometimes cannot be seen by sonography. Due to its aggressive nature and difficult clinical diagnosis, NMR examination is useful in the evaluation of this tumor [8].

In PSTT patients, NMR findings point to smaller focal masses invading the myometrium. NMR findings are non-specific and the diagnosis is more precise by biopsy, as was done in our case [9].

In patients who have had PSTTs, regular sonography, NMR and lung X-ray findings are often found, although by following the levels of beta subunits excessive activity of the syncytio- and cytotrophoblasts may be detected, speaking in favor of the incidence of this hormonally active tumor as seen in our case during the fourth hospitalization [8].

In cases of disease limited to the uterus, the therapy of choice is hysterectomy [10]. Cases with metastases necessitate a combination of therapy and surgery with chemotherapy (cytoreductive surgery and adjuvant chemotherapy) [11].

The sensitivity of PSTT to current chemotherapy protocols is different. The EMA-CO protocol is mainly used and was also applied to our patient, although clinical experience has shown that cisplatin should be used with protocols that use etoposide, methotrexate and actinomycin-D [12].

PSTT is often resistant to chemotherapy and patients with metastases have a poor prognosis in spite of aggressive chemotherapy [13, 14]. Multiagent chemotherapy treatment may lead to long-term remission even in patients with metastatic recurrent PSTT [14, 15].

FIGO stage is the most important prognostic factor [16]. In the case of our patient the disease was classified as FIGO Stage I, and the prognosis score on the FIGO/WHO scoring system was 4, i.e., she belonged to the low-risk group.

A long period between the last pregnancy and clinical manifestation of disease is the worst prognostic factor, and the outcome is worse in patients with more than a two-year interval between the last pregnancy and the first signs of the disease [16].

PSTT has a different clinical manifestation and lack of β-hCG sensitivity is a prediction of spreading [16]. The administration of high-dose multiagent therapy, early surgery and application of up-to-date visualization techniques are the basis for the clinical therapy of PSTT [17].

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