Case Report

Placental Site Trophoblastic Tumor — A Case Report

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Abstract

Placental site Trophoblastic tumor (PSTT) is considered to be rarest of the gestational Trophoblastic neoplasms. It represents a neoplastic transformation of intermediate Trophoblastic cells that normally play a critical role in implantation and occurs in diverse clinical settings ranging from normal pregnancies to molar and ectopic pregnancies including abortions. We present such a case for its rarity.

Keywords

Placental site Trophoblastic tumor

Introduction

Placental site Trophoblastic tumor (PSTT) is usually confined to uterus and 15-20% behave in a malignant manner[1]. Though several trophoblastic lesions and tumor enter in the differential diagnosis, histopathological examination (HPE) of uterus along with the clinical features helps in reaching a final diagnosis. Hysterectomy is the treatment of choice with or without chemotherapy. Progress after surgery should be monitored by regular estimation of Human Placental Lactogenic (HPL) hormone and Human Chorionic Gonadotropin (HCG) hormone.

Case Report

A 22-year old female was admitted in the hospital with history of sudden, profuse, vaginal bleeding with passage of blood clots for two days. She had one full term normal delivery with a male child of two years and one induced abortion of four months' gestation. She had only one menstrual period following her abortion. Since then she had been bleeding on and off with three episodes of severe bleeding leading to hospitalization. On investigation the following parameters were noted: Hb-6gms%,TLC-9500/cumm, DLC N70%, L25%, E4%, M1%. Her coagulation profile was normal. HCG-was not detected. Ultrasonography (USG) showed a focal ill-defined hypoechoic lesion measuring 20 × 11 × 8 mm in size along posterolateral wall of the fundus. Collection of blood was noted in the uterine cavity. Abdominal hysterectomy was done and the post-operative period was uneventful.

Pathological Findings: A specimen of uterus with cervix measuring 9 × 6 × 3 cm was received. On cut section the endometrial cavity showed a growth measuring 4 × 3 cm with hemorrhagic areas (**Fig. 1**). HPE showed a tumour composed predominantly of intermediate trophoblasts arranged in clusters, sheets and insinuating between the muscle fibres (**Fig. 2**) with the invasion of the decidua. The cells are large to polygonal with large, round to oval vesicular nuclei having abundant eosinophilic cytoplasm. Multinucleated cytotrophoblast and a few syncitiotrophoblastic cells were seen along with areas of fibrinoid changes and thin walled ectatic blood vessels. A final diagnosis of Placental Site Trophoblastic Tumour (PSTT) was made.

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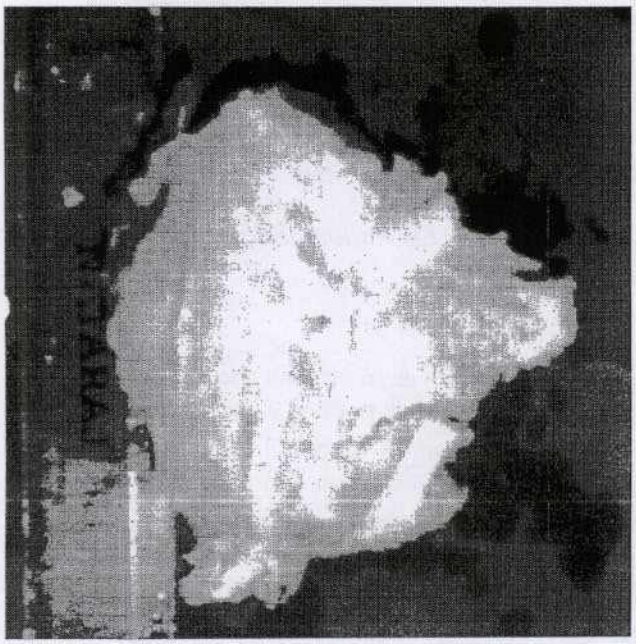

Fig. 1
Gross photograph of the uterus along with the tumour

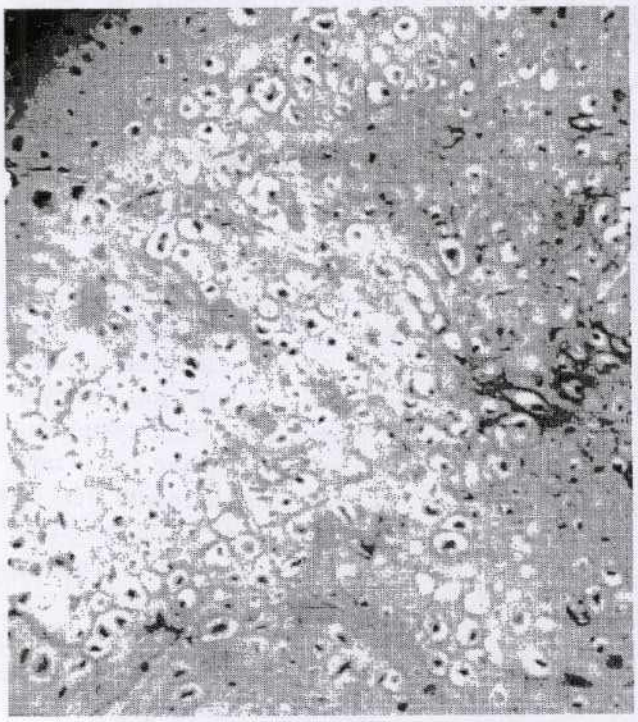

Fig. 2
Photomicrograph showing myometrial invasion by intermediate trophoblast (H & E, x240)

Discussion

PSTT is uncommon, but the overall frequency is difficult to assess because of the paucity of the recorded cases. Review of literature shows that less than 100 cases were reported till 2000[2]. PSTT is considered as a neoplastic proliferation of intermediate trophoblasts that invades the myometrium at the placental site after pregnancy. In 95% of cases the tumour follows a normal pregnancy and only 5% follow a hydatidiform mole[3]. As in our case, PSTT usually develops after second or subsequent pregnancies rather than after the first gestation and in the patients present with irregular heavy bleeding or with amenorrhoea.

Diseases of pregnancy and pathologic conditions of the placenta are important causes of intrauterine or prenatal death, congenital malformations, intrauterine growth retardation, and maternal death, with a great deal of morbidity for both the mother and the child.

Grossly, the uterus is diffusely or focally affected by exophytic or endophytic growth which may reach the serosa. Our patient had predominantly an endophytic growth which did not reach the serosa. HPE showed the characteristic features of PSTT, with the intermediate trophoblastic tissue insinuating between the smooth muscle fibres and invading the decidua. Features suggestive of aggressive behaviour of PSTT include high mitotic count along with deep myometrial invasion[3]. In benign PSTT mean mitotic rate has been 2 mitotic figures / 10 HPF and malignant lesions generally have more than 5 mitotic figures/10 HPF. Our case had none of the above features and showed occasional mitosis and hence it is likely to behave in a benign manner. The differential diagnosis[4] of PSTT includes choriocarcinoma, exaggerated placental site reaction and placental site nodule. This lesion differs from choriocarcinoma in the absence of cytotrophoblastic elements and in the low level of HCG production. PSTTs are locally invasive, but many are self-limited and subject to cure by curettage. Malignant variants, however, have been reported; they are distinguished by a high mitotic index, extreme cellularity, extensive necrosis, local spread, or even widespread metastases[1]. About 10% result in disseminated metastases and death[2]. Hysterectomy is the treatment of choice[4]. Long term follow up is essential as PSTT may progress after years of remission with around 15 to 20%[5] PSTTs behaving in a malignant manner. Progress after

surgery is regularly monitored by regular estimation of HPL hormone. Relative to their mass, these tumours produce small amounts of HCG and HPL and they tend to remain confined to the uterus, metastasizing late in their course. In contrast to other trophoblastic tumours, PSTTs, are relatively insensitive to chemotherapy[1]. A prognostic scoring system proposed by the World Health Organization (WHO)[5] based on age, antecedent pregnancy, time interval, HCG level ABO groups, largest tumours size, site of metastases, number of metastases and prior chemotherapy reliably predicts the potential for resistance to chemotherapy. According to WHO[5] a total score of <4, is identified as low risk; a score of 5-7 as middle risk; and a score of ≥ 8 as high risk. When the prognostic score is higher than 7, the patient is categorized as high risk and requires intensive combination chemotherapy to achieve remission.

Optimal management of persistent Gestational Trophoblastic Tumour (GTT) requires a thorough assessment of the extent of the disease prior to the initiation of treatment[4]. All patients with persistent GTT, including PSTTs, should undergo a careful pretreatment evaluation, including the complete history and physical examination, measurement of serum HCG, HPL value, hepatic, thyroid, and renal function tests and determination of baseline peripheral white blood cell and platelet counts[3]. The metastatic workup should include the chest radiograph or computed tomography (CT) scan, USG or CT scan of the abdomen and pelvis, CT or magnetic resonance imaging (MRI) scan of the head. Our patient had a low prognostic score and was treated with hysterectomy and she is normal in the short follow up period of 6 months.

Conclusion

Our case report highlights the fact that although PSTTs most commonly follow a molar pregnancy, they may ensue even after any gestational event, including therapeutic or spontaneous abortions, ectopic pregnancies, or term pregnancies.

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