Case Reports

Exaggerated placental site reaction detected during caesarean delivery: a case report

O. Akbayır[1], I. Alkis[1], A. Corbacioglu[1], A. Ekiz[1], A. Akca[1], S. Cekic[2]

[1]Department of Obstetrics and Gynecology, Kanuni Sultan Suleyman Research and Teaching Hospital
[2]Department of Pathology, Bakirkoy Women's and Children's Research and Teaching Hospital, Istanbul (Turkey)

Summary

Exaggerated placental site (EPS) reaction is an exuberant physiologic process in which intermediate trophoblasts infiltrate the underlying endometrium and myometrium at the implantation site. During a caesarean section, we noted a polypoid well shaped smooth lesion, about 3 cm in diameter on the anterior wall of the uterus apart from the placenta. The histopathologic examination revealed an exuberant proliferation of trophoblastic cells in the placental site, a low Ki-67 labelling index and the absence of mitotic activity. Distinguishing EPS reaction from the other intermediate trophoblastic tumours is critical, as the latter may likely involve surgical intervention and/or chemotherapy, although no specific treatment and follow-up is required for EPS reaction. It is necessary to be aware of this pathology and take biopsies from suspicious lesions in the placental site for pathologic examination.

Key words: Exaggerated site tumour; Caesarean section; Intermediate trophoblast.

Introduction

In the human placenta, the trophoblasts that grow associated with chorionic villi are referred to as villous trophoblasts, whereas the trophoblasts in all other locations are termed as extravillous trophoblasts. The extravillous trophoblast that infiltrates the decidua, myometrium and spiral arteries of the placental site is almost exclusively composed of intermediate trophoblasts [1, 2].

In addition to the trophoblastic neoplasms such as hydatiform mole and choriocarcinoma, benign and malign proliferations of intermediate trophoblasts have been identified recently. A spectrum of lesions derived from the intermediate trophoblasts have been described as placental site nodule or plaque, exaggerated placental site (EPS) reaction, placental site trophoblastic tumour, and epithelioid trophoblastic tumour [1, 3]. The definition of the lesions of intermediate trophoblasts is relatively new, therefore, their behaviour has not been well characterised [1].

EPS reaction is an exuberant physiologic process in which intermediate trophoblasts infiltrate the underlying endometrium and myometrium at the implantation site. However, the normal structure of endometrial glands, myometrium, and vessels is usually maintained [4, 5]. Reports describing the clinical course of EPS, especially following a term delivery are very rare.

We hereby present a case of EPS reaction that was detected during caesarean section, including its histopathologic features and clinical course.

Case Report

A 24-year-old woman, gravida 2, para 1, underwent a caesarean section at 39 weeks' gestation in elective conditions because of a previous caesarean delivery. After the removal of the placenta, a polypoid well-shaped smooth lesion, about 3 cm in diameter was noticed on the anterior wall of the uterus apart from the placenta. The lesion was removed and sent for histopathologic examination (Figure 1). There were no intraoperative or postoperative complications, especially related to haemorrhage.

The pathologic findings after examination of the specimen revealed an intermediate trophoblastic cell aggregation among the superficial myometrium and desidua. At the cytologic level, the cells had large eosinophilic cytoplasm and hyperchromatic nuclei with variable shape and size. Intermediate trophoblasts were surrounded by calcification areas and hyaline matrix. Any mitotic activity or necrotic change was not recognised. These microscopic findings were not adequate for the differential diagnosis of EPS reaction from a placental site trophoblastic tumour. Immunohistochemical examination with Ki-67 showed that there was no staining with Ki-67 on intermediate trophoblastic cells.

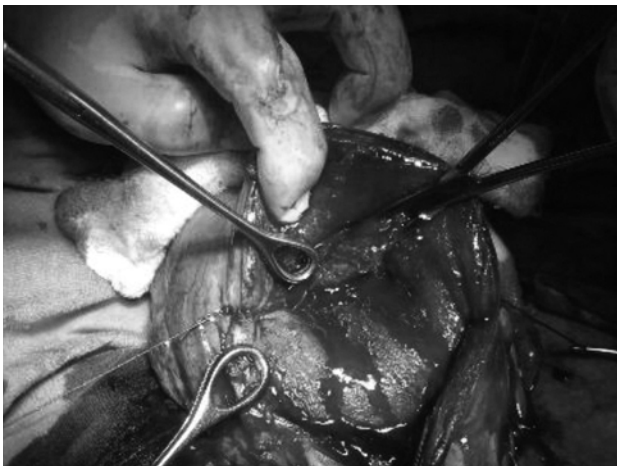

Figure 1. — Polypoid well shaped smooth lesion on the anterior wall of the uterus.

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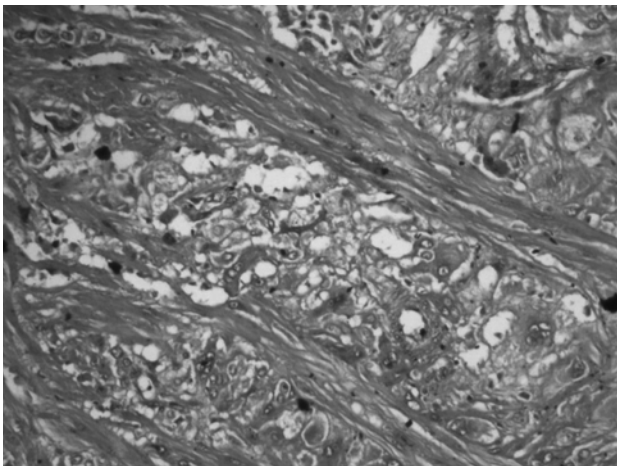

Figure 2. — Intermediate trophoblastic cell aggregation among the superficial myometrium and desidua.

The exuberant proliferation of trophoblastic cells in the placental site with a low Ki-67 labelling index and the absence of mitotic activity indicated the diagnosis of EPS reaction (Figure 2).

Discussion

EPS is an exuberant infiltration of endometrium and myometrium by intermediate trophoblasts at the implantation site [5]. However, the overall architecture of the placental site is not disturbed. Endometrial glands and spiral arteries may be completely engulfed by trophoblastic cells, but there is no necrosis or mitotic activity. Also, the associated placentas are unremarkable [1].

On microscopic examination, EPS has an infiltrative border and is composed predominantly of mononucleate and a variable number of multinucleated intermediate trophoblastic cells. These cells are large with pleomorphic nuclei and abundant eosinophilic cytoplasm that diffusely infiltrate the endomyometrium and invade the spiral arteries. Immunohistochemical studies show that the trophoblastic cells in EPS are diffusely positive for human placental lactogen (hPL), and the Ki-67 labeling index is nearly zero [1, 6].

The distinction between a normal placental-site trophoblastic tumour (PSTT) and EPS is somewhat arbitrary, because there is no reliable data quantifying the amount and extent of trophoblastic infiltration during different stages of normal gestation [5]. Furthermeore, EPS can be confused with the other intermediate trophoblastic tumours and tumour-like lesions [1, 4, 7]. Distinguishing EPS reaction from the other intermediate tumours is critical, as the latter may likely involve surgical intervention and/or chemotherapy. A PSTT is the most important differential diagnosis of EPS as both lesions are characterised by an exuberant infiltration of implantation site by intermediate trophoblastic cells. The microscopic features that support the diagnosis of PSTT include confluent masses of throphoblastic cells, unequivocal mitotic figures, the absence of chorionic villi, and elevated Ki-67 labeling index (14% ± 6.9%) [1, 5]. On the contrary, as with the histologic findings in our case, the exuberant proliferation of trophoblastic cells in a placental site with no mitotic activity and a low Ki-67 labelling index supports the diagnosis of EPS reaction. In cases where the diagnosis in not certain by pathologic examination, a follow-up with serum β-hCG concentration should be performed. A plateau or elevation in the β-hCG level require further evaluation, even a hysterectomy [1, 5, 7].

EPS reaction may develop secondary to a normal pregnancy, abortion, ectopic pregnancy, and hydatiform mole [5, 8]. It is a physiological process that resolves spontaneously after curettage or removal from the uterus. No specific treatment or follow-up is required. The reports describing clinical course of EPS are uncommon, but it is shown that an EPS which is not associated with hydatiform mole does not carry an increased risk of persistant gestational trophoblastic disease [8]. We followed up our case with β-hCG and ultrasound during the six postoperative months, and there was no evidence of recurrence or persistence.

In recent years, in spite of many articles published by pathologists, only a few case reports have been written by clinicians evaluating this subject. This is the first case report in the literature in which an EPS reaction is detected during a caesarean delivery.

More reports and studies are required regarding EPS reaction because the awareness of the pathophysiology and clinical course of this lesion is important, especially in reproductive-age women who desire further pregnancies. We strongly advise all gynecologists to inspect the placental site and take biopsies from suspicious lesions for pathologic examination in order to obtain more information about this pathology.

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Address reprint requests to:
İ. ALKIS, M.D.
Istanbul Kamuni Sultan Suleyman
Research and Teaching Hospital
Turgut Ozal Caddesi No. 1
Halkali/Istanbul (Turkey)
e-mail: ismetalkis@hotmail.com