Case Report

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Choriocarcinoma within the third trimester placenta – a case report

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A small focus of choriocarcinoma has been incidentally found within an otherwise normal, third trimester placenta which was sent to the pathomorphological examination because of the stillbirth of the child at 31st week of gestation. The autopsy of the child was not performed. Macroscopically focus of choriocarcinoma has looked as a small infarct and was indistinguishable from the second lesion, which was microscopically confirmed to be a real infarct. β-hCG level was increased at the time of delivery, but come back to normal very quickly. There were no metastases in the mother at the time of delivery and the follow-up did not show any evidence of metastatic disease either.

Introduction

Choriocarcinoma, the most aggressive form of gestational trophoblastic disease, usually follows a complete hydatiform mole. In rare instances it could also follow a partial mole, ectopic pregnancy, abortion or develop after a normal, term pregnancy [11]. Very rarely choriocarcinoma develops in otherwise normal placenta during pregnancy and is associated with widespread maternal and sometimes also fetal metastases [6, 12]. Very rarely choriocarcinoma was found incidentally in term or near term placenta during routine, histological examination carried out after delivery [7, 9, 10]. Such choriocarcinomas were usually single, small lesions, which macroscopically mimicked an infarct and without special care could be easily overlooked in routine, pathological examination. The patients with incidentally discovered intraplacental choriocarcinoma require special management consisting of periodical β-HCG measurement for at least 6 months after delivery and intensive examination for metastatic disease. That is why all placentas should be sent for pathomorphological examination.

Clinical history

A 40-year old Caucasian woman, gravida 8, delivered in the 31-st week of a previously uncomplicated pregnancy a stillborn, male infant with body weight of 2315g. The infant was macroscopically without any abnormalities. The autopsy of the child was not performed. The placenta was sent for a histological examination and the small intraplacental choriocarcinoma measuring 3cm in diameter was found.

The postpartum course of the mother was unremarkable. β- hCG level at the day of delivery was not measured, it was examined three days later and was as high as 1094 IU/l. There was a quick decline of its level and within three weeks it came to level 14,5 IU/l. The mother was examined for metastasis: X-ray of the chest and USG of the abdominal cavity did not reveal any evidence of metastatic disease. Because no metastases were found the mother was not given any chemotherapy.

The previous seven pregnancies had terminated uneventfully, with normal delivery of healthy children (in one twins were born). All eight children were alive and in good health at the moment of diagnosis of choriocarcinoma in their mother.

Macroscopic examination of the placenta

On gross examination the placenta was discoid in appearance and measured 14×12×3 cm. It was dark-red in colour. The basal surface of the placenta was complete. The umbilical cord was centrally inserted within the placenta and measured 30cm. Macroscopically three vessels were visible on cross section of umbilical cord. The placental membranes were complete, grey and mat. Together they weighted 505g.

On approximately 1 cm-thick cut sections of the placenta tissue two yellow-grey, friable lesions looking like

fresh infarcts, measuring 1,5 and 3cm were visible. Both lesions were well and sharply delineated and circumscribed by normally looking, dark-red placental parenchyma. The total volume of infarcts compromised less than 5% of villous tissue. Representative samples of normally looking placental regions as well as from both necrotic areas were taken for microscopic examination.

Microscopic findings

Histological examination of two areas suspected to be infarcts revealed that the smaller one (1,5 cm) was an old necrotic area without any special features.

The bigger one (3 cm) consisted of central necrosis with a narrow rim of viable, malignant trofoblastic cells at the periphery of the area (Fig. 1), surrounded by regularly developed placental villi. Two types of malignant proliferating cells were visible: multinucleated syncytiotrophoblast and uninucleated cytotrophoblast cells. They grown irregularly and sometimes formed bigger masses. The cells had big, pleomorphic nuclei that differ considerably in size and shape, increased nuclear-cytoplasmic ratio and prominent, sometimes numerous nucleoli. (Fig. 2) Some mitotic figures were visible. There was a relatively sharp border between the normal placental villi and neoplastic area, the same as the transition between malignant trophoblastic cells and necrotic area in the centre. No evidence of vascular invasion or invasion of villous stroma by neoplastic trophoblast was found. The histological picture was consistent with choriocarcinoma.

Immunohistochemical studies confirmed the trofoblastic origin of the malignant cells – they stained positive for β-hCG, pan-CK and PLAP. All three markers were positive in normal placental villi as well as in neoplastic tissue, however the immunoreactivity in neoplastic cells was weaker

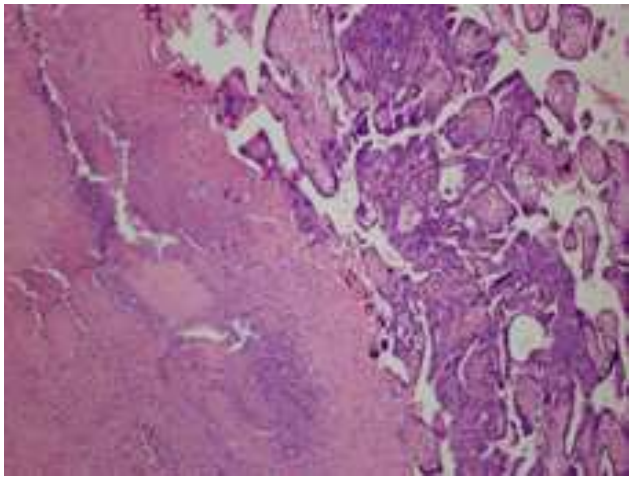

Fig. 1.

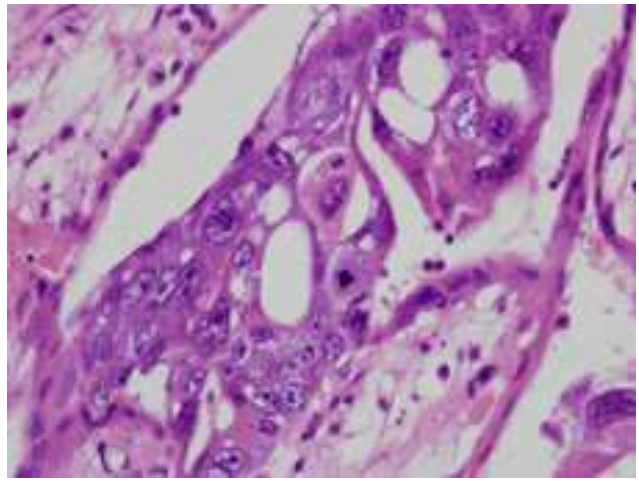

Fig. 2.

than in normal villi. The rest of the placenta was built of normally looking villi.

On histological examination of umbilical cord three vessels were visible. The placental membranes were normal, with focal signs of putrefy. There were no nucleated red blood cells in villous vessels.

Discussion

Most cases of gestational choriocarcinoma follow a complete or partial hydatiform mole, however a small percentage of it arises during normal pregnancy as a small focus within otherwise normal placenta. Intraplacental choriocarcinoma was first reported in 1963 [7].

Intraplacental choriocarcinoma is a very rare entity, but if it occurs it can give rise to both maternal and fetal metastatic disease during pregnancy [6, 12]. It can also be silent until delivery and metastases can be discovered a few weeks or even month after delivery [6, 10]. It is also possible that intraplacental choriocarcinoma is a source of at least some of intrauterine choriocarcinomas which follow a term pregnancy.

Almost all reported and described intraplacental choriocarcinoma have been small lesions, measuring not more than 5cm in diameter [4, 5, 6, 7,10], which have been discovered incidentally during routine histological examination of the placenta. They all were yellow-grey in colour and have been macroscopically described as areas of an old infarcts in otherwise unremarkably looking placentas. Even in cases with widespread maternal metastatic disease the primary focus in the placenta was very small and unremarkable.

In many cases the diagnosis of choriocarcinoma have been established first after histological examination of the placenta [1, 2, 3, 7, 8, 9, 10]. That is why it seems to be

proper to send all the placentas for pathomorphological examination, especially when the areas of necrosis are macroscopically visible. Pathomorphologists should sample all, even small areas looking different than normal placentas. Such procedure enables finding small intraplacental choriocarcinoma and give rise to the proper management of the patient: intensive examination for metastases and serial β-hCG level measurements in mother and child (if one is alive), especially if they are asymptomatic [1]. It is possible that some small choriocarcinoma within otherwise normal, term placentas are just overlooked if the placenta is not histologically examined.

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