



Placental Teratoma, An Unexpected Diagnosis

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Abstract

The placental teratoma is a rare and benign lesion, with the first case published by MORVILLE in 1925. It is composed of various mature tissues and usually located at the surface of the parietal membranes between the amnion and chorion. Its histogenesis is still debated. This lesion is most often discovered incidentally since it does not imply complications during pregnancy. The acardiac fetus and the stuck twin fetus are two major differential diagnoses. We report the case of a placental teratoma localized to the parietal membranes of a placenta and discuss the differential diagnosis of this exceptional pathology. The fetus acardiac hypothesis has been ruled out due to the absence of an umbilical cord and absence of axial organization of the bone structures. The presence of differentiated tissue within the membranes could suggest a papery fetus, but early ultrasound data refuted this hypothesis. The diagnosis of placental teratoma was therefore retained.

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Keywords: Teratoma; Placenta; Acardiac fetus; Stuck twin fetus.

Introduction

Placental tumor and pseudo tumor are rare pathologies dominated by trophoblastic tumors (hydatidiform mole, chorio-carcinoma) and chorangiomas [1,8]. It is a rare benign tumour non trophoblastic, thought to arise from germ cells, which migrate from the dorsal wall of the yolk sac and these tumours contain elements derived from multiple germ cell layers [11,12]. The mature teratome is a benign germ cell tumor composed of various tissues representing derivatives of one or more embryological layers (ectoderm, mesoderm and endoderm) made exclusively from adult or fetal tissues, on the other hand the immature teratoma is a malignant tumor comprising an embryonic component immature especially neuroectodermal. Benign mature teratoma is the only variant described in the placenta [13]. We report the case of a placental teratoma localized to the parietal membranes of a placenta and discuss the differential diagnosis of this exceptional pathology.

Observation

A pregnant woman, 34 years old with a primigravida nulliparus, with a history of endometriosis, was admitted to gynecology emergency at 32 weeks and 6 days of amenorrhea for intrauterine growth retardation. Ultrasound checks were already performed at 8 and 12 weeks of amenorrhea and showed a single egg sac. A cesarean was indicated at 34 weeks of amenorrhea and 1 day for fetal heart rhythm abnormalities such as slowdowns and resulted in the birth of a male child weighing 1370g without any detectable malformation. The Apgar (eponym referring to Virginia Apgar sin 1952) scores were successively 10, 10 and 10. Postnatal suites after birth were normal for mother and child.



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Gross examination of placenta

The placenta was sent fresh to the anatomy pathology laboratory and weighed 275g. It consisted of a 15 X 12 cm disc, a 22 cm long velamentous umbilical cord. The membranes were thin and translucent. They contained a nodule 3 cm in diameter initially interpreted to be an aberrant cotyledon. This nodule was not attached to the placental disc by any identifiable vessel or umbilical cord (Figure 1).

After fixation in 10% formalin, systematic sections were taken from the membranes, the cord, the placental disc and the nodule.

Histologically, examination of the membranes did not show any sign of chorioamnionitis, the placental disc showed deposits of fibrin in the intervillous space and excess nuclear clusters



Figure 1: Macroscopic section of the placenta with the teratoma.

(a): Disc, (b): Membrane (c): nodule.

Discussion

Placental teratoma was first described by Morville in 1925 [1]. Placental teratomas are extremely rare, with less than 30 cases reported in the world literature [11]. The lesion is discovered by chance, of a benign nature and does not pose any problem for the progress of the pregnancy. Thus most births are at term to eutrophic new-borns. The diagnosis is confirmed macroscopically with an aberrant nodule without cord or vessels and microscopically a multitissular structure [6,8], most often localized at the level of the dorsal plate between the chorion and the amnion more rarely in the cord [3,9]. The origin of placental teratoma is obscure; it originates from the abnormal migration of embryonic germ cells. These cells migrate through the umbilical cord before arriving in the placenta [12]

The differential diagnosis arises with the fetus papyraceus and the acardiac fetus. The papyraceus corresponds to a twin having involuted early and reduced to a mummified structure contiguous in the parietal membranes. The diagnosis is usually made early, on ultrasound in the first trimester. The histological study shows mummified tissues that have retained an organoid organization, which distinguishes it from the placental teratoma in which the tissues are well preserved, without organization [8]. Acardiac fetuses are found in monochorial, monoamniotic twin pregnancies. The pathogenesis is poorly understood, but it results in the existence of a fetus without a cardiac tube and perfused by its twin due to the existence of a shunt between

at the level of the syncytiotrophoblast suggesting an ischemic cause for intra-growth retardation uterine. The nodule corresponded to a multitissular structure coated by a keratinizing squamous epithelium to which was annexed sweat and sebaceous glands. This coating limited tissue formation containing heterogeneous tissues: Adipose, smooth muscle, digestive glandular epithelium and cartilage. These tissues were arranged in a rudimentary fashion and in particular there was no axial organization noted (Figure 2). Absence of immature tissue component.

The fetus acardiac hypothesis has been ruled out due to the absence of an umbilical cord and absence of axial organization of the bone structures. The presence of differentiated tissue within the membranes could suggest a papyraceus fetus, but early ultrasound data refuted this hypothesis. The diagnosis of placental teratoma was therefore retained.

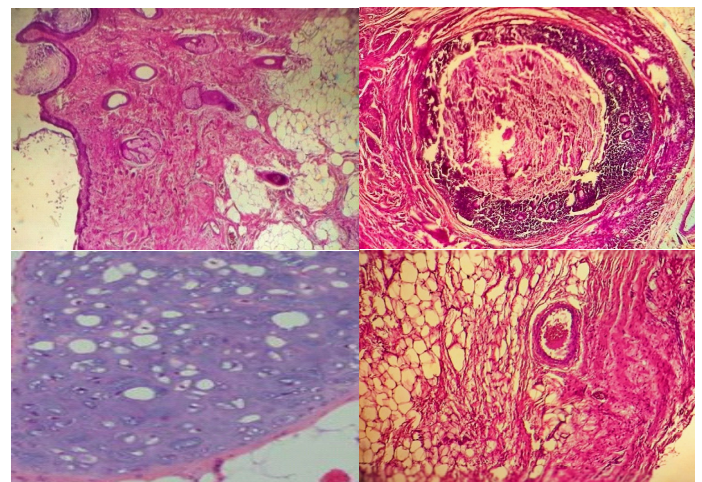


Figure 2: Microscopic section: (a): Epidermis with cutaneous appendages. (b): Digestive glandular epithelium. (c): Cartilage tissue. (d): Fat and smooth muscle tissues.

the two umbilical cords. The acardiac twin involutes early and results in a rudimentary formation made up of heterologous tissues and osseous structures which reproduce a more or less summary skeleton (spine and the base of the skull). This skeletal organization is totally lacking in placental teratoma [2,4,5,8,9].

The histogenesis of placental teratoma is still debated, with some authors believing that the teratoma may arise from a blastomere due to parthenogenesis development of germ cells in gonadal or extra gonadal sites [3,4,9]. More recently, the possibility of differentiation from the omphalo-mesenteric duct has been mentioned [3,4]. However, the most commonly accepted hypothesis is that of a migration error of the primordial germ cells: Gonoblasts could be deviated during their migration from the allantoic wall to the genital crest passing through the dorsal mesentery and would then move towards the umbilical cord or the placenta between the amnion and the cord [3,4,9], which seems to correspond well to our observation.

Conclusion

Placental teratoma is a benign lesion that has no impact on the course of pregnancy, its histogenesis is poorly understood and its diagnosis can be evoked on ultrasound but can only be confirmed by the histopathology study.

Conflict of interest

I declare that there is no conflict of interest

Contribution

This research work was designed, organized, written, edited and approved by Dr Zakaria MERAD

Ethics approval and consent to participate

This study was conducted in accordance with the fundamental principles of the declaration of Helsinki.

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