A SERIES OF TWO RARE CASES OF FETUS PAPYRACEUS

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A SERIES OF TWO RARE CASES OF FETUS PAPYRACEUS (Abstract): The “vanishing twin” phenomenon occurs when a multiple pregnancy is identified sonographically during the first 15 weeks of pregnancy, but the outcome is a single fetus. If one twin dies and the gestation of the other twin continues, the dead fetus may become a “fetus papyraceus”. Although twin pregnancy is common, fetus papyraceus pregnancies are a very rare finding. We present two cases of placental examination revealing a focal tumor mass, microscopically identified as fetus papyraceus. Necrotic organs of the fetus papyraceus were identified in the placental tumor mass. Key words: FETUS PAPYRACEUS, TWIN PREGNANCY

INTRODUCTION
The “vanishing twin” phenomenon occurs when a multiple pregnancy is identified sonographically during the first 15 weeks of pregnancy, but the outcome is a single fetus (1). It is not uncommon for one twin to die before birth. If the pregnancy continues undisturbed, this fetus may disappear if it is very young. It may become flattened (fetus compressus, fetus papyraceus), or, if very large, it may macerate, lose much of its fluid, and become misshapen (2). Fetus papyraceus can occur in both mono and multichorionic gestations and chorionicity can usually be determined (3). A fetus papyraceus may be so small and compressed that it is difficult to identify on gross inspection. It may appear as a flattened disk of macerated tissue in the membranes of the remaining twin. Occasionally, just one thin plaque is identifiable, with a pigmented macule representing the eye as the only clue to the diagnosis (4). According to the literature, the surviving twin is at risk for many abnormalities, including intestinal atresia, skin defects, amputations, gastroschisis, and especially brain damage. Monochorionic twins appear to be at greatest risk (5).

MATERIALS AND METHODS
The study was based on two incidental findings during routine macroscopic examination of placentas, in the Pathology Department of Cluj Emergency County Hospital. Placentas from cases known with maternal or fetal distress are examined macroscopically and microscopically in our pathology department.

Case 1 refers to a 38-year-old gravida with twin pregnancy, with the death of one of the fetuses diagnosed sonographically in the 17th week of pregnancy. The other fetus was normally delivered, at 40 weeks, with no other complications. Case 2 refers to a 34-year-old woman who had not been properly investigated during pregnancy (without ultrasound investigations), who was admitted to the hospital in labor and gave birth to a healthy newborn very shortly after. Due to the short time that passed between admittance and childbirth, no other investigations besides a cardiotocogram were performed.
Fig. 1. A – macroscopy of Case 1 (pp – placental parenchyma; uc – umbilical cord; FP – fetus papyraceus); B – macroscopy of Case 2, showing the tumor-like mass in the placenta (FP – fetus papyraceus; r – ribs dissected from the tumor-like mass); C – thoracic section (HE, 40X; lu – lungs; h – heart); D – thoraco-abdominal section (HE, 40X; ad – adrenal gland; d – diaphragm; lu – lung).

Fig. 2. A – adrenal gland (MT, 40X); B – skeletal muscle surrounding a pigmented cavity, probably the orbit (HE, 40X); C – trabecular bone with bone marrow spaces (MT, 100X); D, E – limb sections showing bone and skeletal muscle tissue (HE and MT, 40X); F – sagittal section showing the metameric distribution of the vertebrae (HE, 40X).
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To enhance microscopic contrast, Masson’s trichrome (MT) stain was performed on all sections, in addition to hematoxylin-eosin (HE) stain.

Although the fetuses were very compressed and misshapen, some tissues and organs could be identified in the necrotic mass, based on their histological shadows.

RESULTS

Macroscopically, both cases presented with a firm, tumor-like mass in the placental parenchyma (fig. 1A, 1B). Histological sections were performed from the masses and from the adjacent placenta.

Figure 1C displays sections from the thoracic level of the fetus with identification of some organs, including the lungs and the heart. Figure 1D illustrates the relationship between a lung, the diaphragm, and an adrenal gland (on a thoraco-abdominal section).

Figure 2 exhibits various tissues identified using hematoxylin-eosin and Masson’s trichrome stains, including adrenal gland, an eye and various parts of the skeletal system. An interesting finding was provided by the analysis of the placenta, which, in both cases, exhibited chorangiosis, defined by the presence of at least 10 blood vessels in at least 10 chorionic villi on at least 10 low power microscopic fields (5). However, the microscopic examination of the placentas revealed no further findings (fig. 3).

CONCLUSIONS

Although a rare finding, fetus papyraceus is a distinct entity that must be recognized when performing a placental examination. In addition to the pathological level, a fetus papyraceus should be recognized sonographically, because of the potential complications involving the surviving fetus.
REFERENCES


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