J. Fetal Med. (March 2021) 8:71–73
https://doi.org/10.1007/s40556-020-00277-0

BRIEF COMMUNICATION

Surgical Removal of a Gigantic Retroperitoneal Fetus in Fetu: One Case Report

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Received: 9 September 2020 / Accepted: 10 November 2020 / Published online: 2 January 2021

Abstract Fetus in fetu (FIF) is a rare congenital disorder. At present, the mechanism of FIF has not been fully elucidated. Clinically, the most common site of FIF is the abdominal cavity, while other sites have also been reported, such as from the scrotum to the intracranial space. Surgery is the best treatment for FIF. Our case is a 1-month-old girl. The mother's ultrasound examination at 36 weeks of gestation revealed that the solid part of the abdominal mass showed strong echoes of the limbs, and the fetus was about 40 mm long. The diagnosis was a parasitic fetus in the fetus. The child was admitted to our hospital for mass resection 1 month after birth, and the tumor was confirmed as a parasitic fetus by postoperative pathology. At present, the patient has had no recurrence after surgery for 5 years. Adequate preoperative evaluation combined with radical surgical resection is an effective strategy for the treatment of parasitic fetuses.

Keywords Fetus in fetu · Teratoma · Retroperitoneal · Surgical treatment

Abbreviation
FIF Fetus in fetu

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Introduction

Fetus in fetu (FIF) refers to a complete fetus or a part of fetus within another fetus [1, 2]. These are also called parasitic fetuses. Clinically, it is more common in infants and young children. It has been reported that the incidence rate is about 1/500,000, and most cases are in the form of case reports [3]. Parasitic fetuses are divided into homozygous parasitic and fraternal parasitic [4]. Because their predominant sites are retroperitoneum and abdominal cavity, they are manifested by gradually increasing abdominal masses which often need to be differentiated from abdominal tumors. Newborns mostly manifest by obvious swelling of the abdomen, not feeding much, and occasionally reluctant to feed.

According to the characteristics of parasitic fetus cases reported in China, there are the following characteristics: 1. Low incidence rate, more common in infants and young children; 2. The parasitic site is centripetal; 3. Intraperitoneal and retroperitoneum are the most common sites; 4. No gender difference in incidence. Clinically, the growth rate of the parasitic fetus is relatively slow, and generally does not affect the growth and development of the parasitized individual, but if the diagnosis and treatment is not timely, it can cause severe malnutrition in the parasitized individual. The conition should be diagnosed as early as possible and the operation should ensure as complete resection as possible to prevent recurrence and malignant transformation. Imaging examinations such as CT or MRI should be done before surgery to clarify the growth range of the parasitic fetus.

Case Report

The baby was a 1-month-old girl at the time of admission. The mother's ultrasound examination at 36 weeks of gestation revealed that (Fig. 1a) the solid part of the abdominal mass showed strong echoes of the limbs, and the fetus was about 40 mm long. The diagnosis was a parasitic fetus in the fetus. At that time, the pregnant woman and her family requested that the baby be delivered, and the baby was delivered successfully at the 38th week of pregnancy. One month after birth, the child was readmitted to hospital for surgery. On admission physical examination revealed a large round solid mass of 160 mm × 100 mm in the right upper abdomen, well defined, no cystic fluctuations, fixed position, and no tenderness. Liver and spleen were not palpable, mobile dullness was absent. During surgery the mass was located in the right side of the abdominal cavity behind the peritoneum, the size was about 150 mm × 120 mm × 100 mm, the mass was cystic and solid, the surface was smooth and encapsulated. The mass reached the hepatic hilum, went down beyond the lower pole of the right kidney, and extended beyond the midline. The mass occupied the entire right abdominal cavity and intestine was pushed to the left. A 50 ml syringe was used to puncture and aspirate fluid from the cystic area. The content of the sac was yellow–brown liquid with a total of 300 ml. After aspiration, the volume and tension were significantly reduced, and the "tumor" capsule was bluntly separated. The "tumor bed" was seen to be rich in blood vessels and partially adherent to surrounding tissues. It was closely attached to the right kidney. It was completely resected along the "tumor" capsule. A piece of No. 14 silica gel porous drainage tube was left and fixed at the incision, and the incision was sutured layer by layer. The tumor removed during the operation showed two parasitic fetuses macroscopically, with some limbs and abundant blood supply (Fig. 1b for the mass specimen). Postoperative pathology suggested that the fetus was parasitic in the retroperitoneum (Fig. 1c). At present, the child has fully recovered and 5 years recurrence free.

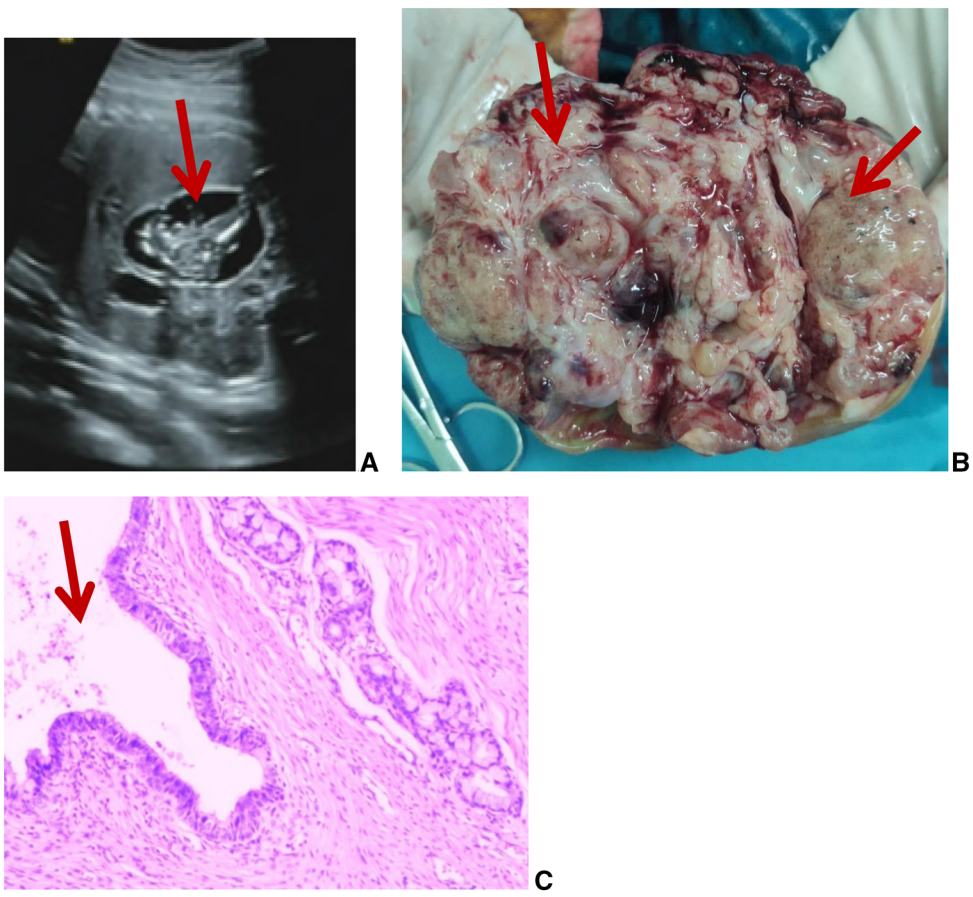

Fig. 1 Pictures of patients in hospital

Discussion

Fetus in fetu is a rare disease, and its incidence in newborns is extremely low [5, 6]. It was first reported by Johann Friedrich Meckel in 1880 [7]. Fetus in fetu is classified into identical and fraternal parasitism according to the source of eggs. When the same egg is parasitic, the two genotypes are the same. It is reported in the literature that the source of homozygous parasitism accounts for the majority, and the reports of fraternal parasitism are very few. There is a report of a 6-month-old female baby with a male fetus in fetu on the lower back [8]. According to the number of parasitic fetuses, it can be divided into single parasitism and multiple parasitism; according to the different position of parasitism, it can be divided into endoparasitic and ectoparasitic. The clinically common retroperitoneal parasitism is an endoparasitis.

At present, surgery is still the best treatment for fetus in fetu. Meticulous prenatal examination, antenatal ultrasound and CT examination after birth are of great significance for the selection of treatment strategies. In particular, imaging studies should be used for differential diagnosis of teratomas [9, 10]. It should be noted that if the surgical resection is incomplete, it may lead to recurrence or malignant transformation of fetus in fetu. Surgery should be performed on the premise of rich experience and accurate examination [3]. Usually, as long as a complete surgical resection of fetus in fetu is performed, the prognosis is good, as in our case.

Author Contributions XY wrote the article and participated in the operation, YZ participated in the operation and provided figures.

Funding Scholarship of Southeast University (Project No. 189351).

Compliance with Ethical Standards

Conflict of interest The authors declare that they have no conflict of interest.

Ethical Approval This article does not contain any studies with human participants or animals performed by any of the authors.

Informed Consent Informed consent was obtained from all individual participants included in the study.

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