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CASE REPORT

Fetus in Fetu in 12 Month Old Child: A Rare Case Report and Review of Diagnostic Challenges

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Abstract

Fetus in fetu (FIF) is an exceedingly rare congenital anomaly, with an incidence of approximately 1 in 500,000 births. This case report presents a 12-month-old female with fever, vomiting, and abdominal pain. Initial imaging suggested intussusceptions, but a more detailed analysis revealed a highly organized mass, later identified as FIF upon surgical removal and Histopathological analysis. This report outlines the clinical presentation, differential diagnoses, and surgical intervention for FIF, highlighting the need for prompt and accurate diagnosis.

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Introduction

Fetus in fetu (FIF) is a rare developmental anomaly characterized by the presence of a malformed parasitic twin within its host twin's body. The condition is distinguished from teratomas by its higher level of organization and the presence of well-formed structures such as limbs, bones, and sometimes organ-like tissues. The parasitic twin theory, which suggests that FIF results from the abnormal incorporation of a twin into its host during embryogenesis, is the most widely accepted explanation for this condition[1,2]. Fewer than 200 cases of FIF have been documented globally, with an estimated incidence of 1 in 500,000 births[3,4]. Early diagnosis is crucial, as FIF can be confused with other abdominal masses, such as teratomas, intussusceptions, or mesenteric cysts[5]. This case report illustrates the clinical presentation and diagnostic process in a 12-month-old girl with FIF.

Case Report

Clinical Presentation:

A 12-month-old female patient from Afghanistan presented with a 10-day history of fever, vomiting, and abdominal pain. Physical examination revealed a scaphoid abdomen with a firm, non-tender mass palpable in the left upper quadrant. Systemic examinations of the cardiovascular, respiratory, and central nervous systems were unremarkable.

Differential Diagnosis:

Based on the clinical presentation and imaging studies, the differential diagnoses considered were:

- Intussusceptions
- Infected mesenteric cyst
- Gut duplication
- Lymphoma
- Fetus in fetu

Investigations:

Blood tests: Hemoglobin was 9.5 g/dl, total leukocyte count was 19,800 cells/cmm, and platelet count was 394,000/cmm. Alpha fetoprotein, Beta Hcg was normal. Ultrasound: Three ultrasound scans revealed a mass in the left upper quadrant, initially suspected to be intussusceptions due to a target and whirlpool sign. However, the presence of highly organized structures led to the suspicion of FIF.

Surgical Findings:

An exploratory laprotomies was performed, revealing an encapsulated mass in the transverse mesocolon near the splenic flexure. The mass had limb-like projections with rudimentary fingers, as well as hair, cartilage, and gut loops. The mass was excised in toto, and the patient recovered well postoperatively.

Histopathology:

Authorship Contribution: [1,2]Substantial contributions to the conception or design of the work; or the acquisition, Data analysis, Literature review, [2]Drafting the work or revising it critically for important intellectual content,[1,2]Final approval of the version to be published, Topic Selection & Supervision

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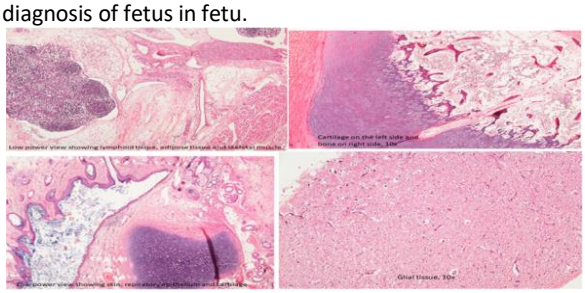
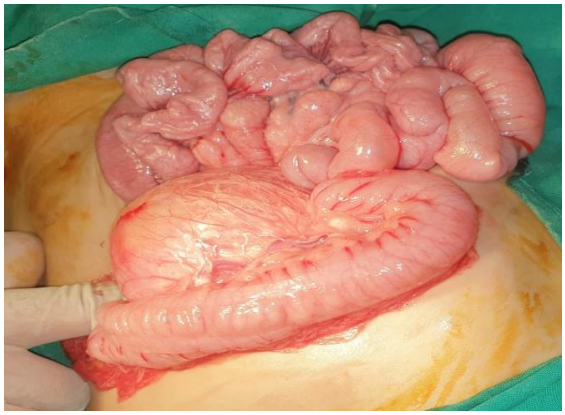
Specimen sent to a renowned laboratory for histopathology
Specimen sectioned as
a) Section from tube like structures.
b) Section from the two limb like structures.
c) Section from the skin and yellowish area.
d) Section from the cartilaginous area.
On regress additional sections are submitted in R1–R5
Histopathological analysis of the mass confirmed the presence of tissue derived from all three germ layers, including cartilage, bone, muscle, skin, glial tissue, gastrointestinal epithelium, respiratory epithelium, fat, and lymphoid tissue. These findings confirmed the diagnosis of fetus in fetu.



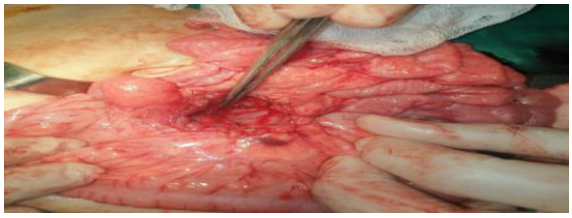
Discussion:

Fetus in fetu is a rare condition that can be mistaken for other abdominal masses such as teratomas or intussusception[3,6]



In this case, the patient presented with symptoms suggestive of intussusceptions, but further imaging revealed a more organized structure, which prompted the diagnosis of FIF. The parasitic twin hypothesis is the most commonly accepted theory, where the FIF mass represents a twin that has been absorbed into the body of the host twinduring early embryogenesis[7,8.] The presence of well-formed structures such as limbs and vertebrae distinguishes FIF from teratomas, which are less organized[9.]

Complete surgical excision is the treatment of choice, and the prognosis following surgery is typically excellent[10].



Conclusion:

Fetus in fetu is a rare anomaly that should be considered in the differential diagnosis of pediatric abdominal masses. Early recognition and surgical intervention are essential for preventing complications. This case highlights the importance of thorough diagnostic evaluation and the role of histopathology in confirming the diagnosis.

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