International Journal of Science and Research (IJSR)
ISSN: 2319-7064
SJIF (2022): 7.942

Fetus in Fetu: A Rare Presentation in an Adult Female

Dr. Mrinalini Borkar[1], Dr. Dhiraj D. Sagrule[2], Dr. Feby Krishnan[3]

[1, 2, 3]Department of General Surgery, IGGMC Nagpur, Maharashtra, India

Abstract: ***Fetus in fetu is a rare pathological condition resulting from abnormal embryogenesis in a diamniotic monochorionic pregnancy. This condition is typically observed in childhood or infancy. We report an 18 - year - old female who presented with complaints of generalized abdominal pain. On examination, a lump in the abdomen was noted and diagnosed as fetus in fetu, which was confirmed through histopathological examination.***

Keywords: Fetus in fetu, Lump in abdomen, Abdominal surgery, Rare pathological presentations.

1. Introduction

"Fetus in fetu is a rare pathological entity. Since its first description by Meckel in 1802, only a few cases have been reported in the world literature. It occurs in approximately 1 in 500, 000 pregnancies and is typically detected in infancy or childhood, with adult presentations being very rare. To the best of our knowledge, we are reporting the second oldest adult female patient diagnosed with fetus in fetu. " (1, 2)

2. Case Presentation

An 18 - year - old female presented to the outpatient department of our institute with a chief complaint of generalized lower abdominal pain for the past two years, accompanied by nausea and early satiety. She did not report any other complaints. Her bowel and bladder habits were normal, and her menstrual history was also unremarkable. On abdominal examination, a large mass measuring 30 x 30 cm was noted, occupying the entire right half of the abdomen. The mass did not move with respiration, and its lower border was palpable. It was firm in consistency, had ill - defined margins, and a smooth surface.

An X - ray of the abdomen revealed calcification on the right side, lateral to the transverse process of the lumbar vertebrae. An abdominal ultrasound showed a heterogeneously hyperechoic lesion arising from the retroperitoneal region, while the uterus and ovaries appeared normal. A contrast - enhanced computed tomography scan revealed a well - defined rounded lesion in the retroperitoneum, measuring approximately 16 x 14.6 x 24 cm. The lesion exhibited mixed fat density and cystic components, with well - defined calcified elements resembling a vertebral body, suggestive of a well - differentiated teratoma or fetus in fetu. Her routine blood investigations, including a hemogram and liver and renal profiles, were normal. Additionally, her alpha - fetoprotein levels were within the normal range.

After a complete pre - anesthetic evaluation and obtaining written informed consent, the patient was taken for exploratory laparotomy. The procedure revealed a large retroperitoneal tumor displacing the liver and kidney to the left, as well as the aorta. After ligating the feeding vessels, the tumor was excised, and a drain was placed in the pelvis. The postoperative period was uneventful, the drain was removed on postoperative day 3, and the patient was discharged on day 5.

The X - ray of the excised lump revealed a vertebral body - like structure. Upon gross examination, after opening the capsule and removing the pultaceous material, evidence of a well - developed vertebral body and skull - like structures was observed.

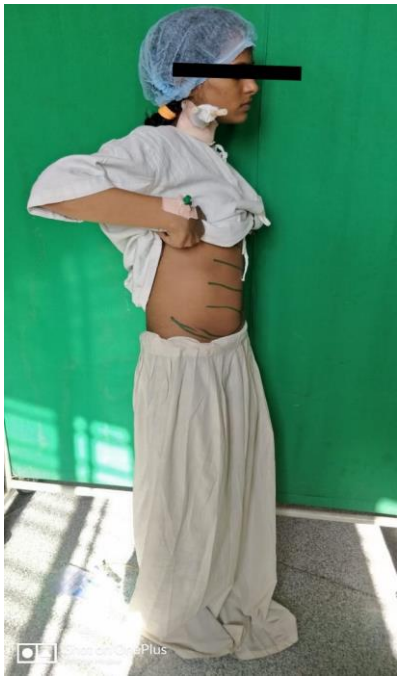
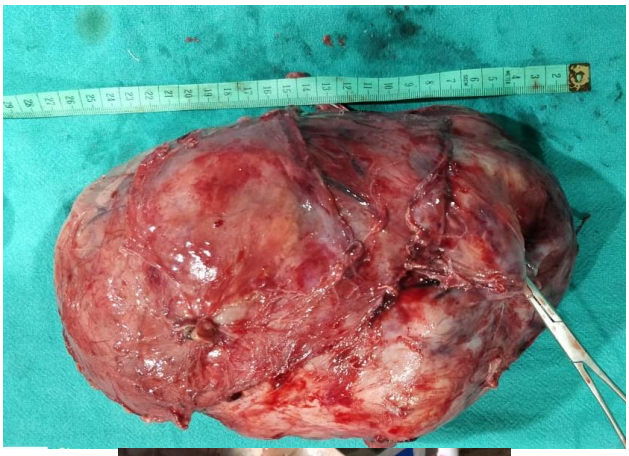


Figure: Pre - operative photographs of the patient of fetus in fetu



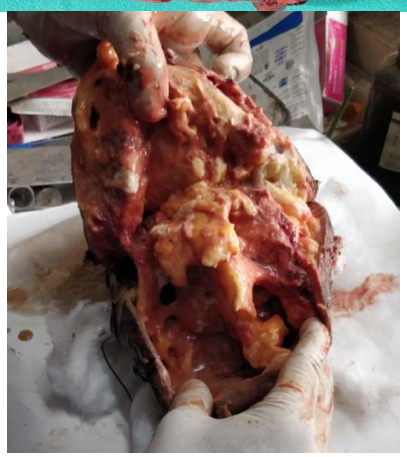


Figure 2: Photographs of the specimen of fetus in fetu

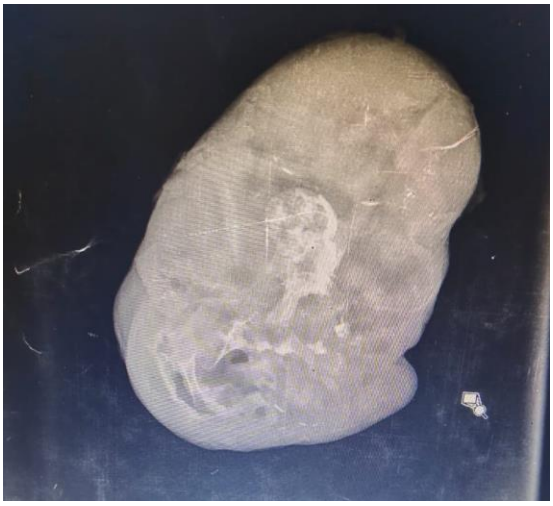


Figure 3: X - ray of the excised specimen

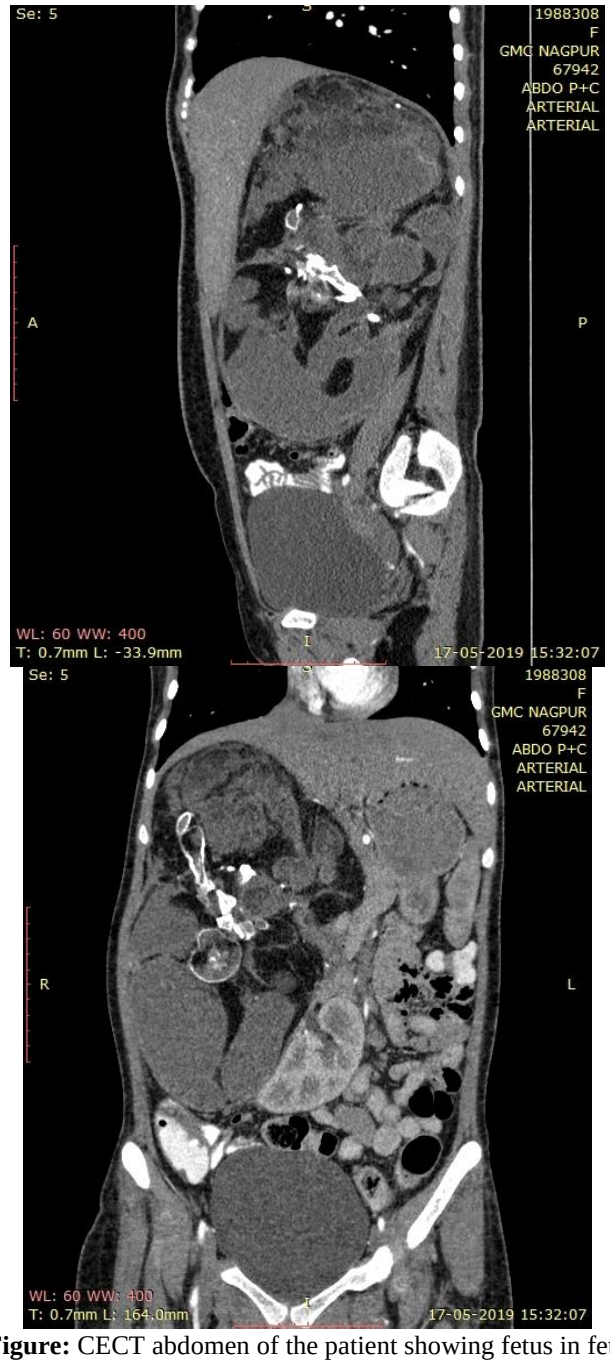


Figure: CECT abdomen of the patient showing fetus in fetu

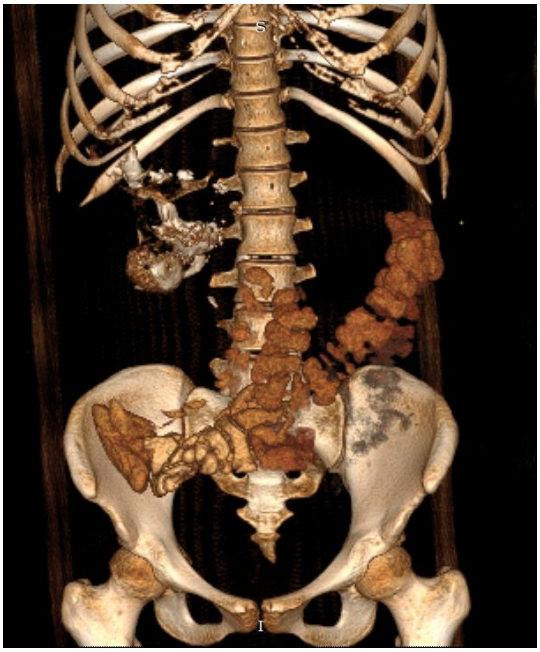


Figure: 3D reconstruction of CECT abdomen of Fetus in fetu.

3. Discussion

First described by Meckel in the 18th century, fetus in fetu is a pathological condition occurring in infancy, with an incidence of approximately 1 in 500, 000 deliveries. It is characterized as a parasitic monozygotic twin residing within its living twin, with 89% of cases found in infants. To date, the oldest recorded case of fetus in fetu in a female adult is at 30 years of age.

Fetus in fetu typically presents as an abdominal mass in 70% of cases, with the retroperitoneal space being the most common site, accounting for 80%. Other rare sites include the sacrococcygeal region, intracranial space, thorax, pelvis, and scrotum. (1, 2) The importance of advanced radiological investigations, such as computed tomography, cannot be overstated.

Single parasitic fetuses are the most common presentation, occurring in 88% of cases, though multiple fetuses ranging from 2 to 5 have also been reported. In this case, the fetal size measured 16.4 x 24 cm, with a weight of 1.8 kg, which falls within the typical range of 1.2 kg to 1.8 kg. The organs demonstrated in cases of fetus in fetu include the spine in 91%, limbs in 82.5%, central nervous system in 55.8%, gastrointestinal tract in 45%, vessels in 40%, and genitourinary tract in 26.5%. (3) Visualization of the vertebral column and limbs through imaging, as well as gross and histopathological examination, confirms the diagnosis. In our case, both the vertebral body and skull were identified, fulfilling the Willis criteria, which emphasizes the development of the axial skeleton and vertebral axis. (4, 5)

The majority of cases of fetus in fetu present in early childhood, with only three cases reported in patients over 15 years of age, the oldest being 30. This age factor has contributed to misdiagnosis as teratoma. Fetus in fetu is sometimes regarded as a well - organized structure that typically occurs in the upper retroperitoneum, while teratomas are usually found in the lower retroperitoneum, pelvis, ovaries, and sacrococcygeal regions (2, 8). Malignant transformation is rare in fetus in fetu, with only one case reported in the literature (10).

The presence of a vertebral column is an important diagnostic criterion, indicating the development of a notochord, which corresponds to an advanced primitive streak stage (8). A non - calcified vertebral column that is not visible on radiographs or CT scans, or its total absence (9%), does not exclude the diagnosis of fetus in fetu (5).

The presence of a bony vertebral axis with appropriately arranged limbs is an important diagnostic feature, as observed in the studied case, thereby confirming the diagnosis of fetus in fetu. (6, 8) Other distinguishing characteristics include normal levels of alpha - fetoprotein in fetus in fetu. A new diagnostic modality involves molecular analysis using informative genetic markers for uniparental isodisomy of chromosomes 14 and 15. If this analysis shows no genetic difference between the host and the fetiform mass, it is diagnostic of fetus in fetu. (7)

Fetus in fetu derives its blood supply from the rich vascular plexus surrounding the cyst wall. A vascular pedicle is rare and typically observed in larger, growing masses with delayed presentation. Surgical excision is the treatment of choice for both fetiform teratoma and fetus in fetu. If recurrence occurs under strict postoperative follow - up, the diagnosis may be revised to fetiform teratoma. (10)

References

[1] Sutthiwan P, Sutthiwan I, Tree - trakan T. Fetus in fetu. J Pediatr Surg.1983; 18 (3): 290–2.
[2] Du Plessis JP, Winship WS, Kirstein JD. Fetus in fetu and teratoma. A case report and review. S Afr Med J.1974; 48 (50): 2119–22.
[3] Arlikar JD, Mane SB, Dhende NP, Sanghavi Y, Valand AG, Butale PR. Fetus in fetu: two case reports and review of literature. Pediatr Surg Int.2009; 25 (3): 289–92.
[4] Patankar T, Fatterpekar GM, Prasad S, Maniyar A, Mukherji SK. Fetus in fetu: CT appearance—report of two cases. Radiology.2000; 214 (3): 735–7.
[5] Tada S, Yasukochi H, Otaki C, Fukuta A, Takanashi R. Fetus in fetu. Br J Radiol.1974; 47 (554): 146–8.
[6] Majhi AK, Saha K, Karmakar M, Sinha KK, Sen A, Das S. Fetus in fetu - - a mystery in medicine. ScientificWorldJournal.2007; 7: 252–7.
[7] Willis RA. The borderland of embryology and pathology.2nd ed. London: Butterworths Washington DC; 1962. pp.442–46.
[8] Gonzalez - Crussi F. Extragonadal teratomas (Atlas of tumor pathology) Washington, DC: Armed Forces Institute of Pathology; 1982.
[9] Thakral CL, Maji DC, Sajwani MJ. Fetus - in - fetu: a case report and review of the literature. J Pediatr Surg.1998; 33 (9): 1432–4.10). Hopkins KL, Dickson PK, Ball TI, Ricketts RR, O'Shea PA, Abramowsky CR. Fetus - in - fetu with malignant recurrence. J Pediatr Surg.1997; 32 (10): 1476–9.