

RADIOLOGICAL EVALUATION OF A RARE CASE OF FETUS IN FETU

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ABSTRACT

Fetus in fetu (FIF) is a very rare congenital developmental anomaly associated with defective embryogenesis in which malformed twin grows inside the body of its twin. Many times remnant of deformed fetus in form of deformed calvaria along with remnants of long bones, vertebrae along with soft tissues are noted within a well-defined sac. FIF closely mimics well differentiated teratoma. This is a case of 11 year old girl presented to emergency with long standing intermittent right hypochondrial pain which was further evaluated by ultrasonography and computed tomography suggesting possible diagnosis of Fetus In Fetu.

KEYWORDS : Fetus in Fetu, developmental anomaly, retroperitoneal mass, teratoma

INTRODUCTION:

Fetus in Fetu term was first described by Johann Friedrich Meckel in 18th century¹. Fetus in fetu(FIF) is a very rare congenital developmental anomaly(1 in 500,000 births)² associated with defective embryogenesis in which deformed twin grows inside the body of its twin and usually presents in infant and children and rare in adult^{3,4}. Most common location is retroperitoneum. However, other sites include intracranial, mediastinum, sacrum, scrotum etc⁶. It mainly presents as abdominal swelling in neonates & infants and pain abdomen with abdominal swelling in case of adults.

Case Report :

A 11 year old girl was referred to Department of Radiodiagnosis of our Institute, for evaluation of longstanding intermittent pain in right upper abdomen and recurrent episodes of urinary tract infection. There was no associated fever or vomiting or bowel irregularity. There was no significant prenatal history no significant past systemic illness or any significant family history of twinning or abdominal surgery.

The initial ultrasonographic evaluation revealed a large heterogenous retroperitoneal SOL located in right suprarenal region with multiple round and linear calcific foci with dense posterior acoustic shadowing within resembling calvarium(Figure.1), long bones and ribs and displacing adjacent structures .Subsequent contrast enhanced computed tomography(CECT) imaging showed a 14.5cmx10.2cmx9.3cm mixed density SOL(predominantly fat with soft tissue and fluid density) with multiple ossified structure within resembling deformed calvarium ,vertebrae, long bones, and ribs located in retroperitoneum in right suprarenal location with mass effect to adjacent structures(Figure 2-8)suggestive of Fetus in Fetu.

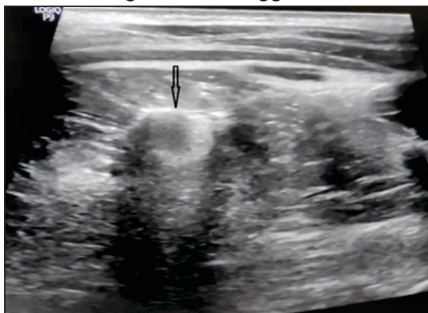


Figure 1: USG Whole Abdomen showing large heterogenous SOL with well defined echogenic round calcific structure

(black arrow)with dense posterior acoustic shadowing resembling deformed calvaria

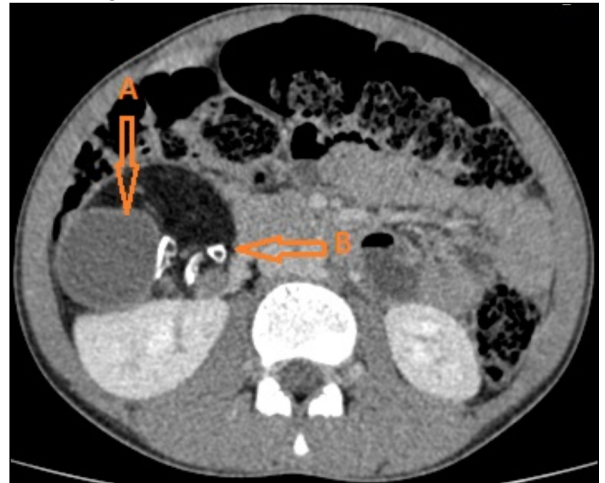


Figure 2: Contrast enhanced computed tomography abdomen axial shows a large heterogenous mixed density retroperitoneal SOL noted at right hypochondrium displacing right kidney inferiorly and contains (A) Deformed bony structures (B) surrounded by fat components

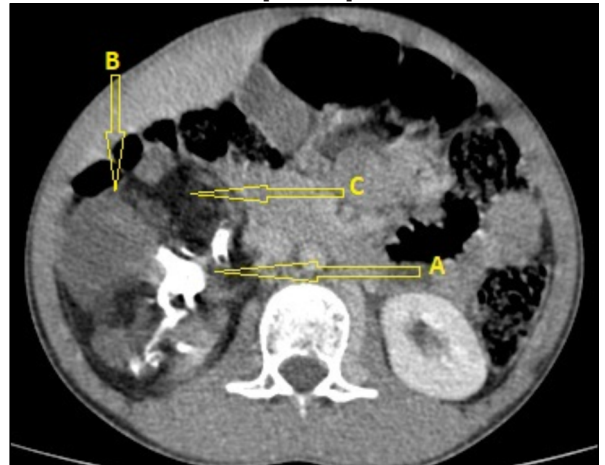


Figure 3: Contrast enhanced computed tomography abdomen axial shows a large heterogenous mixed density retroperitoneal SOL noted at right hypochondrium with fluid

density, calcified and fat components (A)Deformed vertebra (B) Fluid density (C) Fat component

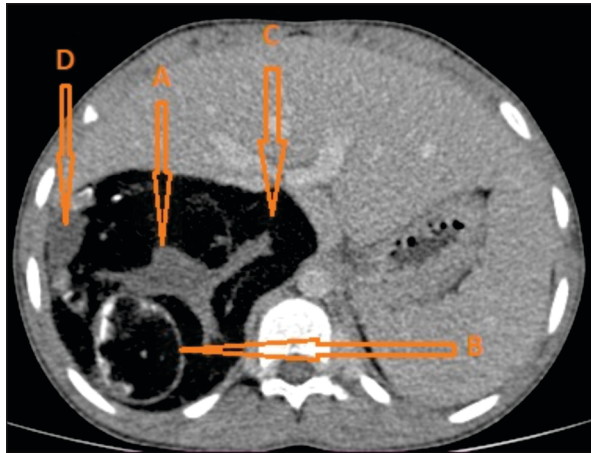


Figure 4: Contrast enhanced computed tomography abdomen axial shows a large heterogenous mixed density retroperitoneal SOL noted at right hypochondrium with fluid density, calcified, soft tissue and fat components (A)Soft tissue (B)Deformed calvaria (C) Fat component (D)Fluid density

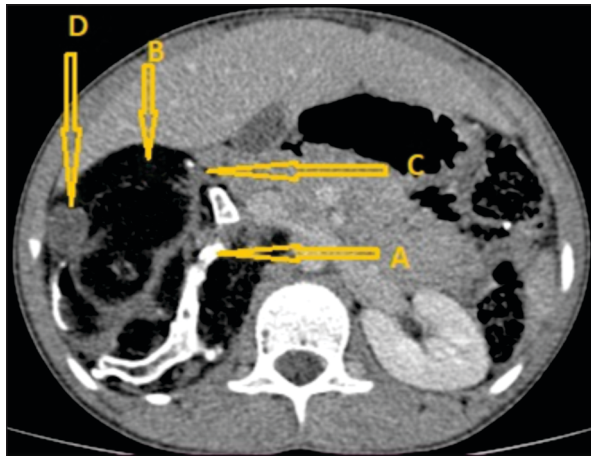


Figure 5: Contrast enhanced computed tomography abdomen axial shows a large heterogenous mixed density retroperitoneal SOL noted at right hypochondrium with fluid density, calcified, soft tissue and fat components (A)Deformed long bone (B) Fat component (C) Soft tissue (D) Fluid density



Figure 6: Contrast enhanced computed tomography abdomen sagittal shows a large heterogenous mixed density retroperitoneal SOL noted at right hypochondrium with fluid density, calcified, soft tissue and fat components (A)Deformed

calvaria (B)Deformed long bone (C) Soft tissue (D) Fat component.

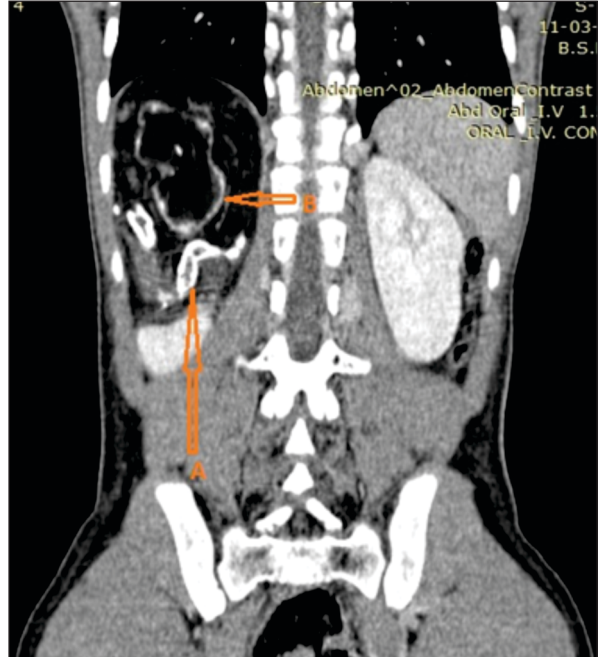


Figure 7: Contrast enhanced computed tomography abdomen coronal shows a large heterogenous mixed density retroperitoneal SOL noted at right hypochondrium with fluid density, calcified, soft tissue and fat components (A) Deformed long bone (B)Deformed calvaria

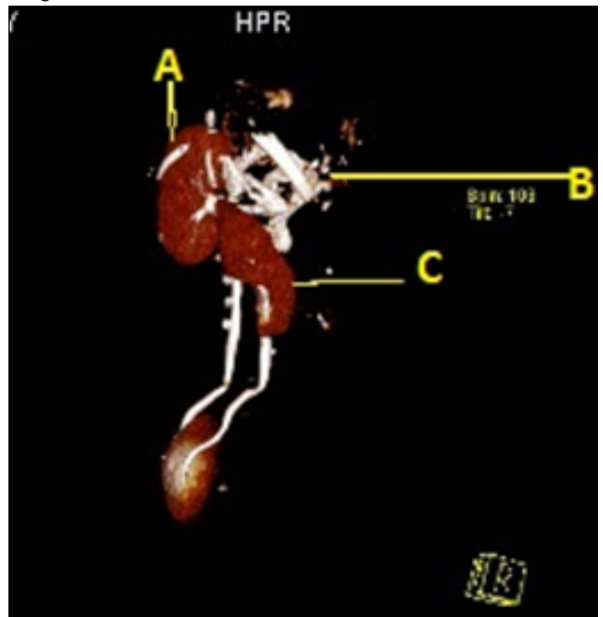


Figure 8: 3D Rendered Reconstructed image abdomen showing (A)Left kidney (B)Multiple deformed bony structures noted in right suprarenal location displacing right kidney inferiorly (C)Right kidney

DISCUSSION:

Pathogenesis of FIF is still not clear however two most common proposed theories are 1) Parasitic twin/identical twin states that FIF is a mono chorionic diamniotic, monozygotic twin^{7,8} that becomes incorporated into the body of the host twin after anastomosis of the vitelline circulation.⁹ 2) Highly differentiated teratoma¹⁰ variant of mature teratoma. Other theory include demised multiple pregnancy. Identification of vertebral bodies and limb buds helps in differentiating FIF from teratoma¹¹. Diagnosis can be made combining clinical

signs and symptoms with radiological aids(XRay, ultrasound, CT Scan,MRI). Prenatal screening aids in early diagnosis in skilled hands.

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