

Fetus In Fetu A Rare Condition: Case Report

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Abstract: Encapsulated intra abdominal mass in three years old male child was removed surgically. Preoperative radiological examination revealed one irregular bone, three well formed teeth, soft tissue, some fluid & all enclosed in a capsule & attached to stomach with a short pedicle. Tumor mass was dissected later, found to contain fully formed right sided maxilla bone & three teeth. Soft tissue on histopathological examination showed various well developed organs which include stomach, small intestine, trachea, cerebellum, cartilage etc. One axial skeleton bone & well differentiated organogenesis confirmed the mass as fetus in Fetu.

Keywords: Fetus, tumor, congenital, fetus in fetus, teratoma

Introduction:

Fetus in fetu (FIF) is extremely rare congenital anomaly 1/500000 births, in which malformed fetus grows within the body of it's twin.⁽¹⁾ It is almost always detected as an abdominal mass in infancy. It is a parasitic twin of a diamniotic, monozygotic twin.⁽²⁾

The pathogenesis of FIF can be explained by the 'included-twin' theory in which the FIF is a diamniotic, monochorionic, monozygotic twin that becomes incorporated into the body of the host twin after anastomosis of the vitelline circulation.⁽³⁾ Although the most common site is the retroperitoneum. FIF have been reported at various sites right from the cranial cavity to the scrotal sac.⁽⁴⁾ Different organs can be seen in FIF, including vertebral column (91%), limbs (82.5%), central nervous system (55.8%), gastrointestinal tract (45%), vessels (40%), and genitourinary tract (26.5%).⁽⁵⁾

Case Presentation:

Three years old male child presented to clinician with history of vomiting off & on, Pain in abdomen and weakness. On examination, pain was in epigastric region & described as dull aching. No history of diarrhea or loose motions with vomiting. On palpation there was a lump in epigastric region. Radiological investigations confirmed it as lump in abdomen. Within lump was dark irregular shadow suggesting bone & three wellformed teeth were observed.

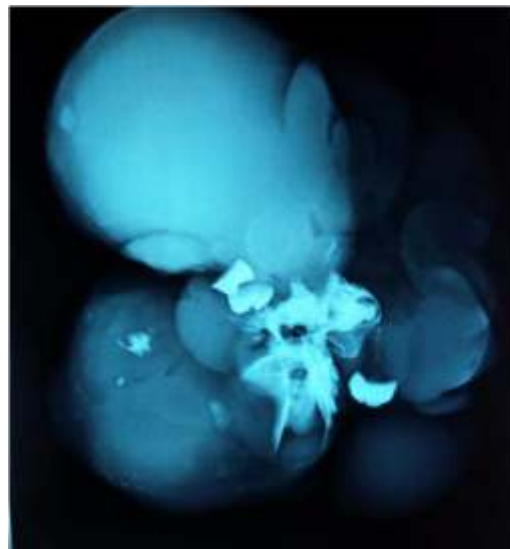
Operative Notes: Blood supply of mass was derived from gastric vessels. On examination of lump it was 6' x 6' diameter and weight approximately about 150 gms. Mass was encapsulated and had a small peduncle containing

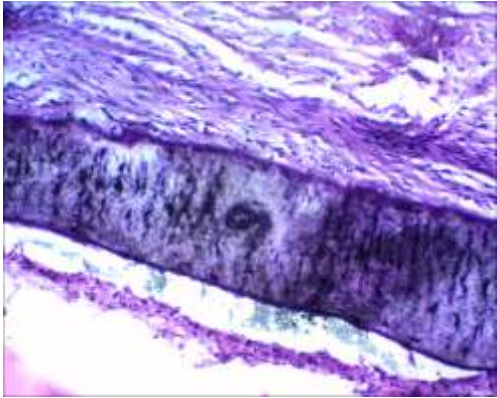
blood vessels in it.

On histopathological examination, Mass was consisting of abundant soft tissue. Small pieces of soft tissue were obtained from different areas on mass were processed and examined.

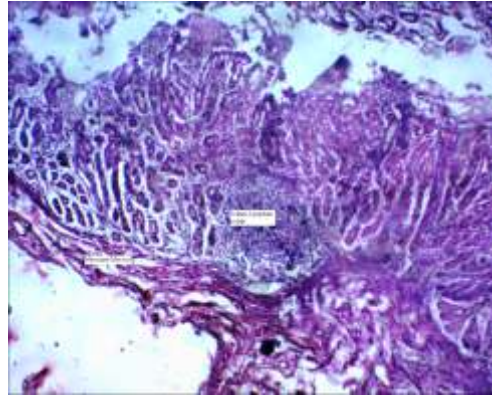
Following tissues & organs were found-

1. Cartilage,
2. Trachea Pseudo stratified columnar ciliated epithelium with lamina Propria was seen
3. Stomach
4. Small intestine In some parts, structure is like jejunum with solitary lymphatic nodules seen
5. Small mass of highly pigmented tissue like choroid.
6. Gland - resembling serous gland
7. Cerebellum

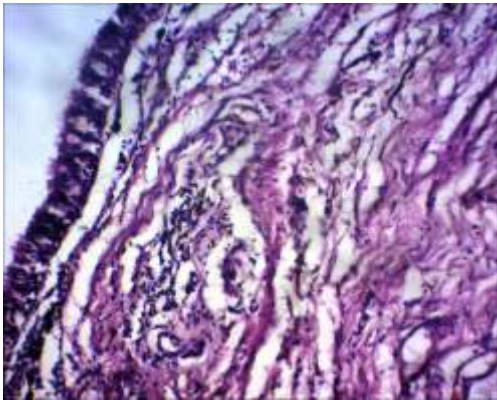




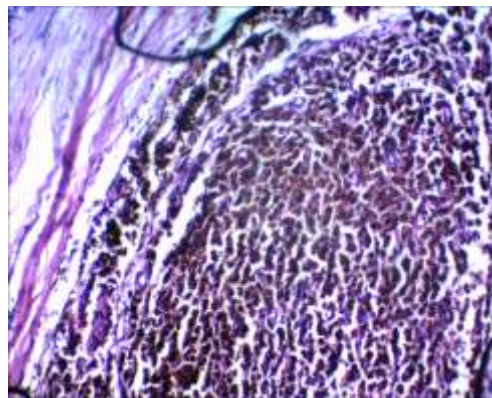
Photomicrograph No. 1 cartilage



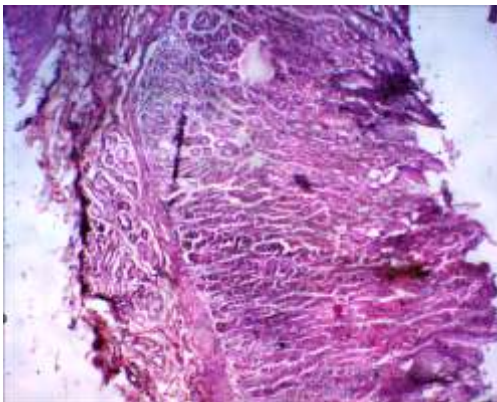
Photomicrograph No. 4 Small intestine



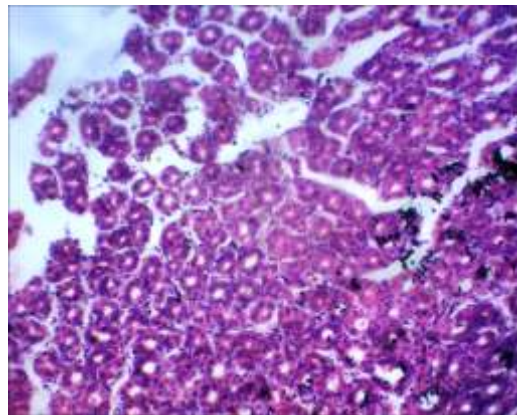
Photomicrograph No. 2 Pseudostratified columnar epithelium as in trachea



Photomicrograph No. 5 choroid



Photomicrograph No. 3 Stomach



Photomicrograph No. 6 Gland

Discussion:

Fetus in fetu (FIF) is extremely rare pathology (1/500000 live births) in which a malformed fetus is located in the body of its twin. The liberal definition of FIF was proposed by Gonzalez - crussi who defined FIF as 'high organotypic development and presence of vertebral axis with arrangement of tissue around this axis.'⁽⁶⁾

In present case, maxilla was at centre of mass around

which rest of soft tissue was developed. Maxilla is one of the facial bones which develop in mesenchymal plate around cranial part of central axis of embryo.

Histopathological examination showed that there was well formed gastrointestinal tract, in which stomach & small intestine were developed. Cartilage surrounded by collagen fibres was observed. Typical respiratory epithelium seen and also nervous tissue was also

developed. Some sections of blood vessels are seen.

Highly differentiated organs and systems are developed in soft tissue from a mass. All above findings have confirmed diagnosis of FIF in this case.

Following criteria's are fulfilled in present case to diagnose as FIF:-

- 1) A mass is enclosed within a distinct sac and it is attached to host by a pedicle containing relatively larger blood vessels.
- 2) Contain grossly recognized anatomic features. Part of axis of body in this case is indicated by developed maxilla bone.
- 3) Highly differentiated organs or systems are seen.

All above finding go with diagnosis FIF. Abdominal mass in this case can not be diagnosed as teratoma because teratoma consists of pluripotent cells without organogenesis and vertebral segmentations⁷.

Conclusions:

This case meets all the accepted criteria of abdominal fetus in fetu. Preoperative diagnosis was based on radiological examination which revealed an abdominal mass containing bone, teeth, soft tissue & fluid.

Treatment of choice is complete resection. Post operative follow up of patient for two years is normal.

References:

1. Grant P, Pearn JH. Foetus-in-foetu. Med J Aust. 1969; 14(20): 1016-1019.
2. Sharma A, Goyal A, Sharma S. fetus in fetu: A rare case report. J. Res Med Sci. 2012 May; 17(5): 491 - 494.
3. Spencer R. Parasitic conjoined twins: external internal (fetuses in fetu and teratomas), and detached (acardiacs). Clin Anat. 2001;14(6): 428-444.
4. Aoki K, Matsumoto Y, Hamazaki M, Sano M, Fukumoto K, Fukaya T, Kuroda K, Tsutsumi R. MRI reveals fetus in fetu in the mediastinum. Pediatr Radiol. 2004; 14(12): 1017-1019.
5. Hoeffel CC, Nguyen KQ, Phan HT, Truong NH, Nguyen TS, Tran TT, Fornes P. Fetus in fetu: a case report and literature review. Pediatrics. 2000; 14(6): 1335-1344.
6. Extragonadal teratomas. Washington, DC: Armed Forces Institute of Pathology; 1982.

7. Kim Oh, Shinn K.S. Postnatal growth of fetus in fetu. Pediatric Radiol. 1993; 23: 411-412

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