

Journal of Pediatric Sciences

FETUS IN FETU – a rare entity

Savithri R, Geethamani V, Sreedharamurthy

Journal of Pediatric Sciences 2013;5:e180

How to cite this article:

**Savithri R, Geethamani V, Sreedharamurthy. FETUS IN FETU – a rare entity.
Journal of Pediatric Sciences. 2013;5:e180**

CASE REPORT

FETUS IN FETU – a rare entity

Savithri R¹, Geethamani V¹, Sreedharamurthy²

Department of Pathology¹, Department of Paediatric surgery²,
Kempgowda Institute of Medical Sciences Bangalore-70, India

Abstract:

Fetus-in-fetu is a rare condition, secondary to abnormal embryogenesis in a twin pregnancy. The malformed parasitic fetus is found in the body of its twin. It presents as a fetiform mass, usually in the abdomen of a newborn or an infant. The incidence is 1 per 500,000 births. It is a pathologic entity distinct from teratoma. Current imaging techniques may allow a correct pre-operative or a prenatal diagnosis of the condition. We present a case of a 2 month old male baby with abdominal distension noticed in the first week of life. The 'mass' was removed, the gross and microscopic features confirmed the diagnosis of Fetus-In-Fetu .

Keywords: Abdominal mass, fetus, fetus in fetu, parasitic twin, twin pregnancy

Corresponding author: Savithri R, Department of Pathology, Kempgowda institute of medical sciences Bangalore-70. Tel.

No. 91-080-26611029,

E-mail: drsavi3@gmail.com

Introduction

Fetus-in-fetu is a rare condition secondary to abnormal embryogenesis in a twin pregnancy. The malformed parasitic fetus is found in the body of its twin. It presents as a fetiform mass, usually in the abdomen of a newborn or an infant.

Case report

A two month old male child with abdominal distension was referred to the Paediatric surgery Department. The distension was noticed by the mother in the first week of life. On clinical examination, an otherwise healthy male child had abdominal distension. There were no congenital anomalies. Ultrasonography & CT abdomen showed a large mass filling the upper abdomen with areas of calcification. Probable diagnosis of teratodermoid was made. Exploratory laparotomy was performed. A large mass was seen filling the upper abdomen

compressing the organs. The “mass” was within a sac in the retroperitoneum and the mass with the sac was removed in toto.

Morphology

Macroscopic examination revealed a fetiform mass, weighing 350gm and measuring 12x8x7 cm. It was covered by skin with hair (fig.1). The “head” measured 8x6x3 cm and was anencephalic. Tiny buds on the sides corresponding to limb buds were noted (fig.1).

The “trunk” measured 10x6x4cm and the skin was deficient over the “abdominal region”. A portion of intestine (fig.2) and a tiny structure resembling spleen were noted. On dissecting, a row of cartilages corresponding to vertebral bodies were seen.

Microscopy confirmed glial tissue and choroid



**Figure 1 and 2. Macroscopic appearance of the fetus in fetu.
Macroscopic appearance of fetus in fetu “front view”**

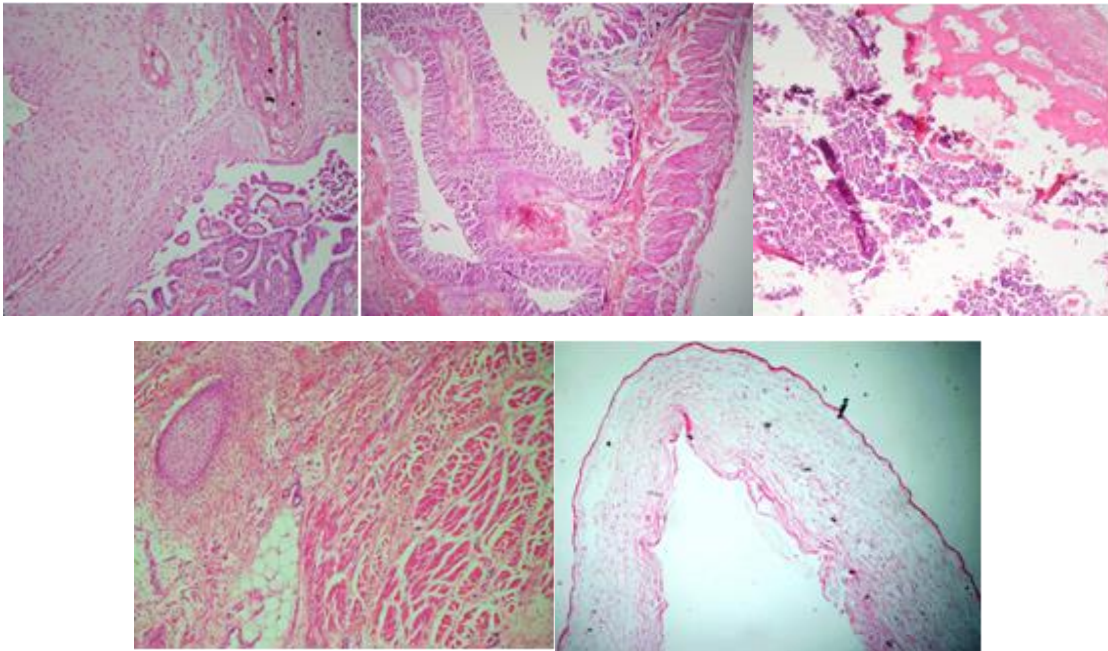


Figure 3-7. Microsections (H&EX100/H&EX40): showing glial tissue and choroid plexus (3), intestine (4), bone& marrow (5), cartilage and skeletal muscle (6) and membrane covering the fetus in fetu (7)

plexus (fig.3), Intestine (fig.4), Vertebral bodies [Cartilage, Bone (fig.5)], spleen, Skeletal muscle (fig.6). The sac covering the fetus in fetu resembled the amniotic membrane (fig.7).

Discussion

Fetus in fetu is a rare congenital entity where malformed parasitic twin is found inside the body of the living child or rarely an adult.

The incidence is 1 per 500,000 births. It is a pathologic entity distinct from teratoma. Fetus in fetu is a differentiated mass that, in contrast to a teratoma there is development of spinal column and also organ development. Majority of the cases present in infancy [1-4]. However, a few cases have been reported in adults [1,5-8]. The oldest case reported is in a 47 yr old man [9]. Availability of advanced imaging techniques

even in smaller centers have helped in the early diagnosis of this condition.

Prenatal diagnosis was made in about 15% of reported cases. The present case did not have prenatal diagnosis. The symptoms of fetus in fetu are mainly due to compression of the organs and tissues. Sometimes the condition may be asymptomatic and go unnoticed for a long time which is another reason for finding a few adult cases.

The most accepted theory of FIF is abnormal twinning process. It results in a twin pregnancy where one is included in the other maturing embryo and hence develops in the body of its twin. The other theory is that it may be a highly differentiated form of mature teratoma. Teratomas are mostly located in the mediastinum, sacral region and pelvis. The cystic cavity in teratoma is commonly lined by squamous or glandular epithelium whereas; Fetus In Fetu is covered by an amnion like membrane which supports the inclusion theory. The sac resembled the amniotic membrane histologically in the present case.

Location of Fetus In Fetu is upper abdomen in more than 80% of cases . However, other sites like pelvis, chest, liver, CNS have been reported [10-12]. In most cases it is single. A few multiple fetuses in fetu have been reported. Size and weight of the fetuses can vary.

Almost always fetus is anencephalic as in the present case. Glial tissue and choroid plexus were noted in the micro sections from this region. Limb development has been observed at different stages by various authors .Some authors have observed well developed limbs with fingers and nails. We observed only tiny limb buds on the sides. The trunk portion had deficient skin on the abdominal aspect and showed a loop of intestine, cystic cavity and a tiny spleen. The back had row of cartilages and bone with marrow which were confirmed on histopathology. Presence of vertebral bodies is considered as the key feature for the diagnosis of this condition. It differentiates fetus in fetu from a highly organized teratoma and indicates

that fetal development of the included twin must have advanced at least to the primitive streak stage to develop a notochord, the precursor of vertebral column. The common structures and organs present in fetus in fetu are vertebral column, limbs, central nervous system, gastrointestinal tract, vessels, genitourinary tract, respiratory system at varying stages of development. The present case showed vertebral column, limb buds, nervous system, gastrointestinal tract and spleen.

Treatment is complete resection of the mass. There are no chances of recurrence. There are few case reports of FIF with associated teratoma and one report with malignant recurrence.

Conclusion:

Fetus in fetu is a rare and interesting entity. Current imaging techniques may allow a correct pre-operative diagnosis or even a prenatal diagnosis of the condition. A complete excision is curative and allows confirmation of the diagnosis.

References

1. Hoeffel CC, Nguyen KQ, Phan HT, Truong NH, Nguyen TS, Tran TT, et al . Fetus in fetu: A case report and literature review. *Pediatrics* 2000;105:1335-44.
2. Khalifa NM, Maximous DW, Abd-Elsayed AA. Fetus in fetu: a case report. *J med case reports* 2008;2-2.
3. Brand A, Alves MC, Saraiva C, Loio P, Goulao J, Malta J, Palminha JM, Martins M. Fetus in fetu– diagnostic criteria and differential diagnosis- a case report and literature review. *J Paediatr Surg* 2004;39: 616-8.
4. Arlikar JD, Mane SB, Dhende NP, Sanghavi Y, Valand AG, Butale PR. Fetus in fetu: two case reports and review of literature . *Paed surg int* 2009;25:289-92.
5. Daga BV, Chaudhary VA, Ingle AS, Dhamangaokar VB, Jadhav DP, Kulkarni PA. Double fetus-in-fetu: CT scan diagnosis in an adult. *Indian J Radiol Imaging* 2009; 19:216-8

6. Lee CC, Liu KL, Tsang YM, Chen SJ, Liu HM .Fetus in fetu in an adult:ndiagnosis by computed tomography imaging. J formos Med Assoc 2005;104 :203-5.
7. Massad MG, Kong L, Benedetti E, Resnick D, Ghosh L, Geha AS, Abcarian H. Dysphagia caused by a fetus-in-fetu in a 27-year-old man. Ann thorac surg. 2001;71: 1338-41.
8. Mohan H, Chhabra S, Handa U. Fetus-in-fetu: a rare entity. Fetal diagn Ther 2007;22: 195-7.
9. Dagradi AD, Mangiante GL, Serio GF, Musajo FG, Menestrina FV. Fetus-in-fetu removal in a 47-year old man. Surgery 1992;112:598-692.
10. Chua JH, Chui CH, Sai Prasad TR, Jabcobsen AS, Meenakshi A, Hwang WS. Fetus-in-fetu in the pelvis: Report of a case and literature review. Ann Acad Med Singapore 2005;34:646-9.
11. Magnus KG, Millar AJ, Sinclair-smith CC, Rode H. Intrahepatic fetus in fetu: a case report and review of literature. J Paediatr Surg.1999;34:1861-4.
12. Beaudoin S, Gouizi G, Mezzine S, Wann AR, Barbet P. Mediastinal fetus in fetu: Case report and embryological discussion. Fetal Diagn Ther 2004;19:453-5.