

Case Report

Fetus in fetu

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ABSTRACT

Fetus in fetu is an extremely uncommon cause of abdominal mass in the neonate. A case of retroperitoneal fetus in fetu in a 2 week old boy is reported, the excised mass containing a round mass, covered by hair, containing brain tissue; 2 feet and 2 arms; a cavity containing a loop of intestine of 15 centimeters length, small penis and testis.

Keywords: Fetus in fetu, teratoma.

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Teratoma is defined as a true tumor composed of multiple tissue foreign to those characteristic of the part from which it is derived.¹⁻³ The term fetus in fetu is reserved for the malformed masses in which the differentiation of the teratoma is carried to a high degree with the presence of axial differentiation of limbs and organs.⁴ Fetus in fetu differs from teratoma by the presence of axial skeleton and organogenesis. When intratumoral axial skeleton is present, plain films are sufficient for the diagnosis.⁵ It occurs predominantly in the upper retroperitoneum, less frequently in the pelvis and ileal mesentery, and very unusual as intra cranial mass.⁶ The term fetus in fetu was first used by Meckel at the beginning of the last century.⁷

Case report. A 2 week old boy was referred to Pediatric Surgery Department with the problem of abdominal mass. (He was initially admitted to the nursery for post circumcision bleeding 2 days previous, carried out by traditional practice). He was full term, born by spontaneous vaginal delivery, and an abdominal mass was discovered by routine physical examination carried out in the nursery.

On examination, the baby was in good general condition, with mild pallor and weight was 3.1kg. Abdomen was moderately distended. An irregular mass, 10-x 15 cm was felt occupying the left

hypochondrium extending to the left iliac fossa. Investigations revealed (Hb: 9.7 g/l, Ht: 26%, PT: 13.2 sec, PTT: 49.6 sec), plain X-ray of abdomen showed soft tissue mass, with multiple calcification. CT scan of the abdomen revealed a well-localized pelvi-abdominal mass, 7 x 9 x 10 cms, with different tissue density and the presence of 2 vertebral bodies and long bones within the mass.

At operation, a mass was found in the left retroperitoneal space and crossing the mild line, covered by the meso colon, through which a loop of intestine could be seen, having the diameter and size same as that of the patients intestine. The upper pole of the mass was closely adherent to the superior mesenteric vessels with no major vascular connection. The mass was excised. On gross examination, the mass measured 11 x 12 x 15 cm and was multilobulated. The cephalic end was covered by hair. There were multiple limbs: 2 of them similar to feet with five toes, the other as an arm. Multiple cavities were seen: one contained intestine of a 15 cm length, another cavity contained bone tissue and tooth, the other solid areas contained bone cartilage and soft tissue. Between the foot and other limb there was a small penile bud of 3 mm, an other small tag as testes. Microscopic description: examination of the multiple section from different areas of the mass showed mature tissue consisting of

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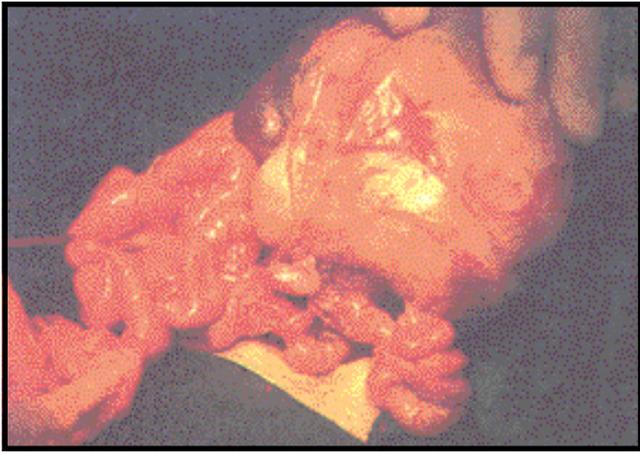


Figure 1 - Photograph showing the fetus with its intestine.

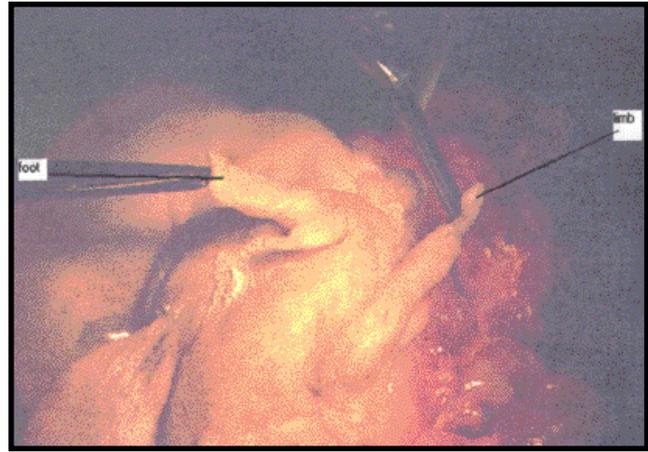


Figure 2 - Photograph showing the limbs of the fetus.

brain tissue, nerve, intestine (all layers were present) skin, lung tissue, tissue of penis and testes. The patient did well and was discharged on the 10th postoperative day.

Discussion. Fetus in fetu is a very rare cause of abdominal mass.⁸ It arises most likely from inclusion of monozygotic diamniotic twin. Nicholson in 1934 and Willis 1935 to 1948^{9,10} insisted that the absence of a vertebral column in a teratoma is a proof that these tumors had not developed in a manner similar to a fetus, they could not have passed through the primitive streak stage which endows the developing organism with its fundamental vertebral pattern. They believed that if a tumor proves to have this vertebral pattern then its etiology would differ from that of teratoma. Ouimet and Russo,⁴ Eng et al,¹¹ and Simpson¹² have described their cases as fetus in fetu instead of teratoma because of the presence of organ-like structures even in the absence of vertebral axis.

The present case meets all the accepted criteria of fetus in fetu of the well documented cases ie. the vertebral bodies, the upper and lower limbs, other organs such as; penis, testes, and a well developed intestine. Lord in 1956 reviewed the world literature and found 31 cases reported before 1900 and 11 cases after, only 4 of those were intraabdominal.⁸ Since that time, sporadic cases of fetus in fetu in different parts of the world have been reported. An equal number have been reported since then.¹³

Finally it is important to differentiate between teratoma and fetus in fetu.⁸ The first is potentially malignant, while the second is benign but may cause serious complications by pressure caused by continuous growing if it is left untreated.

References

1. Potter EL, Craig JM. Pathology of the fetus and the infant. 3rd ed. Chicago: Yearbook; 1976. p. 188-236.
2. Valente A, Grant G, Orr JD. Neonatal tonsillar teratoma. *J Pediatr Surg* 1988; 4: 364-366.
3. Hirabayashi S, Ueda K. Nasopharyngeal teratoma attached to the lower jaw. *Plast Reconstr Surg* 1985; 6: 939-941.
4. Ouimet A, Russo P. Fetus in fetu or not? *J Pediatric Surg* 1989; 9: 926-927.
5. Chateil JF, Diard F, Bondonny JM, Moinard M, Vergnes P, Carles D. Intraperitoneal testicular fetus in fetu. *Pediatric (France)* 1990; 45: 255-262.
6. Al-Baghdadi R. Fetus in fetu in the liver. *J Pediatric Surg* 1992; 27: 1491-1493.
7. Lee E. Fetus in fetu. *Arch Dis Child* 1965; 40: 689-693.
8. Lord JM. Intra abdominal fetus in fetu. *J Pathol Bacteriol* 1956; 72: 627-641.
9. Willis RA. The borderland of embryology and pathology. London, England: Butterworths; 1958.
10. Gronzaliz-Crussi F. Extragonadal teratoma. Atlas of tumor pathology. 2nd ed. Series fascical 18. Washington DC: Armed Forces Institute of Pathology; 1982. p. 20-24.
11. Eng HL, Chuang JH, Lee TY. Fetus in fetu: A case report and review of the literature. *J Pediatr Surg* 1989; 3: 296-299.
12. Simpson JS. Conjoined twins: In: Holder TM, Aschcraft KW editors. *Pediatric Surgery*: Philadelphia: PA Saunders; 1980. p. 1104-1113.
13. Hopkins KL, Diskson PK, Turner IB, et al. Fetus in fetu with malignant recurrence. *J Pediatr Surg* 1997; 32: 1476-1479.