

Fetus in Fetu: A Case Report and Review of literature.

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Abstract: A 15 day old male child presented with a mass in the lower abdomen, on antenatal scan and postnatally with a swelling in the abdomen. Radiological investigations revealed a large well defined cystic mass with areas of calcifications within it, suggestive of a large teratoma arising from the pelvis. Complete excision of the tumor was done. On gross examination there were two limb like structures seen at the upper end of the mass and on cut section areas of well-developed bone, cartilage, friable pale areas and cystic structures were seen. Histopathology showed skeletal tissue, leptomeninges, GI epithelium arranged in organoid form; these were suggestive of fetus in fetu.

INTRODUCTION

This is a rare disorder of surgico pathological curiosity, wherein an aborted fetus is included within its partner. Here we report a case of fetus in fetu with review of literature.

CASE REPORT

A 15 day old male child presented with antenatal scan showing a mass in the lower abdomen and postnatally with a swelling in the lower abdomen. On examination, an 8x8cms nontender, ovoid, firm lump with a smooth surface was present in the right lower abdomen, arising from the pelvis. The lower border of mass was palpable on per rectal examination. X-ray showed a soft tissue shadow in the left lower abdomen without any calcifications. Ultrasonography revealed an 13x10x5 cms cyst in the pelvis on the right side and posterior to uterus with a fat fluid level. CT abdomen showed a large well defined, non enhancing lesion arising from the pelvis and extending into the abdomen with areas of cystic and fat attenuations and calcifications seen within it, with right kidney pushed down by the mass, suggestive of a large Teratoma. Exploratory laparotomy with complete excision of the retroperitoneal tumor was done. On gross examination (figure 1) there were two limb like structures and a tubular structure seen arising from the upper end of the mass and on cut section (figure 2) areas of well-developed vertebrae, cartilage, friable ependymal cells, leptomeninges were identified, GI epithelium showed colonic mucosa with muscularis propria, thick nerve bundles with ganglia were seen, fibrocollagenous tissue and adipose tissue was also noted. In view of mature tissue in organoid form, a histopathological diagnosis of fetus in fetu was made.



Fig. 1: Gross Findings

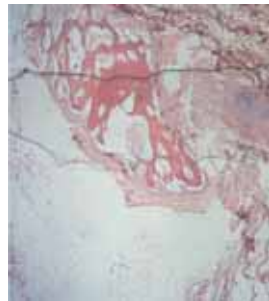


Fig.2: Microscopy

DISCUSSION

Meckel in the early nineteenth century coined the term 'Fetus in Fetu'. It is an extremely rare condition estimated to occur in one in 5,00,000 deliveries. Differentiation of fetus in fetu from a mature or well organized 'teratoma' is rarely discussed. According to earlier definition proposed by Willis¹, presence of axial skeleton with vertebral axis with an appropriate arrangement of other limbs and organs, with respect to axis goes more in favor of fetus in fetu as it indicates abortive attempt after the stage of primitive streak formation²¹. Another definition proposed by Gonzalez-Crussi²; 'Fetus in fetu is applied to any structure in which the fetal form is in a very high development of organogenesis and to the presence of vertebral axes'. On the other hand, 'teratoma' is an accumulation of pluripotential cells in which there is neither organogenesis nor

vertebral segmentation². Later, Federici et al³ proposed that in the presence of structures with an advanced grade of fetal organization such as eyes, parts of the central nervous system, well developed limb like processes, skin and colon, the diagnosis of fetus in fetu can be applied, even in the absence of a real axial skeleton.

It is thought to result from unequal division of totipotent inner cell mass of the developing blastocyst which results in small cell mass within a maturing sister embryo, thus ultimately resulting in a vestigial remnant of a diamniotic monochorionic twin that is located within the body of an otherwise normally developed twin. Usually, it is a single parasitic twin, but can range from 2 to 5. The organs present can be vertebral column, limbs, central nervous system, gastrointestinal tract, vessels, and genitourinary tract. Classically they are anencephalic⁵. The condition usually presents in infants, but the oldest reported case is of a 47-year-old adult. The common presentation is abdominal mass, usually retroperitoneal but can also present in unusual sites like skull, sacrum, scrotum, mouth, posterior mediastinum and liver. Symptoms of fetus in fetu relate mainly to its mass effect and include abdominal distension, feeding difficulty, pressure effects on renal system and dyspnoea⁶.

Preoperative diagnosis is now possible with advent of CT. Plain abdominal X-ray may be helpful in diagnosis if it shows a vertebral column and axial skeleton⁷. The identification of vertebrae or long bones is essential for establishing this diagnosis prospectively⁸.

Intra-abdominal fetus is usually contained in a complete sac, without any major vascular connections to the host. Predominant blood supply is derived from the plexus where the fetus in fetu and the sac are attached to the abdominal wall. Complete excision of the mass and surrounding membrane ensures, definitive cure, with special attention given to blood supply which may be occasionally derived from the hosts' superior mesenteric vessels⁹.

Another important aspect of fetus in fetu is that they never become malignant (except one case reported), whereas teratomas have malignant potential¹⁰. WHO has suggested that the fetus in fetu mass represents a well-differentiated, highly organized teratoma.

CONCLUSION

Fetus in fetu is a rare entity that typically presents as an abdominal mass in infancy or early childhood, which can be diagnosed in the preoperative period; complete excision of mass is curative and confirmatory.

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