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Case Report

An anomaly – Fetus in fetu: Case report

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ABSTRACT

Full term newborn female child along with a lump attached to the umbilical region by broad base pedicle, was delivered by Caesarian section. Prior to the Caesarian section in Anti-Natal Care, it was found like exomphalus on USG findings. But, the pre-operative radiological examination had revealed it as an irregular mass with some bony structure, limb buds, soft tissues with some fluid, all enclosed in a capsule which was attached to the umbilical region via a broad base pedicle. Mass was surgically removed. In that mass, some bony structure was found and upon its histo-pathological examination, various well developed organs, namely, the skin, large intestine, supra-renal gland, adipose tissue, blood vessels, etc were found. This well differentiated organogenesis confirmed this as the rare condition- Fetus in fetu.

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1. Introduction

Fetus in fetu is a rare anomaly. About 1 in 500,000 births, a malformed fetus grows within the body of its twin.¹ We have presented here, a full term female newborn along with a lump of mass, at umbilical region, delivered by Caesarian section. The pathological differentiation from teratoma has been well established.

In most of the cases, such condition is detected as an “abdominal mass”, in infancy. It is a parasitic twin of a diamniotic, monozygotic twin.² The anomaly of fetus in fetu can be explained by the Twin Theory, where the Fetus in Fetu is a diamniotic, monochorionic and monozygotic twin, which is internalized in the host’s (twin) body, during the anastomosis of vitelline circulation.³ Fetus in fetu is generally intraperitoneal or retroperitoneal, but it may also be found in scrotum, cranial cavity, etc.⁴ Different organs are inferred in this condition, namely, the vertebral column (91%), limbs (82.5%), central nervous system (55.8%), gastrointestinal tract (45%), vessels(40%) and genitourinary

tract (26.5%).⁵ This is a present study that covers a rare case of fetus in fetu, with the available literature.

2. Case Presentation

A full-term female baby was delivered, by Caesarian section along with a mass at her abdomen. In anti-natal USG findings, clinicians noticed that there was some exomphalous, at its umbilical region. But, the later radiological investigations confirmed that it was a lump.

The encapsulated lump was filled with some fluid, tissue-like structure and bony structure embedded in it. This was depicted as a radio-opaque shadow under X-ray findings.

2.1. Operative notes

An encapsulated mass of about 180gm in weight and 6”x4” approximately in dimensions, along with limb buds. Blood vessels were also found in the peduncle which connected the mass on the abdomen.

On gross examination, we developed intestine and de-calcified bone was seen.

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Fig. 1: Clinical photograph



Fig. 2: A X-ray photograph (Kidigram lateral view)



Fig. 3: A gross specimen showing large bowel, small bowel and rest of the tissues

On histo-pathological examination, following organs were found from different areas on the mass, which were further processed and examined:

1. Skin (Thick and thin)
2. Gland – Suprarenal Gland
3. Large intestine
4. Blood Vessels
5. Subcutaneous Adipose tissue

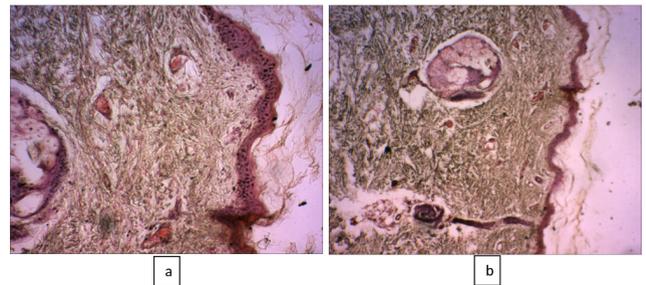


Fig. 4: a: Silde of thick skin; b: Slide of thin skin

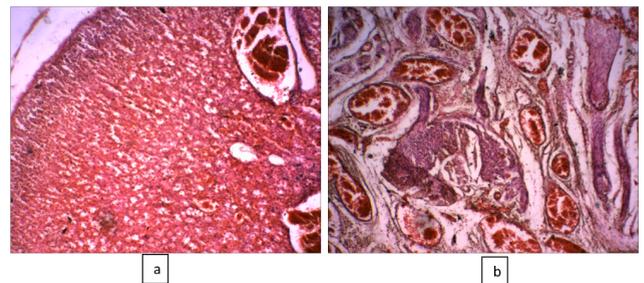


Fig. 5: a: Cross section of suprarenal gland; b: Cortex of suprarenal gland

3. Discussion

Fetus in fetu, first described by Johann Friedrich Meckel, is the malformed or parasitic monozygotic, diamniotic twin

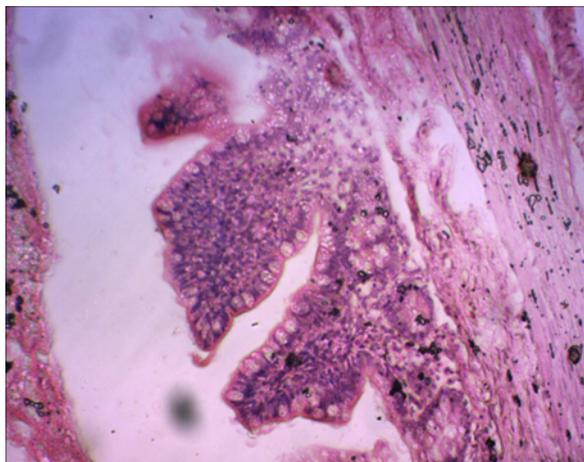


Fig. 6: Large intestine

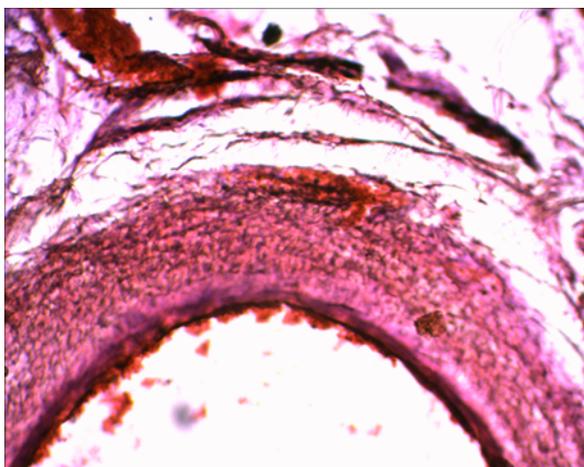


Fig. 7: Elastic artery

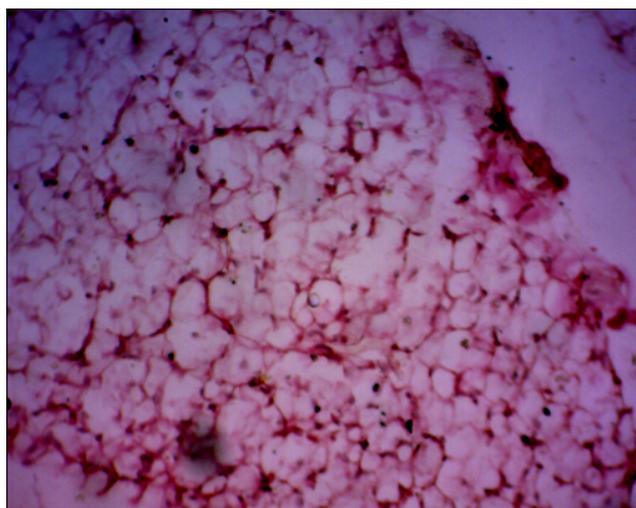


Fig. 8: Adipose tissue

that is found inside the body of a living child or somewhere in an adult.

We consider the evaluation of the post operative tumor markers and periodical ultrasound examination, an appropriate approach in our case study. Pathological studies revealed calcified bony structure on one side of fetal mass, grossly appearing clavicle (first ossified bone in our body).

Histo-pathological examination showed that there was a well formed large intestine, with large number of goblet cells in it. Suprarenal gland shows outer larger cortex and an inner smaller medulla. This suprarenal gland later on, in adults, consists of cortex cells that are reduced to half of its original size.

Besides, thick and thin skin along with the subcutaneous adipose tissue was found.

Gonads, adrenal gland, heart and a primitive respiratory unit, are very rarely found in the condition of Fetus in fetu. One of these, a well-developed suprarenal gland is found in our case study, which is rare finding.

The following criteria must be fulfilled for confirming the condition of Fetus in fetu:

1. Encapsulated mass attached to the newborn, by a peduncle, containing blood vessels.
2. Contains grossly recognized anatomic features like large intestine, part of axis of body (clavicle, vertebral column, ribs, sternum), etc.
3. Highly differentiated organs and organ systems are seen.

All of the above mentioned findings, in our case study confirm that, this case is of Fetus in fetu.

4. Conclusion

Teratoma is a tumor made up of tissues, such as hair, muscle, bone, etc. It mostly occurs in the gonads. It might be of either benign or malignant nature.

Dermoid, is a solid tissue, consisting of skin, hair follicle, internalized clumps of long hair, pockets of sebum, blood, fat, etc.

While, fetus in fetu is a condition, that where well defined, significantly differentiable organ and organ systems are found. Findings such as hair follicles, hair, and skin are also observed. Fetus in fetu might be either incorporated in the host's (twin) body or on its body.

Since, the various well defined organ systems like, the large intestine, suprarenal gland, skin, etc were found, along with the the bunch of hair on the surface of the mass, this case perfectly fits in the condition of Fetus in fetu and is clearly neither a case of dermoid nor teratoma.

Treatment of choice is complete resection. Post-operatively the newborn progressed well and was discharged. After 4 years of follow-up, she is well and with no significant medical issues.

5. Source of Funding

None.

Conflicts of interest

None.

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