Case Report

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An Unusual Location of Fetus in Fetu: A Rare Case Report

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Abstract

Fetus in Fetu is a rare congenital developmental anomaly, occurs in monozygotic diamniotic twin.It is due to the presence of one of the twin in the body of the other. Most frequently located in the retroperitoneal area, however it has been reported in other locations as well. Hence we report a case of Fetus in Fetu with unusual location. It is the first case in our institution among 323 twin pregnancy during january 2014 to june 2016

Keywords: Fetus in Fetu; Teratoma; Twin Pregnancy.

Introduction

Fetus in fetu is a rare benign congenital anomaly in which the malformed and parasitic fetus grows within the body of its twin. It occurs in the monozygotic diamniotic twin. Incidence is 1 per 500000 births. Most commonly located in the retroperitoneal area, other locations includes head, sacrum and scrotum. Hence, we report a case of Fetus in Fetu presented in the gluteal region, diagnosed and treated in our institution.

Case Report

A 27 year old G2P1L1 mother delivered a female baby through LSCS due to foetal distress. Baby cried immediately after birth, APGAR score was 7/10, weighing about 2.830kg. On examination of the baby there was a swelling in the right gluteal swelling extending upto the thigh,measuring about 15x15cm (Figure 1). On palpation there was loose bones palpable within the swelling(bag of bones) .

X-ray revealed a soft tissue mass with calcified osseous structures (Figure 2 & 3). Ultrasonogram gave an impression as Teratoma with multiple long bones with cartilaginous head with fluid and soft tissue component. CT scan showed a mass with solid,cystic and calcified components. AFP Levels were 1638 IU/ml, beta HCG 0.29m IU/ml. Baby was taken up for surgery with a pre operative diagnosis of polymyelia.Intraoperatively there was a vestigeal lowerlimb and rudimentary parts (Figure 4).

Grossly the specimen showed a malformed vestigeal lower limb, external genitalia and anal orifice leading to a blind pouch. Also received 2 fragments of acetabulum (Figure 5 & 6).

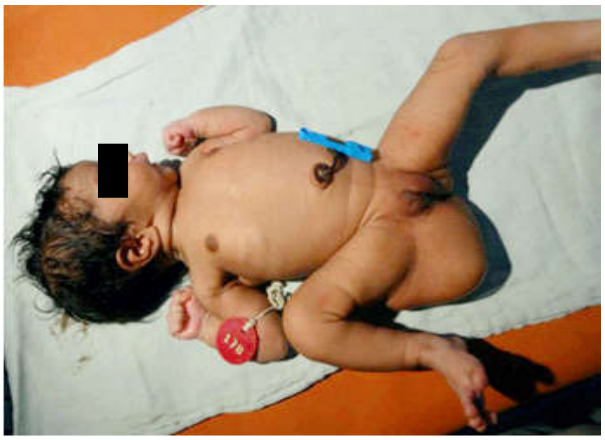

Fig. 1: Image showing swelling in the right gluteal region

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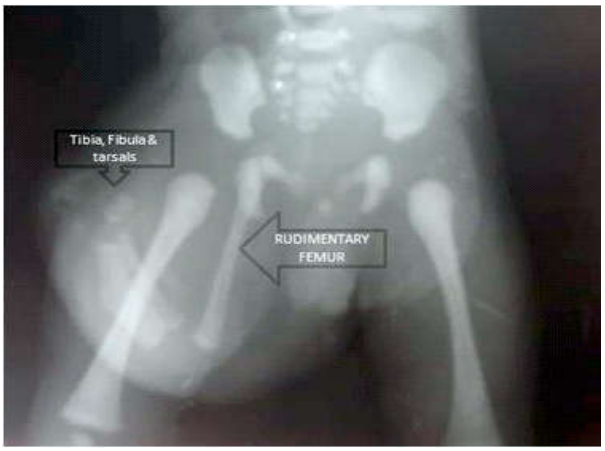

Fig. 2: X-ray images showing soft tissue mass and rudimentary bone

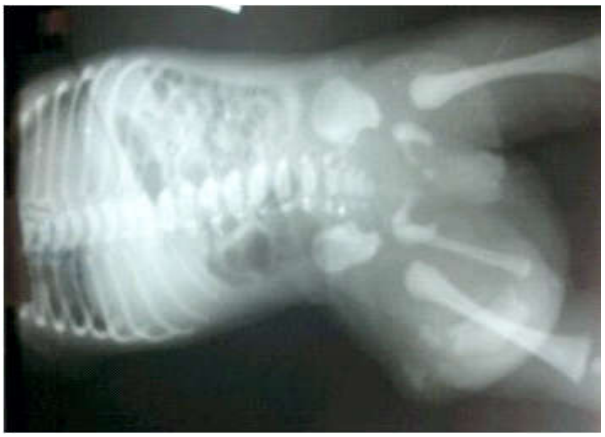

Fig. 3: X-ray images showing soft tissue mass and rudimentary bone

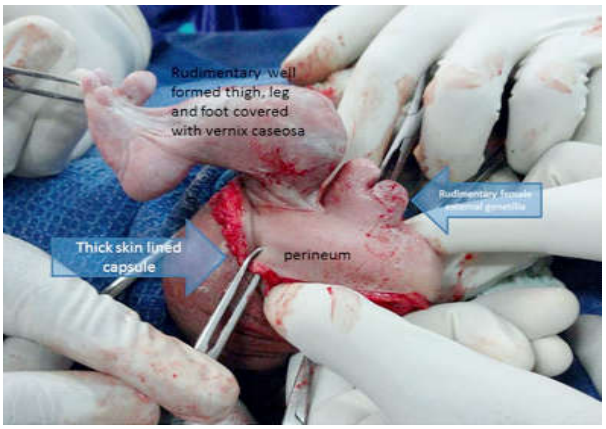

Fig. 4: Intraoperative image showing a vestigeal lower limb and external genitalia

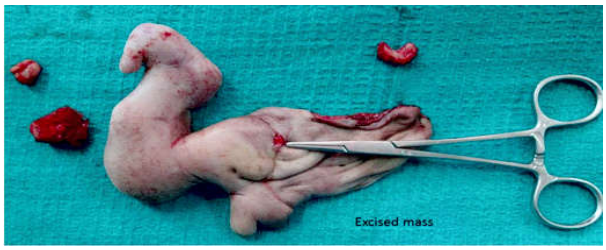

Fig. 5: Image showing external surface of the gross specimen-vestigeal lowerlimb, external genitalia, 2 fragments of acetabulum.

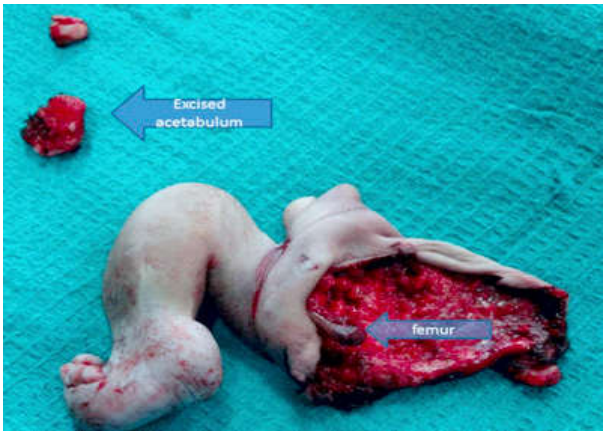

Fig. 6: Image showing external surface of the gross specimen-vestigeal lower limb, external genitalia, 2 fragments of acetabulum.

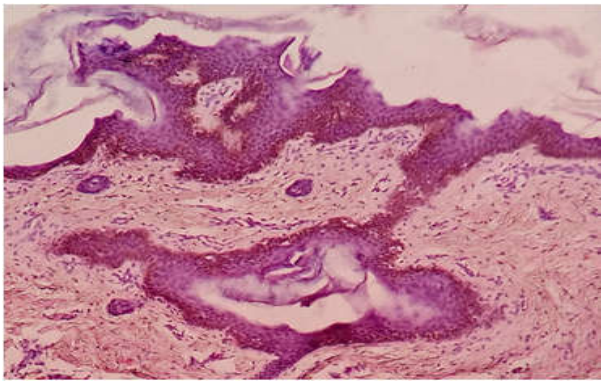

Fig. 7: Showing skin (H&E, 40X)

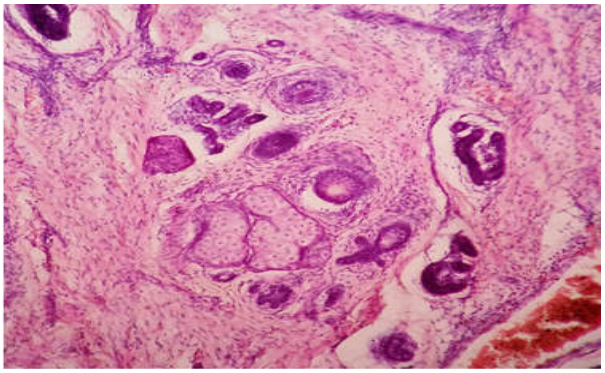

Fig. 8: Showing adnexal structure (arrow) H&E under 40x magnification

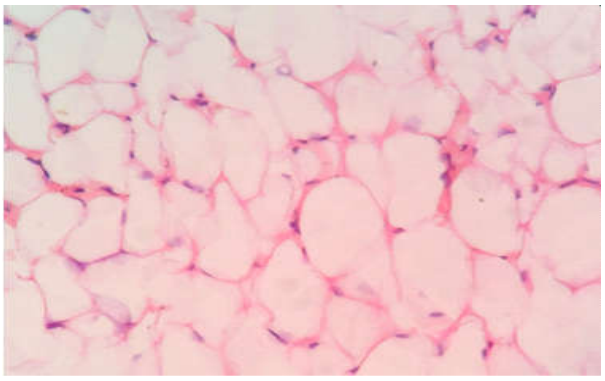

Fig. 9: Showing mature adipocytes(H&E, 40X), Nerve bundle (H&E 40X)

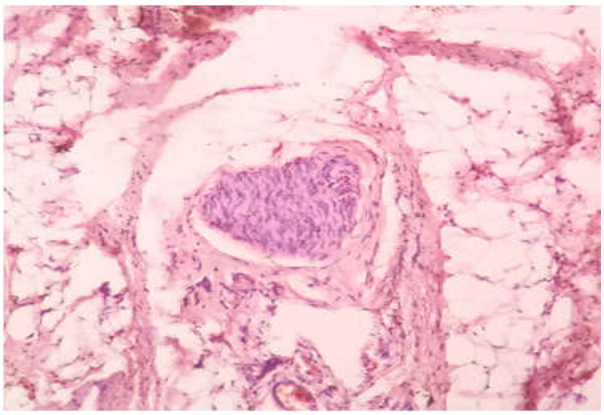

Fig. 10: Showing mature adipocytes(H&E, 40X), Nerve bundle (H&E 40X)

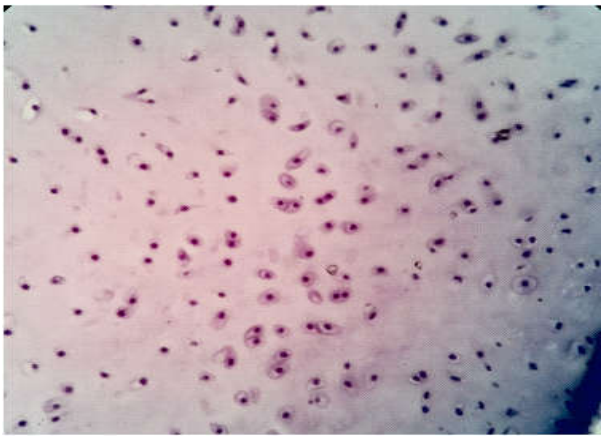

Fig. 11: Showing mature cartilage (H&E, 40X) and acetabulum (H&E,10X)

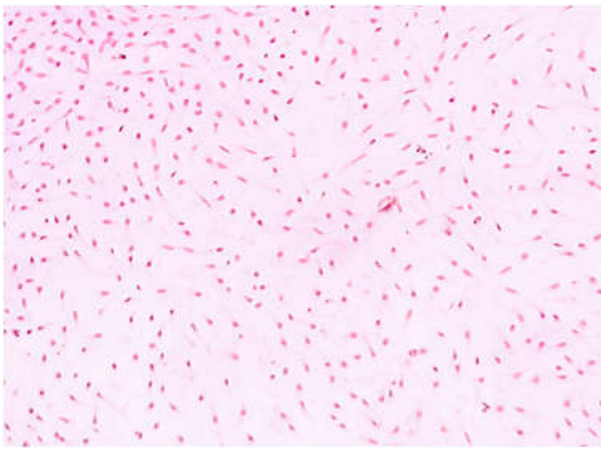

Fig. 12: Showing acetabulum(H&E, 40X& 10X)

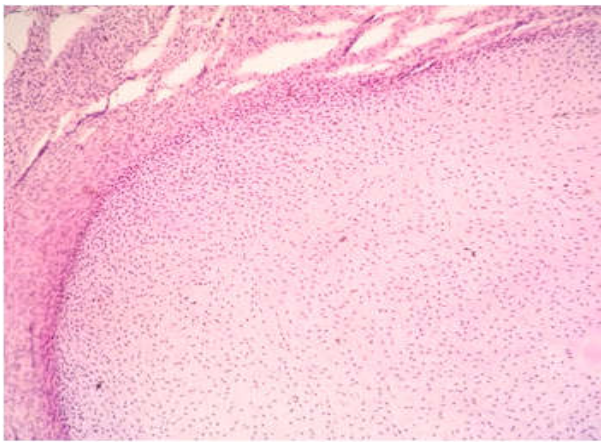

Fig. 13: Showing acetabulum(H&E,40X& 10X)

Multiple sections showed skin (Figure 7) with adnexal structures (Figure 8), mature adipocytes and nerve bundles (Figure 9 &10). Focal areas shows mature cartilages (Figure 11). Sections from the acetabulum shows cartilaginous areas (Figure 12 & 13). Pathological diagnosis was fetus in fetu. Post operative period was uneventful. Baby was discharged without any complications.

Discussion

Fetus in Fetu is a rare congenital anomaly,defined as the existence of parasitic, monozygotic, diamniotic fetus in the body of its twin. It is an unequal division of totipotent inner cell mass of the developing blastocyst leading to the inclusion of a smaller cell mass within a maturing sister embryo [1]. Incidence is 1/500000 births [2]. Most frequently located in retroperitoneal region(80%). It is always detected as an abdominal mass in infancy. Retroperitoneum being the commonest site, however there have been few reported cases of Fetus in Fetu in head, sacrum, scrotum, liver and mediastinum.

There are two theories for Fetus In Fetu. One being Teratoma theory , it may be highly differentiated form of dermoid cyst, itself a highly differentiated form of mature teratoma. Other theory is parasitic twin theory. Fetus in fetu may be a parasitic twin fetus growing within its host twin.Very early in the monozygotic twin pregnancy, in which both fetus share a common placenta. One fetus wraps around and envelope the other. The enveloped twin becomes a parasite.The parasitic twin is anencephalic and lacks some internal organs and as such it is unable to survive on its own [3].

In review of the literature showed that in about 9% of cases of Fetus in Fetu , no vertebral column was found even on the pathological examination. Therefore Gonzalea-Crussi suggested fetus in fetu to be applied to any structure in which the fetal form has a highly developed organogenesis or to the presence of vertebral axis [4].

Despite the requirement of the presence of a vertebral column for diagnosis,there are reports of cases without a vertebral column [5]. Different organs

can be seen in Fetus in Fetu ,including vertebral column 91%, limbs 82.5%, central nervous system 55.8%, gastrointestinal tract-45%, vessels-40% and genitourinary tract-26.5%.

Fetus in fetu may be highly differentiated from mature teratoma. Spencer criteria for diagnosis of fetus in fetu is 1. A distinct sac enclosing fetus. 2. Normal skin coverage, 3. Grossly obvious anatomic parts, 4. Attached to the host through a few relatively large blood vessels, 5. Association with gastrointestinal tract or neural tube.

Teratoma is an accumulation of pluripotent cells in which there is neither organogenesis nor vertebral segmentation. Teratoma is a malignant condition and fetus in fetu never becomes malignant.

A presumptive diagnosis can be made by ultrasonogram, X-ray, CT and MRI. Imaging modalities are useful especially in more developed Fetus in fetu and adult subjected before surgery to evaluate the risk of hemorrhage [6]. CT findings were those of a mass that consists of round or tubular collection of fat that surrounded a central bony structures. Characteristic CT appearance allows the correct prospective diagnosis of this rare entity [7]. With the help of current imaging modalities nowadays,it has been easier to diagnose FIF prior to surgery and even during prenatal periods [8].

Surgery is the curative. Post operative follow up with screening for tumor markers Alpha feto protein and beta HCG was often used and further support on the basis of malignant recurrence of Fetus in fetu [9].

Conclusion

Fetus in Fetu is a pathological condition that occurs from the abnormal embryogenesis in a diamniotic , monochorionic pregnancy. It should be differentiated from the teratoma which has malignant potential. Radiological modalities allow correct prospective diagnosis of this rare entity. Complete excision allows the confirmation of the diagnosis and lowers the risk of recurrence. Final diagnosis of fetus in fetu is not made until histopathological analysis.

References

1. Atul Sharma, Ashok Goyal and Santosh Sharma, Fetus in Fetu: A rare case report. Journal of Respiratory Medical Science 2012 May; 17(5):491-494.
2. Grant R, and Pearn. L.H(1969), Foetus in foetu. Med. J. 1969 August 1; 1016-1020.
3. Ibrahim Karaman, Denya Erdogan and Ozden Cakmak, Fetus in Fetu; A report of 2 cases, Journal of Indian Association of Pediatric Surgery 2008 Jan-Mar; 13(1):30-32.
4. Gonzalez-Crussi. F. Extragonadal Teratoma. Atlas of Tumour Pathology,Washington DC.Armed Forces, Institute of Pathology 1982.
5. Hoeffel CC, Nguyen KQ, Phan HT, Truong NH, Nguyen TS, Tran TT, Fornes P. Fetus in Fetu;a case report and literature reniew.Pediatrics. 2000; 105 6:1355-1344.
6. Seyed Hassen Hosseini Hooshyar, Hamid Zeinalinejad, Mehran Mossallami, Shahriar Dabiri Jahanbanoo Shahryan,Moienadin Safari,Hidden Fetus in Fetu in a male adult, Iranian Journal of Pathology, 2013; 8(4):267-272.
7. Patankar T, Fatterpekar GM, Prasad S.Maniyar A, Mukherji SK. Fetus in Fetu, CTappearnce, report of 2 cases, radiology, 2000; 214(3):735-737.
8. Majhi AK, Saha K, Karmakar M, Sinha KK, Sen A, Das S, Fetus in Fetu-A Mystery in Medicine, Scientific world journal, 2007; 7:252-257.
9. Arlikar JD, Mane SB, Dhende NP, Sanghavi Y, Valand AG, Butale.PR., Fetus in Fetu-2 case report and review of literature, Pediatric surgery Int 2009; 25(3):289-292.