

Sacrococcygeal Teratoma in A Thirty week Foetus: A Case Report

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Abstract: Teratomas are tumours of one or more of the three germ cell layers. It originates from remnant totipotent embryonic cells (primitive streak) during migration. Teratoma in neonates, infants and children (<4year), in adults is rare. Sacrococcygeal region is the most common site. The present study is a case report of sacrococcygeal teratoma in a 30 week still birth foetus. The study was conducted in Department of Anatomy, RIMS and the case was found among the routinely collected fetuses for thesis and research purposes, from the Obs & Gyna, Dept. RIMS. The mass was measured, radiologically examined using digital X-Ray, dissected and then histologically examined by routine H&E staining. Mass measured 17x14 cm and 15x12 cm on right and left sides. Solid, cystic areas and brownish paste like haemorrhagic areas were observed within the mass. Dissected foetal tissue grossly showed developing bones namely tibia, femur and hip bone with associated muscles. Histologically, adipose tissues, foetal cartilage, developing hair follicles were seen abnormally. Foetal studies on sacrococcygeal carcinoma by gross dissection and histological method are rare. Identification of nature of cells by histology may influence the model of treatment.

Key words: Foetal sacrococcygeal teratoma, totipotent, primitive streak.

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I. Introduction

Remnants of the primitive streak may persist and give rise to a sacrococcygeal teratoma. Because they are derived from pluripotent primitive streak cells, these tumors contain tissues derived from all three germ layers in incomplete stages of differentiation.¹ Sacrococcygeal teratoma is the most common congenital germ cell tumor, with an incidence of 1 in 35,000 to 40,000 live births and a female predominance (3: 1 to 4:1 ratio).² Most Sacrococcygeal teratomas are found in neonates, infants and children below 4 years but reported in adult also.³

II. Case Report

The study was conducted in Department of Anatomy, Regional Institute of Medical Sciences, Imphal. The case was found among the routinely collected fetuses for thesis and research works, from the Obs & Gynae Dept. RIMS. It was a 30 week male foetus, still birth (caesarian section). Foetus was at first inspected for additional anomalies, then measured, radiologically examined (digital x-ray) and the mass was dissected. The specimens for histological processing were collected then histologically examined by routine H&E staining method. Mass measured 17x14 cm and 15x12 cm on right and left sides [Fig. 1]. Incision was given transversely on mass 1 cm above the iliac crest on dorsal aspect. One more transverse incision was given 5 cm below first incision and then a vertical incision was given at the median plane. Skin was then reflected laterally [Fig. 2, 3]. Numerous solid areas, cystic areas and brownish haemorrhagic paste like areas were observed within the mass [Fig. 4, 5]. Further, on deep dissection, presence of developing foetal tissue was observed [Fig. 6]. The foetal tissue showed presence of developing tibia, femur and hip bone with associated muscles [Fig. 7]. On digital X-Ray, the masses were connected with each other and to the sacrum [Fig. 8, 9]. On histological analysis, presence of adipose tissue, developing foetal cartilage, developing hair follicles and glands were seen [Fig. 10, 11, 12, 13, 16]. Muscles, developing blood vessels and lining epithelium of stratified squamous type were observed [Fig. 14, 15, 17].

III. Discussion

Sacrococcygeal teratomas are the most common tumor in newborns and have an incidence of approximately one in 35,000. Most affected infants 80% are female.¹ Remnants of the primitive streak persist in the sacrococcygeal region. These clusters of pluripotent cells proliferate and form tumors, known as sacrococcygeal teratomas, which commonly contain tissues derived from all three germ layers. Teratomas may also arise from primordial germ cells that fail to migrate to the gonadal ridge.⁴ Grossly sacrococcygeal teratoma

can be cystic, solid, or of mixed solid and cystic consistency. Cystic degeneration as well as necrosis and hemorrhage are often present. The mature elements such as skin, cartilage, respiratory epithelium were seen in the lining of cystic areas of the tumour.⁵ The present study has also established the presence of the tissues derivative of germ layers namely ectoderm and mesoderm.

IV. Conclusion

Sacrococcygeal Teratoma are most common solid tumors in the neonatal period originating from totipotent embryonic cells containing ectoderm, endoderm and mesoderm as supported by this study (ectodermal and mesodermal derivatives established). Foetal studies are rare. During foetal period diagnosis and management assumes importance to prevent complications. Identification of nature of cells in the tumour may influence the model of treatment.

References

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Fig. 1: sacrococcygeal teratoma 17x14cm. 15x12cm



Fig. 2: Incision line

Fig. 3: Showing reflection of skin

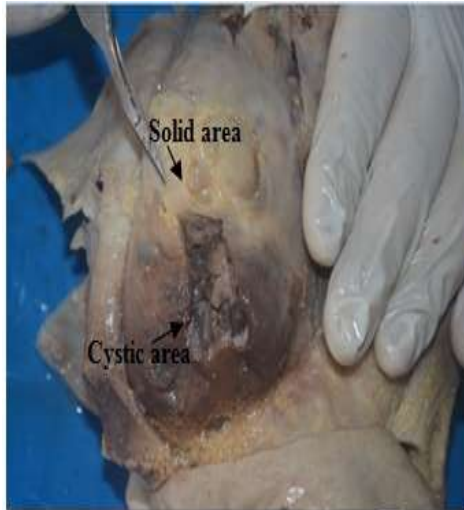


Fig. 4



Fig. 5

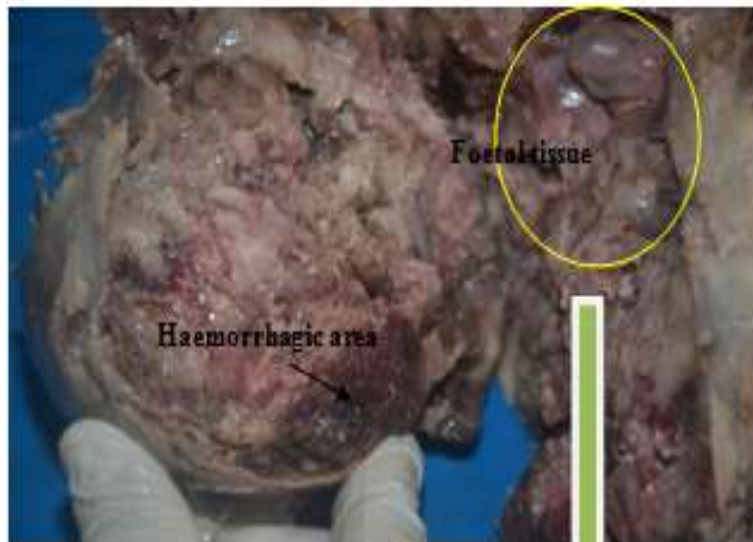


Fig. 6

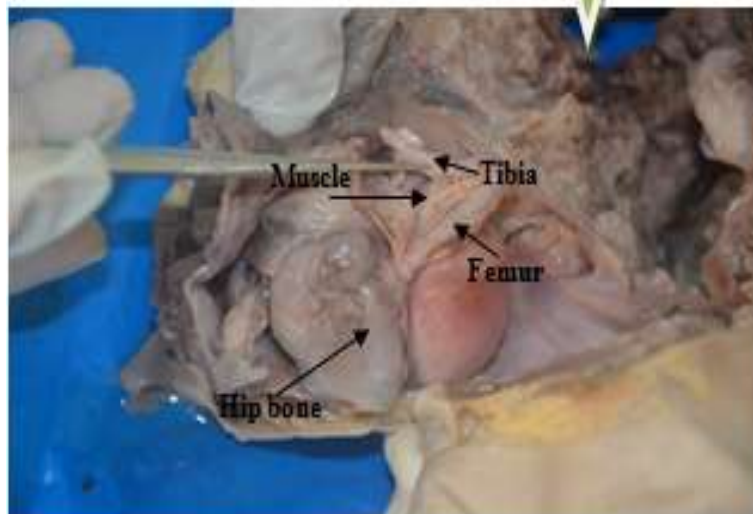


Fig. 7



Fig. 8



Fig. 9

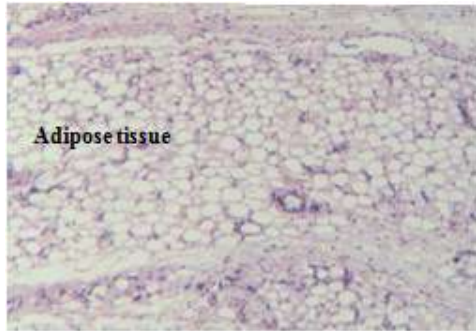


Fig. 10

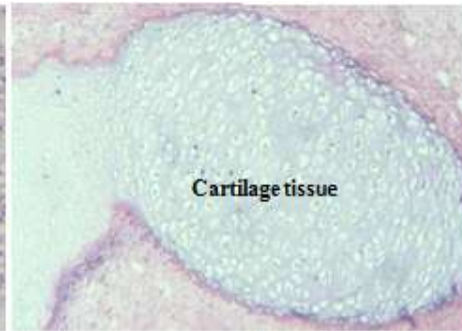


Fig. 11

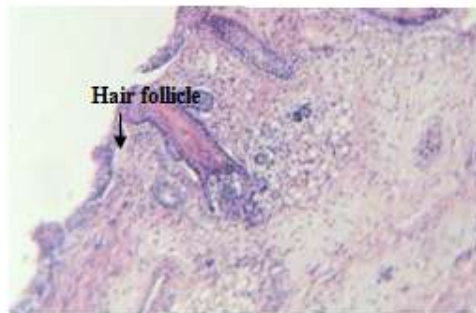


Fig. 12

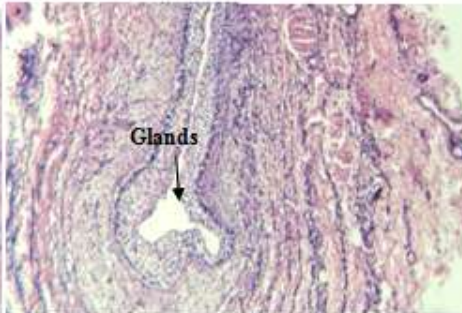


Fig. 13

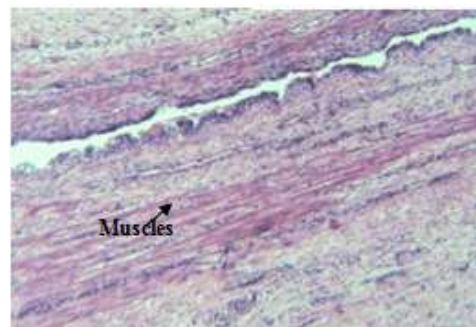


Fig. 14



Fig. 15

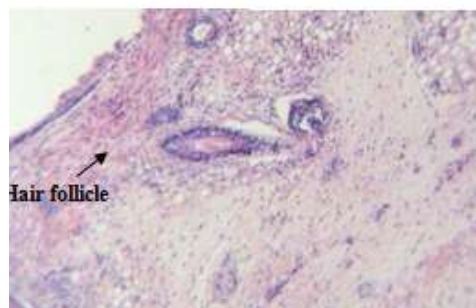


Fig. 16



Fig. 17