Mature Cystic Teratoma Arising in Posterior Cranial Fossa: A Rare Case Report

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Abstract

Intracranial mature teratoma is a very rare neoplasm. Its location in posterior fossa of cranium is extremely rare, only few cases have been reported in English literature. Though rare, it nevertheless warrants greater emphasis than it receives in the literature. The authors report a case of mature cystic teratoma in posterior cranial fossa in a 5 month old female child. On MRI examination heterogeneously enhancing solid cystic lesion measuring 4.2x4.0x3.9 cm was noted in posterior fossa involving left cerebellar hemisphere. On histopathological examination confirm diagnosis of mature cystic teratoma was established.

Keyword: Teratoma, Intracranial, Neoplasm, solid cystic, mature.

INTRODUCTION

Intracranial mature teratomas represent a rare lesion accounting for 0.3 – 0.6% of all intracranial neoplasm and in which 2%–5% of all teratomas in infants.1 Intracranial teratomas are more commonly reported near the midline structure including the pineal gland and suprasellar region [2, 3]. Their location in posterior fossa is uncommon [3]. Pathologically, teratomas are classified into mature and immature type. Mature teratomas are composed of well-differentiated mature tissue represents each of the three germ cell layer of embryo that is ectoderm, mesoderm and endoderm, whereas immature teratomas contain various immature tissue, usually neuroepithelium [4]. Here the author report a case of mature cystic teratoma in posterior fossa of 3 month old female child.

CASE REPORT

A 5 month old female child presented with unexplained excessive cry and vomiting for 20 days. On physical examination there was eyelid drooping and large head with head tilt for 20 days. On MRI examination, an ill defined heterogeneously enhancing solid cystic lesion measuring 4.2x4.0x3.9 cm displaying signal intensity alteration with non enhancing necrotic areas with mild adjacent perifocal edema in posterior fossa involving left cerebellar hemisphere, adjacent part of vermis and ipsilateral cerebellar peduncles (Figure-1). The lesion was showing foci of calcification/hemorrhage on MRI finding and having differential diagnosis of atypical teratoid & rhabdoid tumor, ependymoma, teratoma. On basis of clinicoradiological finding craniotomy and total excision of tumor mass was done. The per operative finding was solid cystic SOL, mildly vascular, filling the posterior fossa.

Gross examination having several bits of tissue, the largest measuring 4.0x3.0 cm in dimension. Cut surface showed grayish white solid area along with cystic cavities. Few of the bits was hard in consistency.

Histopathological examination showed the tissue derived from ectoderm, mesoderm and endoderm. The ectoderm comprising of mature glial tissue (Figure-2), nerve bundles and stratified squamous epithelium, mesodermal component having adipose tissue, blood vessels, cartilage (Figure-3) and bone trabeculae, endodermal component comprising of few glandular structure lined by columnar epithelium (Figure-3). Postoperative clinical course was uneventful and preoperative symptoms were relieved.
DISCUSSION

Intracranial mature teratomas represents a rare neoplasm [1]. Teratomas are the most frequently occurring germ cell tumor. These tumor arise in both gonadal (ovary and testis) and extragonadal location. Gonads are most common site of origin for teratomas. Extragonadal teratomas locations are sacrococcygeal region (45-65%), anterior mediastinum (10-12%), retroperitoneum (3-5%), cervical area (3-6%), presacral area (3-5%) and central nervous system (2-4%) [5]. Intracranial teratomas commonly originate near the midline structure because its greater potential for misplacement of embryonal tissue. In CNS, pineal gland and suprasellar region is the most common site of origin, whereas least common site of origin in brain is posterior fossa [2-5]. Posterior fossa teratomas have occurred with predominance of female whereas male predominance found in teratomas of the pineal and suprasellar region [5]. Here the author reported a case of 5 month old female child with mature cystic teratoma arising in posterior fossa region. Teratomas occurring in infancy and early childhood are generally extragonadal, whereas those presenting in older children more commonly occur in gonads [5]. Teratomas can be histologically classified into mature and immature teratoma. Mature teratomas are benign in nature and composed of well differentiated mature tissue while immature teratomas are composed of undifferentiated fetal tissue. Definitive diagnosis of teratoma was made by histopathological examination to see the tissue.
CONCLUSION

We conclude that mature cystic teratoma in unusual location and age of patient but must include in the differential diagnosis of paediatric posterior fossa tumor. Surgery is the main mode of treatment.

Conflict of interest: Nil

REFERENCES


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