Intracranial dermoid cyst: A case report.

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ABSTRACT
Dermoid cyst of brain is a rare tumor arising due to embryogenic defect. It comprises only about 0.3% of intracranial tumors. A 6 year old female child was admitted with complaints of headache since last 6 months. The brain CT scan & MRI offered a diagnosis of dermoid cyst of brainstem. The patient was operated & histopathology report confirmed the diagnosis of dermoid cyst. Patient was discharged after five days without any neurological deficit.

INTRODUCTION:
Dermoid cyst is a rare lesion comprising only about 0.3% of intracranial tumors arising from ectodermal elements. They are less common than epidermoid cysts which account for only 1% of all intracranial tumors. Dermoid cysts, like epidermoid cysts are lined by stratified squamous epithelium. Unlike epidermoid cysts, however they also have epidermal appendages such as hair follicles, sweat & sebaceous glands. Dermoid cysts of cranial vault are usually in midline location. We received a rare case of dermoid cyst in cerebellar hemisphere.

CASE REPORT:
A six year old female was admitted with complaints of headache since last 6 months. Other sign & symptoms of raised intracranial tension were absent. Systemic examination revealed no abnormal findings.

Radiological findings: The brain CT scan showed left paravermian cystic lesion measuring 3.4x2.6cm with wall calcification. On post contrast study, the lesion showed peripheral wall enhancement. The MRI showed a well defined thick walled heterogenous cystic lesion in the cerebellar hemisphere and adjoining vermis with calcification. Radiological findings were suggestive of dermoid cyst with secondary infection.

Morphological findings: The patient was operated for the same and we received a single cystic mass of size 3x2x2cm. The cut surface showed keratin material and few hair tufts. Histology showed cyst wall lined by stratified squamous epithelium with keratin material, sebaceous glands and hair follicles. The diagnosis of dermoid cyst was offered. The patient was discharged after five days without any neurological problems.

DISCUSSION:
Intracranial dermoid cysts are rare benign, slow growing neoplasms commonly occurring at midlines in posterior cranial fossa. They arises from ectodermal elements due to implantation of abnormal tissue during neural tube closure during embryogenesis. About half of the dermoid cysts are associated with other congenital malformation, most commonly spina bifida occulta and meningomyelocele. The usual age of clinical presentation of this cyst is childhood and early adolescent. Intracranial dermoid cysts tends to be associated with more rapid onset of symptoms than...
epidermoid cysts and raised intracranial pressure due to obstructive hydrocephalus is not uncommon as a presenting feature in posterior fossa tumor. In our case, there was only headache without any other sign & symptoms of raised intracranial tension. Focal neurological deficits are varied and relate to the site of the lesion.

In CT scan, intracranial dermoid cyst typically appear as non-homogenous lesion which do not enhance after administration of contrast media. The calcification is more seen in epidermoid cysts. The MRI shows a signal intensity similar to fat on both T1- & T2-weighted images. On gross, dermoid cysts are well defined rounded masses with a firm outer capsule. It is often densely adherent to surrounding structures, including brain or spinal cord tissue. On cut section, cysts are filled by a thick, greasy, yellowish sebaceous material with tangled hairs. Very rarely, teeth may also be encountered.

The histologically, the cysts are lined by a stratified squamous epithelium with keratin formation. Subepithelium shows skin appendages like hair follicles, sweat & sebaceous glands. Rarely foci of cartilage or bone are present. In our case, we encountered hair follicles. Dermoid cysts should be differentiated from epidermoid cysts, craniopharyngiomas, colloid cysts and neurological cysts. Treatment of dermoid cysts consists of surgical excision which should be as complete as possible. In many cases, however, adherence of the cyst to surrounding structures precludes safe total removal of the capsule, especially in posterior fossa tumors. In our case, surgeon could remove the total cyst. The postoperative follow up was uneventful. There was no neurological deficit.

CONCLUSION:
Intracranial dermoid cyst is a rare lesion commonly occurring at midlines in posterior cranial fossa. Clinically, patients present as signs and symptoms of raised intracranial tension. The CT scan & MRI brain shows the diagnostic features. On complete surgical resection, recurrence is less common.

Fig. 1. Surgical photograph of intracranial cyst excised showing pultaceous material

Fig. 2. Computed tomographic intracranial dermoid cyst.

Fig. 3. Microphotograph showing cyst wall lined by stratified squamous epithelium with many sebaceous glands.
REFERENCES: