ORIGINAL RESEARCH PAPER

Radio Diagnosis

A RARE CASE REPORT OF PINEAL EPIDERMOID CYST PRESENTING WITH SYMPTOMS OF HYDROCEPHALUS

KEY WORDS: Pineal epidermoid cyst, obstructive hydrocephalus, urinary incontinence, gait disturbances

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ABSTRACT

Epidermoid cysts may be congenital (most common, arising from ectodermal inclusion during neural tube closure 8) or acquired (post-surgical or post-traumatic implantation). Pathologically, intracranial epidermoid cysts are identical to the petrous apex and middle ear congenital cholesteatomas. They differ from dermoid cysts which have both epidermal and skin appendages such as hair and sebaceous cysts and mature teratomas which have all three layers.

They have a thin capsule which is made of a thin layer of squamous epithelium, which macroscopically is white and pearly, and may be smooth, lobulated, or nodular. Internal cystic components are often filled with desquamated epithelial keratin and cholesterol crystals; grossly appearing as a creamy, waxy material. Cholesterol and keratin components account for their distinct imaging characteristics 2.

INTRODUCTION :

Intracranial epidermoid cysts are benign neoplastic lesions which accounts for 1 % of intracranial tumours out of which 3-4 % occurs in pineal gland region. Cerebellopontine angle and suprasellar region are the most common site of intracranial epidermoid cyst. Embryologically, they are formed from ectodermal inclusions during neural tube closure from third to fifth week of embryogenesis.

Clinically, the patient presents with complaints of headache, seizures , gait disturbances , urinary incontinence due to pressure effect over the corticospinal tract and periventricular white matter damage secondary to obstructive hydrocephalus. Parinaud syndrome may occur secondary to tectal plate compression which comprises convergence retraction nystagmus upward gaze palsy and pupillary hyperreflexia.

On, contrast CT imaging, the lesion appears as non-enhancing hypodense lesion, sometimes lesion appears hyperdense due to the presence of proteinaceous content or due to haemorrhage. Rarely it shows peripheral calcifications.

In MR findings, the lesion usually appears isointense to CSF on T1 and T2 images , sometimes hyperintense in T1 due to proteinaceous content ,shows diffusion restriction in DWI , low value in ADC maps and not completely suppressed on FLAIR images.

DWI and ADC imaging helps to differentiate epidermoid cyst from the pineal cyst and arachnoid cyst which do not show diffusion restriction. Epidermoid cyst gets partially suppressed on FLAIR images whereas arachnoid cyst completely suppressed on FLAIR images. Absence of contrast enhancement helps to differentiate from pineal gland neoplasms like germinoma , pineocytoma and pineoblastoma.

If symptomatic, patient may require pre or post Ventriculoperitoneal shunt.

Surgical removal with its capsule is the mainstay of treatment. Therapeutic stereotactic aspiration may be used as a part of management.

Differential Diagnosis:

Pineal gland cyst
Pineocytoma
Pineoblastoma
Arachnoid cyst

Case Study:

A 58-year male patient presented with complaints of headache, urinary incontinence and gait disturbances for the last three months. Patient has been referred to radiology department for MRI brain imaging for these complaints.

Imaging Findings :

MR findings suggestive of T1 heterogenously hypointense and T2 heterogeneously hyperintense lesion in pineal gland region ,which shows partial fluid suppression in FLAIR images.

The lesion shows diffusion restriction in DWI sequence and shows low value in ADC map.

On contrast study, no enhancement is seen within the lesion.

The lesion causes compression over the tectal plate and obliteration of aqueduct of sylvius with resultant moderate obstructive hydrocephalus.

On non contrast CT imaging, the lesion appears as hypodense fluid density lesion.

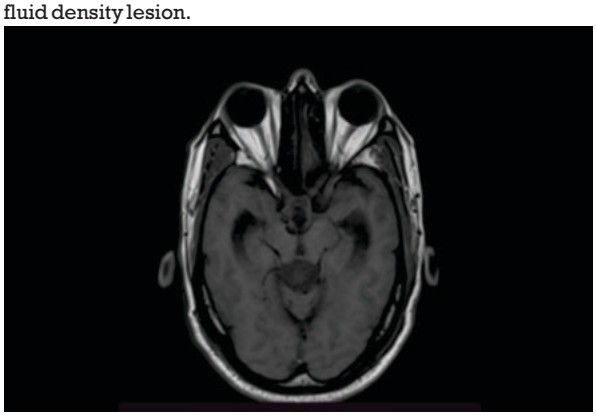


Figure 1 MR Axial T1WI shows heterogeneously hypointense

lesion in pineal region.Central mild hyperintensity due to proteinaceous content of lesion.

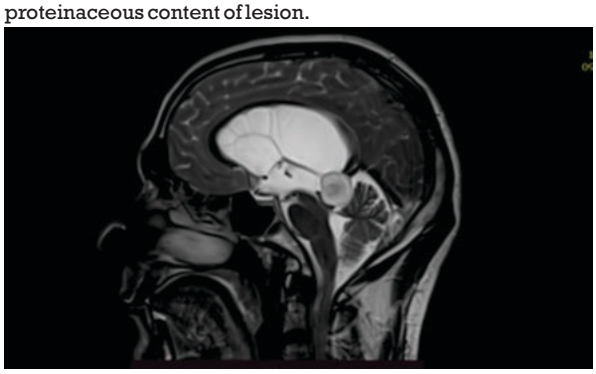


Figure 2 : MR T2 sagittal image shows heterogenously hyperintense lesion in pineal region causing compression over tectal plate resultant obstructive hydrocephalus.

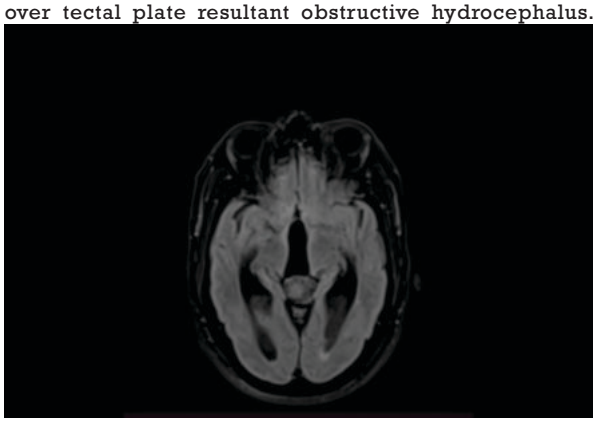


Figure 3 : MR FLAIR image shows partial fluid suppression in the lesion as compared to CSF.

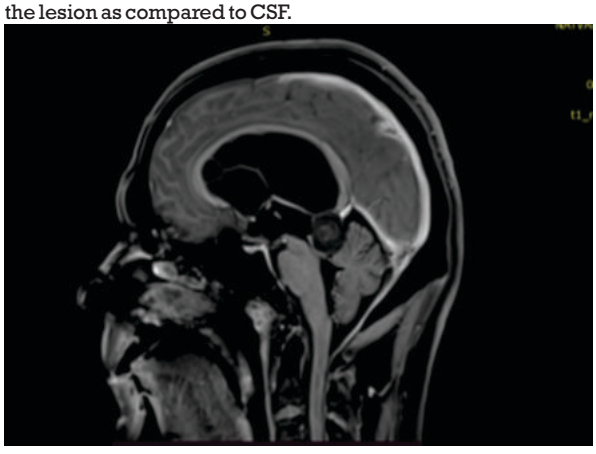
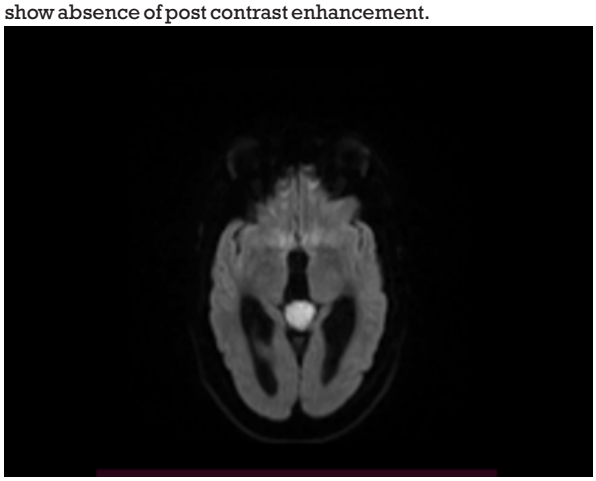


Figure 4 : on Post contrast T1WI saggital images , the lesion show absence of post contrast enhancement.



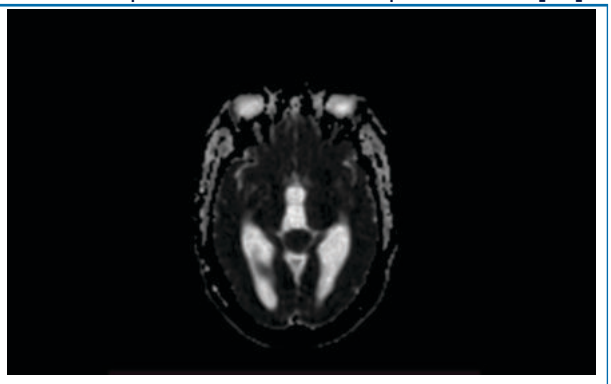


Figure 5 & 6 : DWI shows diffusion restriction & ADC images shows corresponding low value

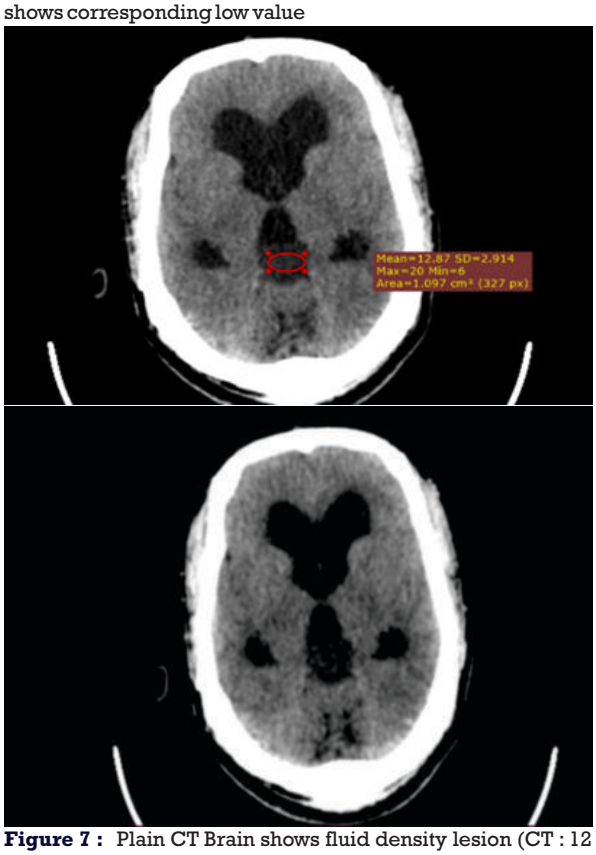


Figure 7 : Plain CT Brain shows fluid density lesion (CT : 12 HU) in pineal region .

CONCLUSION :

MRI plays key role in the diagnosis of pineal gland masses based on specific appearance of the lesion and it's also helps in further management .

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