

Photoclinic

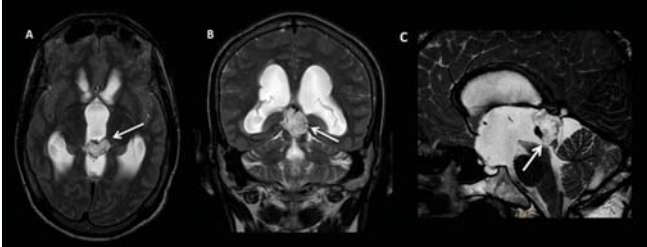


Figure 1. T2 weighted axial (A) and coronal (B) images show well defined lobulated hyperintense lesion in the pineal region. High resolution DRIVE (driven equilibrium radio-frequency pulse sequence) sagittal (C) image shows compression of the cerebral aqueduct by the hyperintense lesion resulting in moderate dilatation of both lateral and third ventricles, suggesting noncommunicating hydrocephalus.

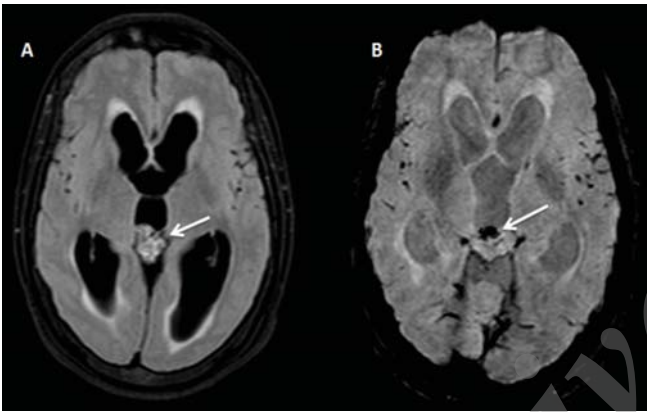


Figure 3. FLAIR weighted axial (A) image shows the hyperintense lesion in the pineal region. Susceptibility weighted axial (B) image shows displaced pineal calcification along the anterior aspect of the lesion.

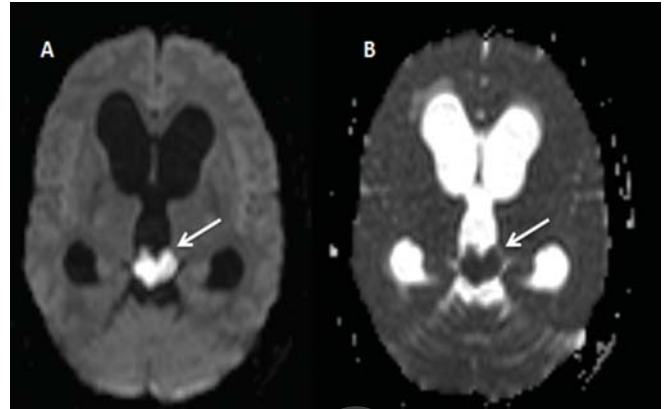


Figure 2. Diffusion weighted axial (A) image reveals restricted diffusion within the lesion. The corresponding ADC map (B) shows hypointensity, suggesting true restriction of diffusion.

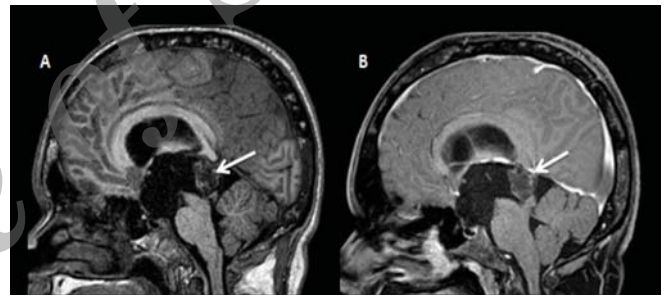


Figure 4. Precontrast T1 weighted sagittal (A) image shows hypointense CSF signal intensity lesion which shows thin peripheral rim enhancement on post contrast T1 weighted sagittal (B) image.

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A 35-year-old male presented to our institute with a history of increasing headache, vomiting and blurring of vision since 6 months ago. Clinical examination revealed vertical gaze palsy. Bilateral papilledema was found on ophthalmoscopic fundus examination. MRI brain reveals well defined lobulated T2 weighted hyperintense lesion in the pineal region (Figure 1). On diffusion weighted images (DWI), the lesion shows restricted diffusion

with low ADC (Apparent Diffusion Coefficient) values (Figure 2). On FLAIR weighted images, the lesion is mildly hyperintense compared to the rest of brain parenchyma (Figure 3). A small SWI (Susceptibility weighted Imaging) hypointense focus is seen anterior to the lesion, suggesting displaced pineal calcification (Figure 3). The lesion is hypointense on T1 weighted images and shows thin peripheral rim enhancement on post contrast T1 weighted images (Figure 4). There is compression of tectal plate and cerebral aqueduct with resultant moderate dilatation of both lateral and third ventricles, suggesting noncommunicating hydrocephalus.

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**What is your diagnosis?
See the next page for diagnosis**

Epidermoid cyst is a benign congenital inclusion cyst of ectodermal origin. It comprises approximately 1%–2% of primary intracranial tumors. The pineal region is an uncommon location for epidermoid cyst and contributes to around 3%–4% of all intracranial epidermoid cysts.¹

Pineal region epidermoid cysts are usually slow growing and, in spite of being congenital cysts, they generally become symptomatic at 20–40 years of age. The common signs and symptoms of the pineal region masses include nausea, vomiting and blurring of vision due to compression of cerebral aqueduct, resulting in hydrocephalus and papilledema. They can also cause diplopia and vertical gaze palsy due to compression of the tectal plate.^{2,3}

The intracranial epidermoid cysts are hyperintense lobulated lesions on T2 weighted images. They are hypointense on T1 weighted images and show near CSF signal intensity; however, they do not show fluid suppression and remain hyperintense on FLAIR weighted images. This allows distinction between epidermoid cyst and arachnoid cyst which typically shows CSF signal intensity on all pulse sequences.⁴ Another useful sequence allowing differentiation between epidermoid cyst and arachnoid cyst is DWI. The epidermoid cysts show true restricted diffusion with corresponding low values on ADC maps while arachnoid cyst display T2 shine through effect. These classical findings on diffusion weighted and FLAIR weighted sequences are very helpful

for correct diagnosis of epidermoid cyst.^{5,6} On post contrast study, the epidermoid cyst usually shows no internal enhancement; however, peripheral rim enhancement may be seen.

In conclusion that the pineal region is an uncommon location for epidermoid cyst. Characteristic imaging findings on diffusion weighted and FLAIR images are useful to differentiate between intracranial epidermoid cyst and arachnoid cyst.

References

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