



A RARE CASE REPORT OF RUPTURED INTRACRANIAL 4TH VENTRICLE DERMOID

Radiodiagnosis

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KEYWORDS

Dermoid Cyst, Embryological, Rupture, 4th Ventricle.

INTRODUCTION:-

Intra cranial dermoids are rare (< 0.5% of primary intracranial tumours) and very rare in posterior fossa (eg:-in 4th ventricle, cisterna magna and basal cistern). Intracranial dermoid cysts are benign, slow growing lesions due to sequestration of surface ectoderm along course of normal embryonic invaginations / inclusion of cutaneous ectoderm at time of neural tube closure (3rd to 5th week of embryogenesis). It is a squamous epithelial cyst, contains dermal elements including hair follicles, sebaceous and sweat glands.

Symptoms are usually due to local mass effect and slowly progressive nature. Very rarely spontaneous rupture of large dermoid can occur and cause significant morbidity/mortality. It may cause aseptic chemical meningitis.

So early diagnosis and appropriate treatment are essential for improving the disease outcome

CASE DESCRIPTION:-

A 44 yr old female patient presented to our hospital (Saveetha medical college and hospital) in emergency department with severe headache for 1 week and recent onset of 2 episodes of generalized seizures. Patient had history of episodic chronic headache for past 6 months.

On clinical examination patient was neurologically unremarkable.

Initially CT was done:-

Shows mixed fat and soft tissue dense lesion in fourth ventricle. Few fat densities noted in bilateral frontal horns HU (-40 to -80). A well defined calcific lesion (HU 400-600) with broad base towards dura noted along left occipital bone.

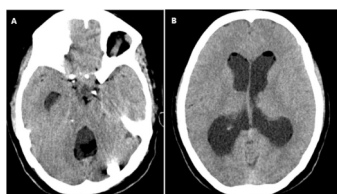


Figure 1:- Axial non contrast CT: **a)** Mixed fat and soft tissue dense lesion in fourth ventricle. A well defined calcific lesion (HU 400-600) with broad base towards dura noted along left occipital bone. **b)** Fat densities noted in non dependent position (fat fluid level, HU (-40 to -80)) of frontal horns of bilateral lateral ventricles.

MRI brain shows:-

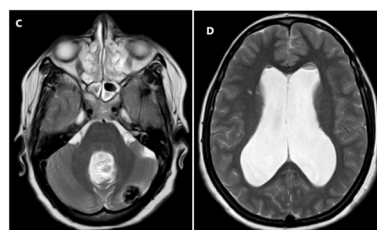
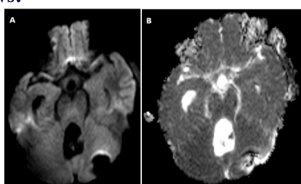


Figure 2:- MRI **a)** DWI, **b)** ADC, **c** & **d)** T2 AXIAL: **a** & **b)** No diffusion restriction. **c)** heterogeneously hyperintense lesion in 4th ventricle **d)** fat fluid level in frontal horns of bilateral lateral ventricles and Severe hydrocephalus.

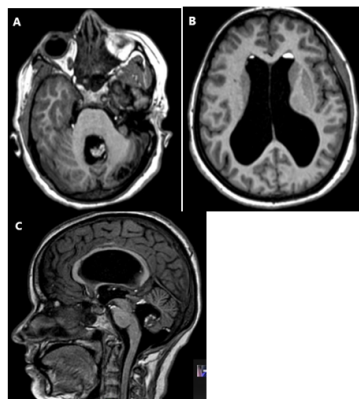


Figure 3:- MRI **a** & **b)** T1 axial and **c)** T1 Sagittal: **b)** hyperintensities in bilateral lateral ventricle (frontal horns) at non dependent position), Hydrocephalus and **b)** hyperintensities in 4th ventricle.

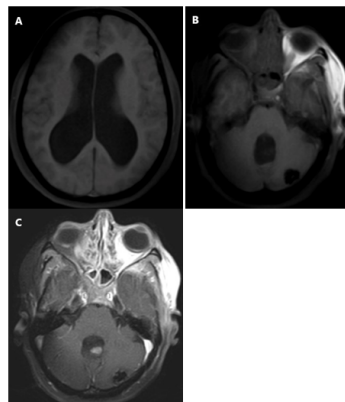


Figure 4:- MRI **a** & **b)** T1 fat suppression & **c)** T1 fat suppression Post contrast (Gd): **-a** & **b)** Shows complete suppression of fatty component

c.) Predominantly non enhancing cystic lesion with small internal nodular enhancing component in 4th ventricle. A well defined calcified extra axial lesion in the poster superior aspect of left cerebellum showing peripheral irregular rim enhancement – likely represent calcified meningioma.

CONCLUSION:-

Predominantly non enhancing cystic lesion with small internal nodular enhancing component in 4th ventricle which shows predominantly fatty component with fat fluid level in non dependent position of bilateral lateral ventricles and obstructive hydrocephalus –represent **Ruptured dermoid in 4th ventricle with extension into bilateral lateral ventricles.**

Intracranial dermoid cysts due to sequestration of surface ectoderm at time of neural tube closure. Intracranial dermoid cysts are composed of a thick fibrous capsule lined by stratified squamous epithelium enclosing a thick, viscous, greenish-brown fluid, a mix of lipids, cholesterol crystals, hairs, and decomposed epithelial cells. They increase in size with accumulation of glandular secretions and desquamated cells from the lining epithelium.

Symptoms associated with un ruptured dermoid is slowly progressive and due to local mass effect and obstructive hydrocephalus.

Large cyst rarely ruptures which results in spillage of fatty globules into the ventricles and into subarachnoid space. The ruptured component causes irritative effect and leads to aseptic meningitis, vasospasm, and hydrocephalus.

Rupture of these cysts is often a spontaneous process ;very rarely, closed head injury causes rupture and reported in certain cases. So always early diagnosis and appropriate treatment are essential for better disease outcome.

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