Case 16026

Eurorad

Cerebello-pontine angle epidermoid

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Section: Neuroradiology
Area of Interest: Neuroradiology brain
Procedure: Staging
Imaging Technique: MR
Special Focus: Neoplasia Case Type: Clinical Cases
Authors: Dr. Sanketkumar Patel
Patient: 45 years, female

Clinical History:

Headache for 15 days, left-sided hearing difficulties, left-sided facial numbness and sharp shooting pain for 15 days, vertigo for 20 days. No limb weakness, h/o trauma or surgery. Physical examination shows left-sided 5th to 8th cranial nerve deficits.

Imaging Findings:

MRI brain shows irregularly-bordered diffuse heterogeneous solid CSF signal intensity mass lesion in the left cerebello-pontine cistern causing mild mass effect on adjacent surface of pons without any parenchymal changes. It encases ipsilateral of the 3rd, 4th, 5th, 6th and 7th-8th nerves origin. It shows restricted diffusion within. No contrast enhancement is seen within it. No areas of haemorrhage or calcification within it. It appears as CSF signal intensity in T1W, T2W images.

Discussion:

(A) Intracranial epidermoid cysts are relatively common congenital lesions which account for about 1% of all intracranial tumours. They result from inclusion of ectodermal elements during neural tube closure, and typically present in middle age due to mass effect on adjacent structures. Their content is derived from desquamated epithelial cells. Although predominantly congenital, epidermoid cysts are usually very slow growing and as such take many years to develop. Typically patients are between 20 and 40 years of age.
(B) Signs and symptoms: headaches, cranial nerve deficits, cerebellar symptoms, seizures, raised intracranial pressure [3]. Physical examination: Fixed dilated pupil (if raised ICP), ipsilateral cranial nerve deficits. Generally no limb weakness except if mass effect on adjacent brain parenchyma. No fever or bleed except if associated infection or traumatic events.
(C) Imaging: CT scan is the initial modality of choice to detect the presence of solid or cystic intracranial lesions. It can detect intralesional haemorrhages and white epidermoids as hyperdense mass. Easily available modality.
MRI brain is the most sensitive and gold standard modality for evaluation of extent, location, morphology and encasement status of cranial nerves [1]. Signal intensity is of CSF in T1W, T2W and FLAIR images. it shows true restricted diffusion within. DWI is most sensitive for diagnosis and differentiating it from arachnoid cysts. Intralesional haemorrhages appear as hyperintense signals in T1W images. Intralesional calcifications appear hypointense in all conventional sequences. White epidermoids appear hyperintense on T1W and hypointense on T2W images due to

high protein content. Post-contrast study shows peripheral or non-enhancement. Internal enhancement is seen if there is malignant degeneration. MRI is very sensitive to see adjacent brain parenchymal changes due to mass effect.
(D) Prognosis is good. Surgical excision is the treatment of choice if symptomatic. However, complete resection is difficult as not all tissue can be removed, especially from around cranial nerves and vessels. Recurrence is therefore not uncommon, although growth is typically slow and many years can elapse without new symptoms [2].
(E) CT scan is initial modality of choice as it is easily available. MRI is the most sensitive and accurate modality for evaluation of lesion extent, morphology and surgical planning.

Written informed patient consent for publication has been obtained.

Differential Diagnosis List: Left cerebello-pontine cistern epidermoid, Arachnoid cyst, Dermoid

Final Diagnosis: Left cerebello-pontine cistern epidermoid

References:

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https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2864819/ 47(4) and 271-277
Hasegawa, Nouri, Nagahisa, Yoshida, Adachi, Inamasu, Hirose , Fujisawa. (2016) Cerebellopontine angle epidermoid cysts: clinical presentations and surgical outcome. NCBI - PubMed Volume 39, pages: 259–267 (PMID: 26566990)
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Figure 1

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Description: ADC image - Mass appears hypointense. **Origin:** Department of radiology , Shalby academy , ahmedabad , INDIA.

Figure 2

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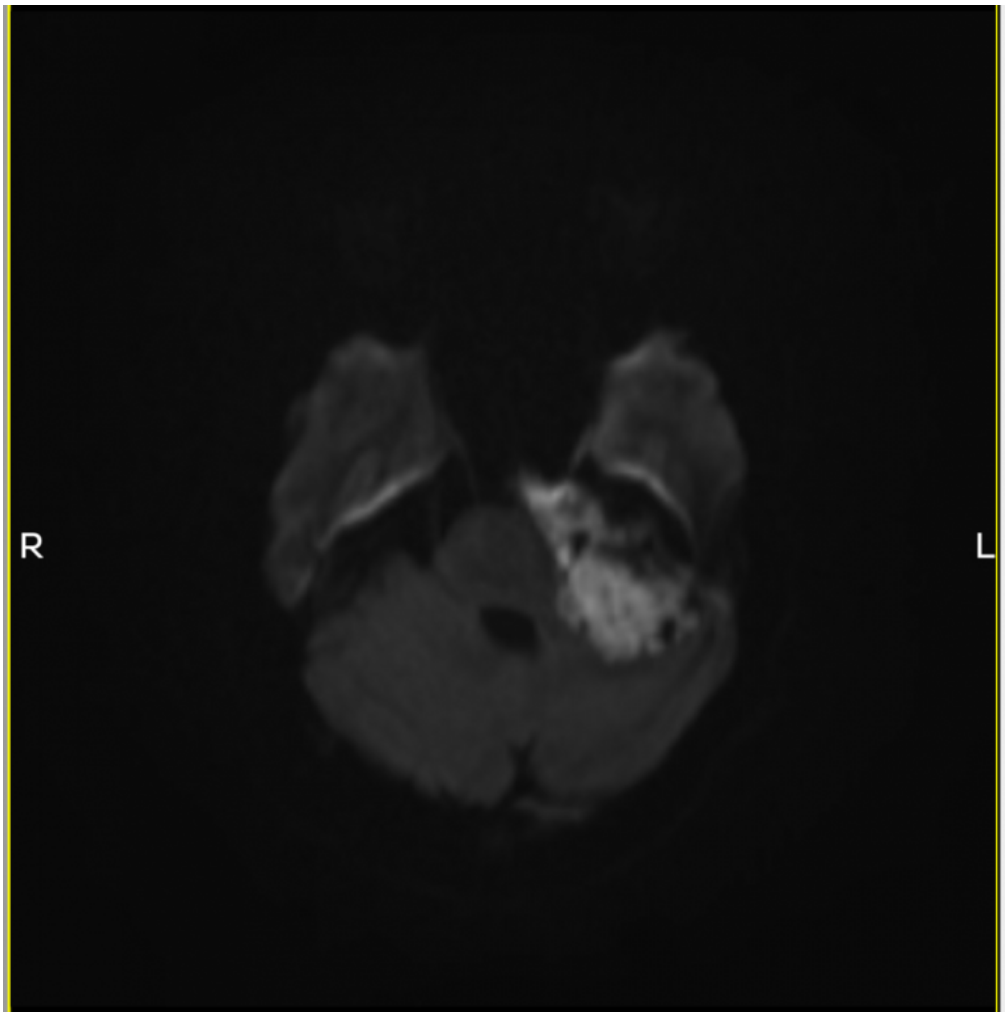

Description: DWI - restricted diffusion within mass lesion. **Origin:** Department of radiology , Shalby academy , ahmedabad , INDIA.

Figure 3

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Description: Axial T2W - CSF signal intensity lesion in left CP angle cistern. **Origin:** Department of radiology , Shalby academy , ahmedabad , INDIA.

Figure 4

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Description: Axial Cis - hypointense left CP cistern lesion. **Origin:** Department of radiology , Shalby academy , ahmedabad , INDIA.