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Bilateral Acoustic Schwannomas in a 35-Year-Old Male

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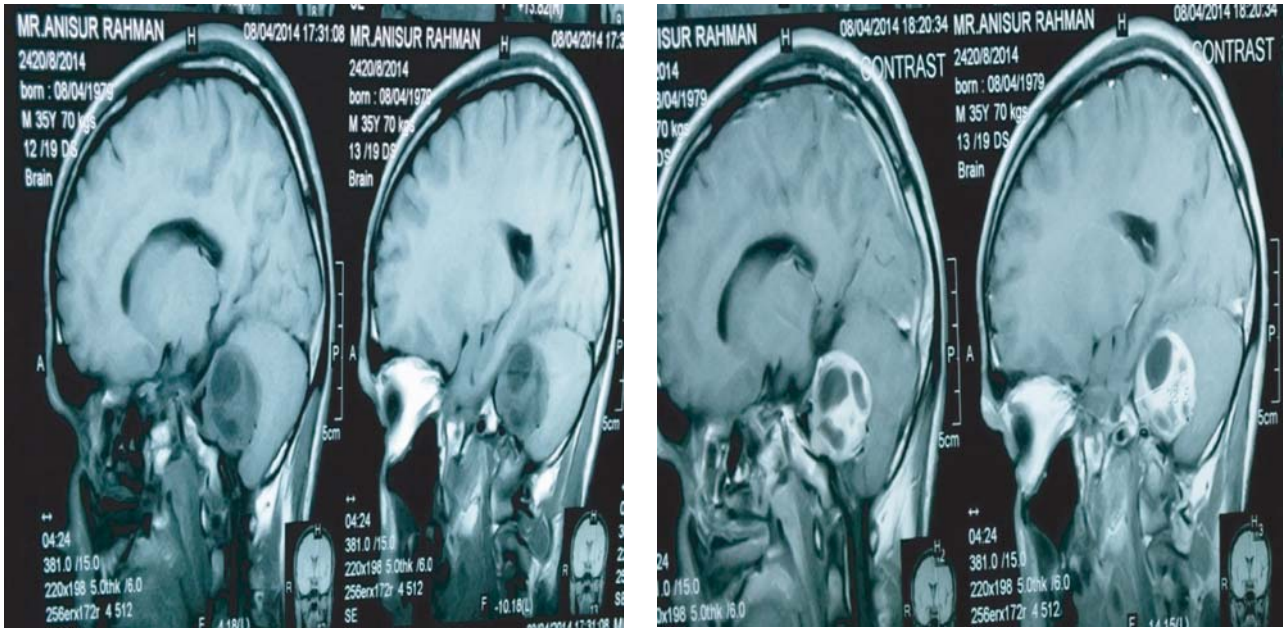

Fig 1. Pre- and post-contrast MRI shows well defined, enhancing, large heterogeneous and cystic mass in left cerebello-pontine (CP) angle suggesting acoustic schwannoma

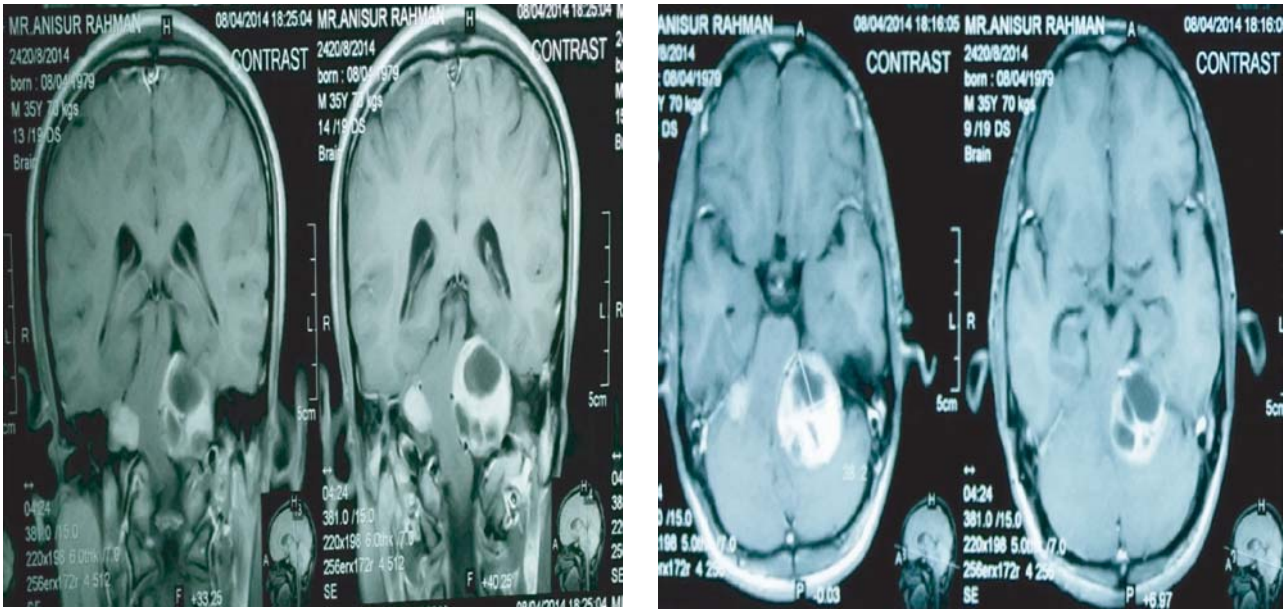

Fig 2. Post-contrast MRI shows well defined, enhancing, large heterogeneous and cystic mass in left CP angle and also a small mass in right CP angle extending in left internal auditory meatus suggesting bilateral acoustic schwannomas

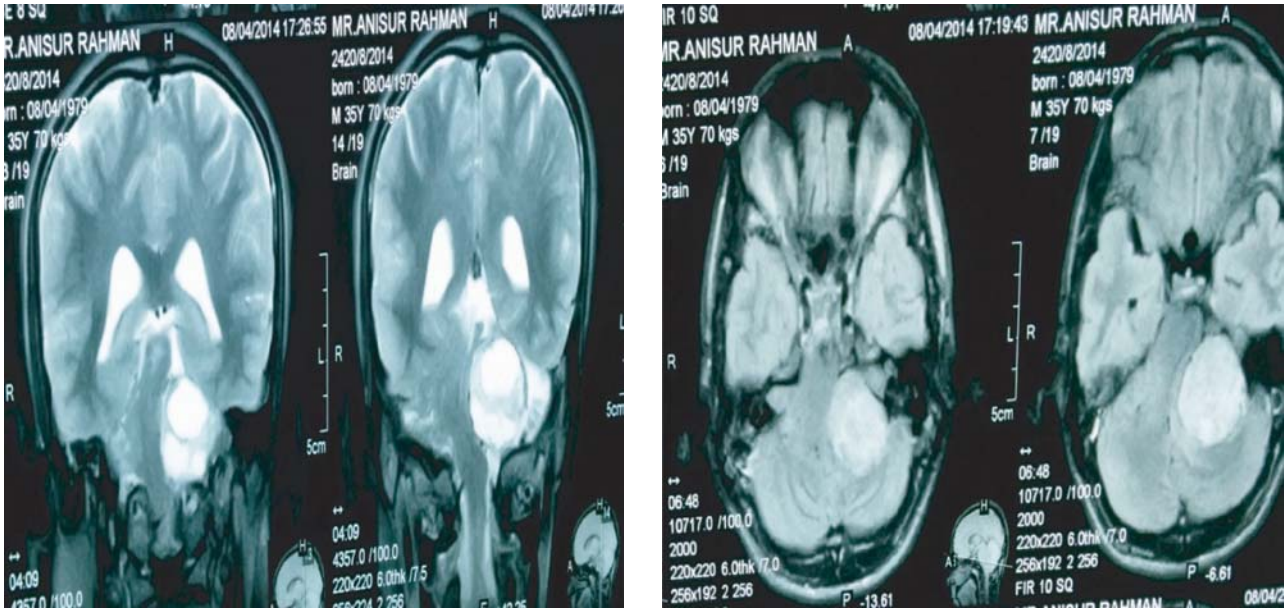

Fig 3. T2WI and FLAIR images show well defined, large heterogeneous hyperintense mass in left CP angle and also a small mass in right CP angle extending in left internal auditory meatus suggesting bilateral acoustic schwannomas

A 35-year-old male presented with the history of headache, vomiting, vertigo and blurring of vision for 2 months in the Department of Radiology & Imaging for MRI examination. Contrast enhanced MRI of brain revealed that there was a well-defined large heterogeneous and cystic mass about 35.5 × 38.2 × 35.3 mm in the left cerebello-pontine angle. The mass was compressing the cerebellum and pons. The mass was hypointense in T1WI, heterogeneous, hyperintense in T2WI and FLAIR. After IV contrast, heterogeneous strong enhancement was noted. There was another small mass about 17.4 × 21.0 × 13.6 mm noted in the right cerebello-pontine angle which extended in right internal auditory meatus (ice cream cone appearance). The mass was iso-intense in T1WI, heterogeneous and slightly hyperintense on T2WI and FLAIR images. After IV contrast, enhancement is evident. All these features were suggestive of bilateral cerebello-pontine angle acoustic schwannomas commonly found in neurofibromatosis type II.

Acoustic schwannoma (also known as vestibular schwannoma) is a relatively common tumour that arises from the vestibulocochlear nerve (CN VIII). These account for 7–8% of all primary intracranial tumours[1] and 75–90% of cerebellopontine angle masses.[1-2] Bilateral acoustic schwannomas are strongly suggestive of neurofibromatosis type 2 (NF2) which is a rare autosomal dominant neurocutaneous disorder (phakomatosis) manifesting as development of multiple CNS tumours.[1, 2]

Acoustic schwannomas are benign tumours (WHO grade 1) which usually arise from the intracanalicular segment of the vestibular portion of the vestibulocochlear nerve (CN VIII).[2,3] In over 90% of cases these tumours arise from the inferior division of the vestibular nerve.[4]

Most vestibular schwannomas have an intracanalicular component, and often result in widening of the porous acusticus which is present in up to 90% of cases.[5] Extracanalicular extension into cerebello-pontine angle can lead to "ice-cream-cone" appearance. Small tumours tend to be solid whereas cystic degeneration is seen commonly in larger tumours.[2] Haemorrhagic areas may also be seen. Calcification is typically absent.

CT scan may show erosion and widening of the internal acoustic meatus. The density of these tumours on non-contrast imaging is variable and often these are hard to see, especially on account of beam hardening and streak artefact from the adjacent petrous temporal bone.[6] Contrast enhancement is present, but can be

underwhelming, especially in larger lesions with cystic components.

MRI

T1

slightly hypointense (63%)[2]
isointense (37%)[2]
may contain hypointense cystic areas

T2

heterogeneously hyperintense[5]
cystic areas fluid intensity
postcontrast T1 WI
contrast enhancement is vivid
but heterogeneous in larger tumours

Treatment and prognosis

There is variability in the rate of growth of these tumours and the decision to treat requires consideration of patient's age and co-morbidities.[7] The options include stereotactic radiosurgery and microsurgery.[8]

Differential diagnosis

Meningioma
Epidermoid
Metastasis

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