

Clinical Images

Acoustic Schwannoma Presenting as Multiple Cranial Neuropathies

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A 55year old female presented to us with headache on and off since 2 months, unilateral tinnitus in left ear since 1 and 1/2 months, imbalance while walking, dysphagia and dysphonia since 1 month. There was no history of fever, vertigo, vomiting, headache, diplopia, convulsions, discharge from ear, blurring of vision and weakness. On asking leading question she added nasal twange to voice and regurgitation of food particles and water through nose while deglutition.

General examination was normal. Blood pressure-120/70mmHg in right arm, there were no neurocutaneous markers. Cardiovascular and respiratory system examination was normal. CNS examination revealed normal higher functions. Left fifth cranial nerve was involved in the form of decreased sensation in left half of the face, corneal reflex was absent on left side. Left facial infranuclear palsy was also present. (Figure 1) Apart from this, right sided vagus nerve paralysis was indicated by decreased arching of right soft palate, and the uvula deviated to left side while saying "ahh". (Figure 2) Gag reflex was also absent on the right side suggesting right glossopharyngeal nerve involvement. Eleventh cranial nerve examination was normal. Power was grade 4 in all four limbs, nutrition was normal, deep tendon reflexes were normal, left sided cerebellar signs were present (Finger nose test, dysdiadochokinesia and positive heel shin test).

On investigations routine hemogram was normal, kidney and liver function tests were normal.



Fig.-1: Showing infranuclear left sided facial palsy.



Fig.-2: Showing Right sided vagus palsy.

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MRI revealed an extraaxial mass with solid cystic component seen in left cerebello-pontine angle having intracanalicular extension in internal auditory canal on left side with enhancement pattern causing obstructive hydrocephalus most likely acoustic schwannoma of left side. MRI revealed large acoustic schwannoma causing severe compression of the brainstem. (Figure 3) Audiometry of the left suggested severe sensorineural hearing loss.

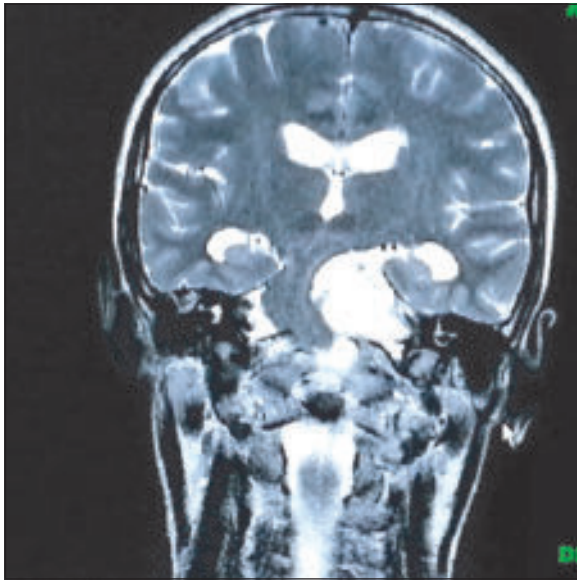


Fig.-3: Coronal MRI section showing severe brain stem compression due to CP angle mass causing contralateral effacement of the brainstem.

Patient was referred to neurosurgery. A retromastoid suboccipital craniotomy was done, and through retrosigmoid approach by microneurosurgical technique, subarachnoid dissection was done, cranial nerves were preserved and total excision of acoustic schwannoma was done. (Figure 4) Specimen was sent for histopathologic examination which suggested acoustic schwannoma. (Figure 5).

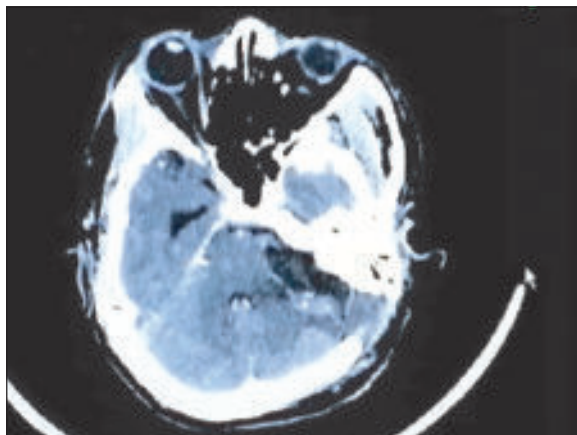


Fig.-4: MRI of the brain after excision of the mass.

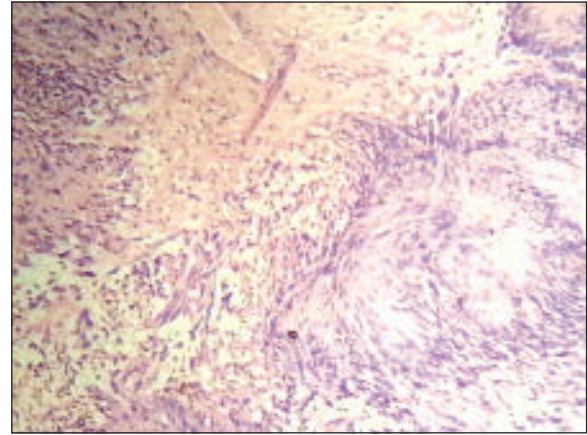


Fig.-5 : H& E stained 10X view showing hypercellular (Antoni A) areas with wavy, tightly organized plisades of Verocay bodies in the center. Hypocellular (Antoni B) areas are also seen, suggestive of Acoustic Schwannoma.

Discussion:

Acoustic tumours or more precisely vestibular schwannomas (VS) are by far the most common extra-axial tumour. Acoustic neuromas typically begin in sites that are “transition zones” from the central to the peripheral nervous system along the VIIIth cranial nerve. As the acoustic neuroma expands it fills the internal auditory meatus thereby compressing the vestibulocochlear nerve and facial nerves. Impairment of the 5th cranial nerve leads to facial pain and/or facial sensory loss. Though hearing loss commonly occurs as a result of tumor compression of the VIII th nerve, facial weakness often does not occur until acoustic tumors grow quite larger, as in our case.

Acoustic neuromas do not invade and destroy tissue as is common with cancerous tumors. Rather, the major clinical concerns related to acoustic neuroma growth center on the ability of these tumors to compress the soft, neural tissue that is confined to the tight quarters of the posterior fossa and internal auditory canal. Ultimately if untreated, the acoustic neuroma can compress the cerebellar peduncles, cerebellum, brainstem and cranial nerves IX-XI (as in our case). This can result in increased pressure applied to key centers of the brain and neurologic impairment.¹

Involvement of ninth, tenth, eleventh or twelfth cranial nerve by acoustic tumor leads to symptoms of dysarthria, dysphagia, hoarseness of voice and aspirations in approximately 30% of cases. The most commonly involved nerves are glossopharyngeal and vagus nerves. Compressions of these lower cranial nerves occurs from

extension of large tumors inferiorly towards the jugular foramen, also known as jugular foramen syndrome. In our case the large tumor has compressed the corticobulbar fibers of IXth, and Xth nerves causing contralateral craniopathies. But still it is a rarity because of relative resilience of these nerve fibres for compression.² In this case the eleventh cranial nerve was spared.

References:

1. Schuknecht HF: Pathology of vestibular schwannoma (acoustic neuroma), in Silverstein H, Norrel H (eds): Neurological Surgery of the Ear. Birmingham: Aesculapius Publishing, 1977, pp 193-197
2. Beers, Mark H., MD, and Robert Berkow, MD., editors. "Acoustic Neuroma." Section 7, Chapter 85 In The Merck Manual of Diagnosis and Therapy. Whitehouse Station, NJ: Merck Research Laboratories, 2002