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A Study on Tentorial Schwannoma

KEYWORDS

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INTRODUCTION

Schwannomas are benign tumours of Schwann cell origin and are the most common tumour of peripheral nerves. Schwannomas are usually derived from schwann cells in the peripheral nervous system and intracranial neoplasms mainly arise from the vestibular nerve. Dura- based intracranial schwannoma is also known, but schwannomas, involving the tentorium are very rare. We present a case of tentorial schwannoma.

Case report –

A young asymptomatic female, 24 years of age, came with complaints of episodic headache, more in the morning, increasing on bending forward. Patient also had episodes of nausea during headache. All blood investigations were in normal limits.

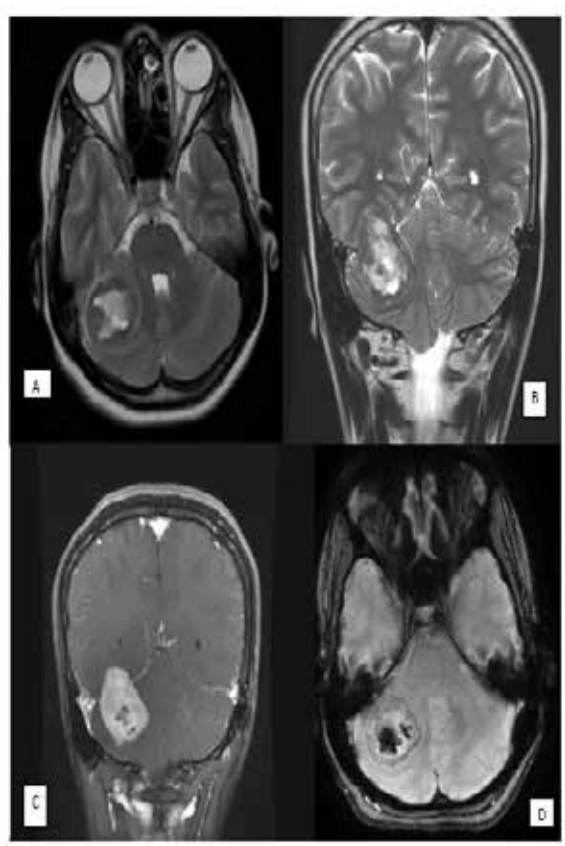
Plain CT brain showed an Ill-defined heterogenous lesion with peripheral hyperdensity and central hypodense area and focus of calcification peripherally measuring 1.9 x 2.8 x 3.9cm (AP X TR X CC) is seen involving right cerebellar hemisphere with no perilesional edema. Lesion causing mass effect in form of compression of fourth ventricle and superiorly lesion infiltrating displacing tentorium to extend into supratentorial region abuting right temporal lobe

Magnetic resonance imaging showed A well-defined extra axial lesion noted along the right tentorium cerebelli, in the right cerebellar hemisphere with CSF cleft sign and buckling of the underlying cortex , appearing hyperintense on T2, FLAIR imaging with peripheral hypointense rim, showing intense blooming on SWI and intense post contrast enhancement. No e/o diffusion restriction/edema/ mass effect noted. The lesion is causing mass effect in the form of minimal displacement of the fourth ventricle to the left. Superiorly, the lesion is infiltrating/displacing the tentorium cerebelli to extend into the supratentorial region, abutting the right temporal lobe. No e/o obstructive hydrocephalus noted.

MRS showed no e/o abnormal metabolite peak.

Histopathological examination of the tumor demonstrated typical findings of schwannoma, consisting of a well circumscribed cellular tumor composed of spindle shaped cells arranged in fascicles and sheets. These cells are oval to spindle with anisonucleosis, elongated vesicular nuclei with nuclear buckling, prominent nucleoli, nuclear palisading forming verrocay bodies (Antoni A areas) and moderate amount of cytoplasm. Occasional bizarre cells are noted. Few hypocelluar antoni B areas and hyalinised blood vessels are seen. Tumor cells were positive for S100 with cytoplasmic positivity for GFAP.

Postoperatively, the patient showed no residual neurological deficit. Post op CT scan showed no residual tumor.



Axial and coronal T2 weighted MRI at the level of pontomedullary junction, shows mixed signal intensity lesion, composed of isointense solid portion and hyperintense cystic portion compared with brain grey matter noted (A & B). Lesion shows homogenous contrast enhancement (C). lesion shows multiple of foci of blooming on SWI (D).

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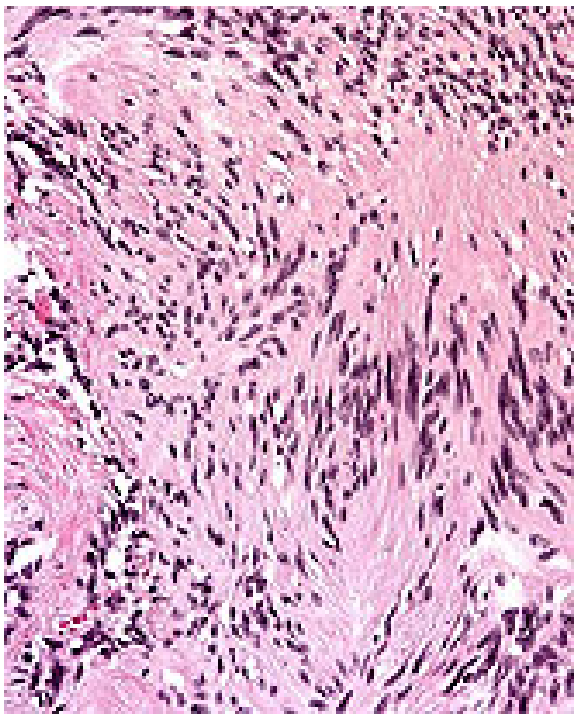

Figure 4. Photomicrograph of the surgical specimen, H&E, original magnification 6200. Photomicrograph of the surgical specimen shows long bipolar spindle cells with sporadic pallisading and cells containing eosinophilic matrix consistent with schwannoma.

Discussion -

Only 6 cases of schwannoma arising from the tentorium have been reported (1,2,3). Most common symptom for the patient being headache. Usually, most of the cases are infratentorial in origin, with the tumor arising from the tentorium and mainly located along the anteromedial cerebellar region with extension along the ambient cistern. Almost all tumors usually have cystic and solid portions showing heterogenous contrast enhancement. Some of them even demonstrated dural tail sign, mimicking meningioma. The differential diagnosis for the tumor being, meningioma, exophytic glioma, metastasis.

Operative indications include intractable headache, visual disturbance and severe neurological impairment, as well as tentorial meningioma. These tumors are usually easily separable from surrounding structures.

The histiogenesis of these tumors however remains controversial. A variety of hypotheses have been proposed regarding the possible mode of origin of schwannoma unrelated to cranial nerves. These include possible origin from schwann cells in perivascular plexuses [10], conversion of pial cells to schwann cells [1], origin from misplaced myelinated nerve fibres [11] and from displaced neural crest cells in the developing nervous system [12], or origin from multipotential mesenchymal cells [13]. Redekop supported the theory of distorted embryogenesis [14]. In our case, it is possible that the origin of the schwannoma is from the normally-existing schwann cells in the tentorium. It is possible that the tumour could have arisen from the tentorial branches of the trigeminal nerve or from one of the multiple perivascular nerve fibrils

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