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A Rare Case of Extracranial Meningioma of the Temporal Bone

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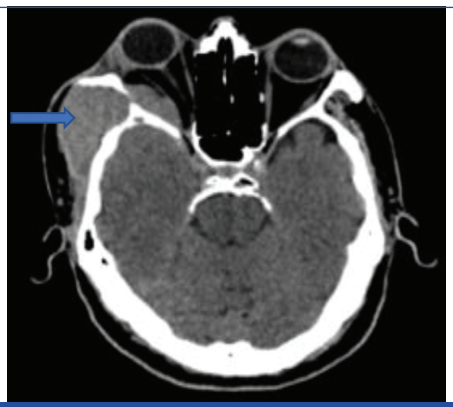
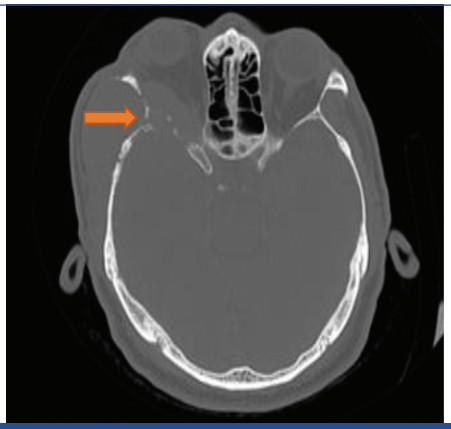
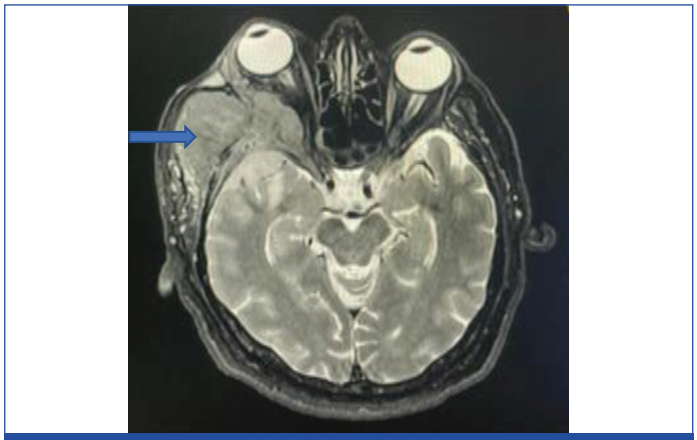
A 54-year-old female patient came with complaints of progressively increasing swelling over the forehead and temporal region on the right side for two years. The swelling was painless and was associated with proptosis. The swelling was not associated with loss of vision. A plain computed tomography scan of the brain revealed a large predominantly extracranial soft tissue density lesion approximately measuring 5.2×4.1×5.7 cm, which was located in the right temporal region and was seen to be extending into the infratemporal fossa [Table/Fig-1]. The intracranial extension of the tumour was noted along the anterior aspect of the temporal bone on the right side. The lesion was also seen to be extending into the right orbital space pushing the lateral rectus muscle and optic nerve medially. The lesion eroded the temporal bone, greater wing of the sphenoid bone, and lateral wall of orbit on the right-side [Table/Fig-2]. Magnetic Resonance Imaging (MRI) brain with contrast revealed the same extensions as that of Computed Tomography (CT). The lesion involved the temporalis muscle and showed heterogenous enhancement in postcontrast study [Table/Fig-3]. There was no evidence of local lymphadenopathy.



[Table/Fig-1]: Computed tomography image in brain window showing soft tissue density lesion (blue arrow) in the right temporal region extending into the orbital space.

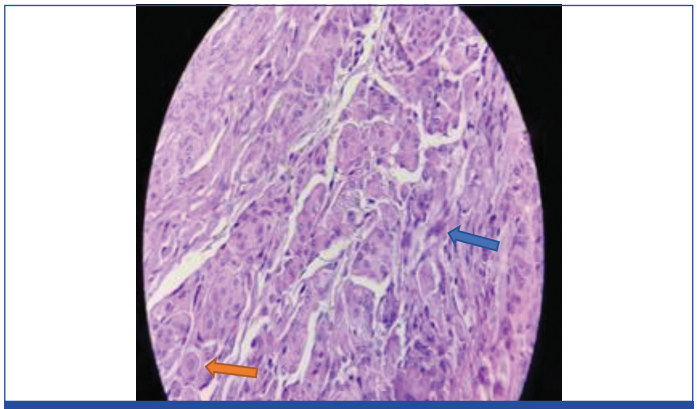


[Table/Fig-2]: Computed tomography image in bone window showing the lesion eroding the right temporal bone, greater wing of the sphenoid bone, and lateral wall of the orbit (orange arrow).



[Table/Fig-3]: Magnetic Resonance Imaging of the brain, on postcontrast study showing heterogeneously enhancing lesion (blue arrow) involving the right temporalis muscle, temporal lobe, and extending into the retro-orbital region.

The patient underwent near total excision of the lesion and the tissue was sent for histopathological examination. The histopathologic features revealed meningothelial meningioma arising from the temporal bone with a predominant extracranial extension which was suggestive of extracranial meningothelial meningioma [Table/Fig-4].



[Table/Fig-4]: Histopathology image showing spindle cells (blue arrow) and psammoma bodies (orange arrow) consistent with extracranial meningothelial meningioma.

DISCUSSION

Gliomas are the most common type of primary brain tumour, although meningiomas make up between 15% and 20% of all primary intracranial neoplasms. Two percentage of these meningiomas develop outside the skull i.e., extracranial in origin [1].

Meningiomas are most frequently extraneuraxial and are discovered covering the surface of the brain or at the base of the skull. Meningiomas rarely develop in the intraventricular, intraparenchymal, or intraosseous regions. Only 2% of the time do they manifest as an extracranial tumour, and when they do, they typically affect the head and neck, more specifically the sinuses, and temporal bone, and scalp [2].

Extracranial meningiomas can have very mild clinical presentations. Typically, localising signs and symptoms do not emerge until the tumour has grown significantly. The intimate involvement of cranial nerves causes neurologic dysfunction and a mass effect at the location, which are associated to the symptoms [3].

Meningiomas can occur as a direct extension of a primary intracranial meningioma or as a pure primary extracranial meningioma arising from ectopic arachnoid cells. Extracranial meningiomas are commonly misdiagnosed, which leads to ineffective therapeutic care [4].

The extracranial meningioma is most frequently classified on the basis of the site of origin of the tumour which is given by the Hoye categorisation system [5]. According to the Hoye categorisation system, the present case falls into Type A extracranial meningioma.

It is extremely unusual to have a large intracranial-extracranial meningioma. Malignant meningioma and incompletely resected meningioma are typically treated with radiotherapy [6].

Surgery is used to remove extracranial meningiomas. Even when metastasising, the lesions do not spread quickly and do not need treatment. It is best to visit a neurosurgeon if CT scans or other diagnostic methods reveal an intracranial component. The prognosis is good to excellent, particularly if the extracranial tumour is entirely removed and if a CT scan does not indicate any signs of an intracranial tumour [7].

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