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Image Report

Aspergillus masquerading as clival chordoma

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CT scan and MR images of a 32-year-old nondiabetic female who presented with complaints of headache for the past 4 months and double vision of 3 months' duration are shown in [Figures 1 and 2]. Headache was generalized, holocranial, mild to moderate, non-progressive and was not associated with features of raised intracranial pressure or with febrile episodes. Diplopia was binocular, which worsens in either lateral gaze, more severe on looking right side. She also admitted to having been suffering from secondary amenorrhea for the past 5 years. No significant neurological deficits elicited on examination except bilateral sixth nerve palsy. Her routine blood investigations and pituitary with thyroid hormone profiles were completely normal.

As shown in [Figure 1a], the lesion on CT scan appears to be an isodense pathology with expansile nature, grossly involving the clivus, and extending into posterior sphenoid cavity as well as into sella. On bone window [Figure 1b], it is appearing to be an osteolytic lesion completely destroying whole length of clivus extending from basiocciput to basisphenoid, invading dorsum sella to sellar floor.

The soft-tissue component of the lesion is better delineated on MRI, as shown in [Figure 2a-f]. Isointense well-defined lesion on T1-W MR images sagittal cuts [Figure 2a] seem to fill posterior part of the sphenoid cavity, whole of the sella, and almost reaching up to the tuberculum sella. Lesion is hypointense on T2-W images [Figure 2b] suggestive of high fibrous component of the lesion. Bilateral internal carotid arteries were seen to be encased by the lesion [Figure 2c]. These features were spot-on match with a radiological diagnosis of clival chordoma. Clival chordomas also appear as an extra-axial destructive lesion that primarily involves the bone and have a well-defined appearance with clearly delineated margins. On plain CT scan, chordomas may also have either osteolytic, osteosclerotic, or a mix of these features. On MR images, these lesions may have an extraosseous component compressing over the neurovascular structures, that is, basilar artery and obliteration of prepontine cistern. On T1-weighted images, it is known to be iso- to hypointense on appearance. On T2-W images, it gives variable signals depending on the proportion of the lesion's fibrous factor, that is, more hypointense with an increasing fibrous component. On contrast-enhanced CT scan, as well as on gadolinium-enhanced MRI, it shows brilliant enhancement. All these features are also noted in current case, as shown in [Figure 2d-f].

With a working diagnosis of clival chordoma, the patient underwent transnasal transsphenoidal endoscopic resection of the tumor under general anesthesia. The lesion was grayish-pink in

color, moderately vascular, completely destroying the clival region, and locally infiltrating and extending up to sphenoid sinus. It was firm in consistency and not easily suckable. To our surprise, peroperative squash analysis of tissue sent for frozen section revealed fungal infection. Exploring into the surgical field, being more enthusiastic after frozen, did not show any traces of greenish-yellow or black tinge, commonly seen in fungal lesions. In postoperative period, the patient was started on voriconazole injections, empirically. She recovered from anesthesia smoothly with no new deficits and responded well to voriconazole treatment. *Aspergillus flavus* growth was seen after aerobic incubation of tissue sample for four weeks, as seen in [Figure 3]. After microbiological confirmation, antifungal was converted to oral therapy for another 6 weeks and she was regularly followed up in the outpatient department. At 3 months after surgery, the patient was completely asymptomatic and interval MR images after 6 months of surgery, discloses complete resolution of the disease.

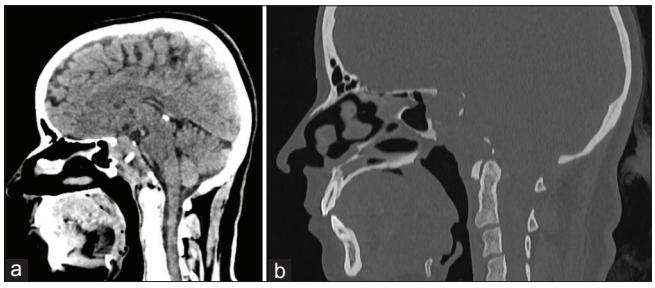

Figure 1: (a and b) Noncontrast-enhanced computed tomography scan head in sagittal reconstruction. (a) Discloses isodense expansile lesion completely involving the clivus and extending into the posterior sphenoid cavity as well as into sella. (b) On bone windows, it is an osteolytic lesion completely destroying the whole length of clivus from basiocciput to basisphenoid, dorsum sella, and sellar floor.

We account that fungal infection at the skull base is extremely rare,[1,2] but there is every possibility under the sun that neurosurgeon may encounter with this saprophyte to have caused bilateral sixth nerve palsy in his/her patient with disease masquerading as a clival chordoma on imaging. Therefore, fungal infections are important among the various differentials, leading to skull base lesions even for nondiabetic or immunocompetent patients.

Declaration of patient consent

Patient's consent not required as patients identity is not disclosed or compromised.

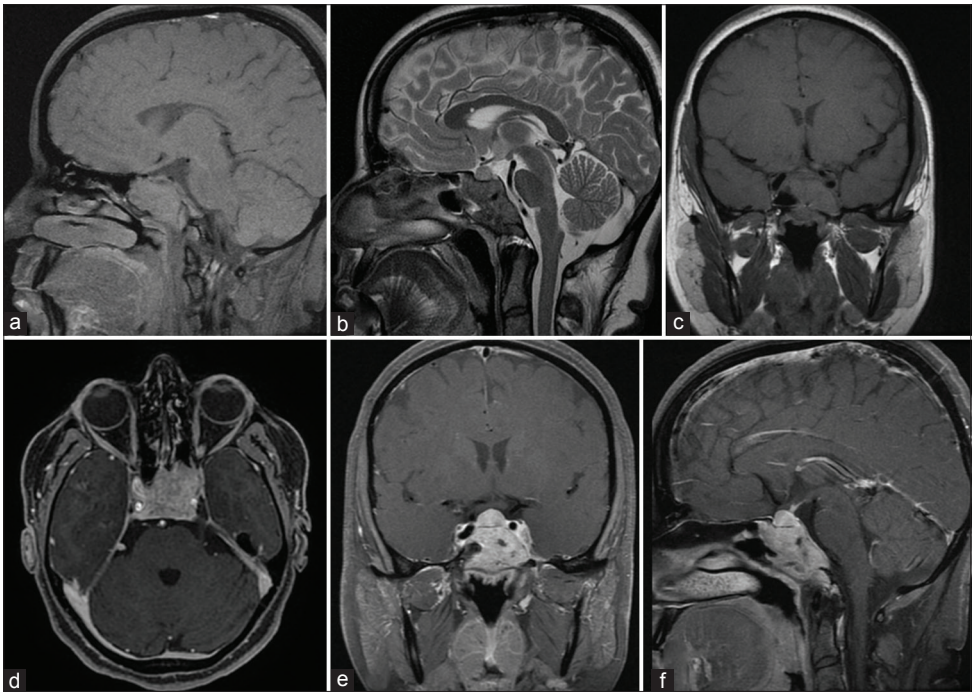

Figure 2: (a-f) T1- and T2-weighted magnetic resonance imaging, sagittal, and coronal images (a-c). Isointense well-defined lesion on T1-W sagittal cuts (a) seems to fill the posterior part of the sphenoid cavity, whole of the sella, and almost reaching up to the tuberculum sella. The lesion is hypointense on T2-W images (b) suggestive of high fibrous component of the tumor. T1-weighted magnetic resonance imaging with gadolinium, axial, coronal, and sagittal Images (d-f). The lesion is brilliantly enhancing on gadolinium administration, with encasement of bilateral cavernous internal carotid arteries are clearly visible.

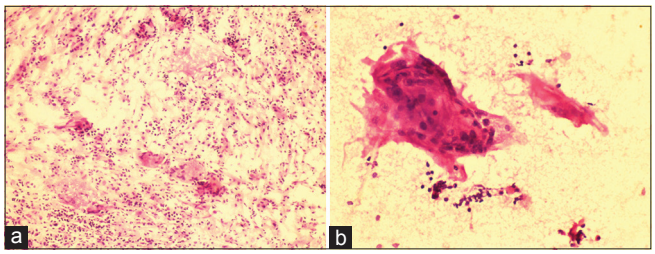

Figure 3: (a and b) Hematoxylin and eosin stained preparations of squash smear (a) and frozen section (b) showing the presence of mixed inflammatory infiltrate with foreign body type giant cells containing branching septate fungal hyphae.

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Nil.

Conflicts of interest

There are no conflicts of interest.

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