Planum sphenoidale meningioma case reports

2020

A 28-year-old male, who presented to our hospital after he had one episode of a generalized tonic-clonic seizure that was controlled with antiepileptic medication. Neurological examination was unremarkable including optic and olfactory nerves. Magnetic resonance imaging (MRI) showed a large anterior skull base mass located at the planum sphenoidale anteriorly. The patient underwent an endoscopic transnasal approach, drilling of the planum sphenoidale, and en bloc total resection of the tumor. In the follow-up office visit, the patient had no more seizures with preserved olfaction; MRI revealed no tumor residual.

Planum sphenoidale meningiomas are surgically challenging due to their close proximity to important structures, such as the pituitary gland, internal carotid artery, and optic chiasm. Respecting the arachnoid plane and generous coagulation of vascular supply from the ethmoid arteries facilitate safe removal [1)].

A 54-year-old woman revealed a sellar lesion (28 × 19 × 16 mm), presumably a pituitary macroadenoma, and a second extra-axial lesion (22 × 36 × 20 mm) expanding from the tuberculum sellae to the planum sphenoidale with encasement of the anterior communicating complex, presumably a meningioma. We used intraoperative MRI to assess the extent of the resection before reconstructing the large skull base defect. Furthermore, we systematically reviewed pertinent articles retrieved by a PubMed/Embase database search between 1961 and December 2018.

Out of 63 patients with synchronous tumors reported in 43 publications, we found 3 patients in which the tumor was removed by EEA. In these 3 patients and the presented case, the resection of both lesions was successful, without major approach-related morbidity or mortality. More extensive removal of endonasal structures to gain adequate tumor exposure was not necessary. We did not find any previous reports describing the benefits of intraoperative MRI in the presented setting.

In the rare case of a synchronous meningioma and pituitary adenoma of the sellar region, intraoperative MRI might be beneficial in confirming residual disease before skull base reconstruction, and therefore radiologic follow-up [2)].

2019

A 38-year-old man presented with severe sudden-onset headache and relapsing and remitting vision loss. Radiographic imaging studies demonstrated radiographic features of a hyperdense, hemorrhagic mass in the sellar region. Magnetic resonance imaging (MRI) revealed a 4-cm mass abutting the optic chiasm and compressing the pituitary. After 4-week follow-up, surveillance MRI demonstrated near-complete resolution of the previously identified planum sphenoidale and suprasellar mass. The patient re-presented 13 months later with recurrent symptoms. MRI demonstrated recurrence of the

mass. Given the broad differential diagnosis, an endoscopic endonasal biopsy was obtained; the findings were suggestive of a high-grade meningioma. The patient underwent elective resection of the extraaxial lesion via a frontotemporal approach. The lesion was identified as a hemorrhagic suprasellar atypical planum sphenoidale meningioma. Postoperatively, the patient's headaches improved significantly and his right-sided visual changes resolved. After adjuvant radiotherapy (5400 cGy in 30 fractions) to the surgical cavity 3 months later, at last follow-up 5 months postoperatively, the patient was at his neurologic baseline and denied any headaches or visual sequelae [3].

2018

A 60-year-old homemaker presenting with pedal edema and ascites was found to have a planum sphenoidale meningioma concurrently with nephrotic syndrome. On renal biopsy, the patient was found to have membranous glomerulonephritis. There was complete remission of nephropathy after excision of the meningioma. Nephrotic syndrome has been commonly found in association with malignancies and blood disorders but the association with a meningioma is extremely rare, and only one case has been previously reported as per our knowledge [4]

2015

Coincidental pituitary neuroendocrine tumor and planum sphenoidale meningioma mimicking a single tumor [5].

2011

A 60-year-old male presented with complaints of dizziness, which worsened with fatigue and a sense his balance was 'off'. Initial physical examination was negative and the laboratory testing was unremarkable. Within weeks, the patient developed bilateral visual field defects. MRI revealed an extra-axial mass which extended into the pituitary fossa and caused compression of the pituitary gland. The pituitary stalk was displaced posteriorly and the optic chiasm was compressed with displacement superiorly and posteriorly. The patient underwent a surgical resection. Diabetes insipidus developed postoperatively requiring a vasopressin drip. He also developed hypopituitarism after the resection with hypothyroidism, hypoadrenalism and hypogonadism. The patient requires testosterone, levothyroxine and hydrocortisone replacement and has mild residual bitemporal hemianopsia [6].

2010

A previously healthy 31-year-old man presented with an extremely rare case of small meningioma associated with cerebral infarction preceded by recurrent transient ischemic attacks manifesting as a 3-day history of recurrent and transient weakness of the left lower limb lasting several minutes for each episode. The symptoms became persistent and complete on the following day. Magnetic resonance imaging revealed acute cerebral infarction in the right frontal lobe and a 20 mm diameter

tumor in the planum sphenoidale encasing the right anterior cerebral artery. Cerebral angiography demonstrated occlusion of the right A(2) portion. The patient underwent surgery and the tumor was gross totally removed. The histological diagnosis was meningothelial meningioma. Cases of meningioma causing cerebral infarction are very rare, but the possibility should be considered even if the tumor is small [7].

2004

A 66-year-old woman who developed a planum sphenoidale meningioma. Histologically, the tumor was composed of meningothelial cells arranged in fascicles and whorls, typical of a well-differentiated meningioma. Many tumor cells contained round intracytoplasmic eosinophilic inclusions that were periodic acid Schiff-negative and red on Masson trichrome. The inclusions were immunopositive for vimentin, and were immunonegative for epithelial membrane antigen, smooth muscle actin, desmin and type IV collagen. Ultrastructural examination showed the inclusions were composed of round to oval, well-demarcated, non-membrane-bound, osmiophilic granular material. The inclusions within this tumor had histochemical, immunohistochemical and ultrastructural properties not described in other reported meningiomas with eosinophilic granular or granulofilamentous inclusions [8].

1)
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