Posterior petrous bone meningioma

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The posterior petrous bone meningioma is a posterior fossa meningioma considered a type of cerebellopontine angle meningioma located along the posterior surface of the temporal bone in the region of the cerebellopontine angle.

According to some authors, cerebellopontine angle (CPA) meningiomas are mostly posterior petrous bone meningiomas arising from the petroclival region [1)].

Classification

Posterior petrous bone meningioma classification.

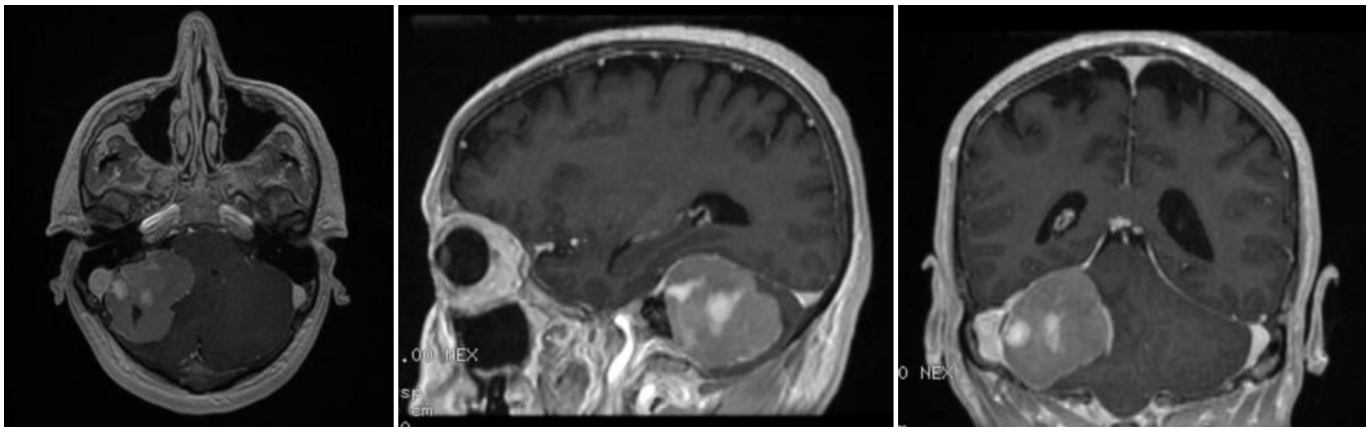
Clinical

The main symptom on first admission was impaired hearing in 41%, dizziness in 20%, and tinnitus in 18% of the patients. Results of physical examination and audiological testing revealed hypacusis in 65% of patients, cerebellar ataxia in 31%, and impairment of the fifth cranial nerve in 26% [2)].

Posteriorly attached meningiomas are less symptomatic and of better prognosis than medially inserted ones. [3)].

Diagnosis

Preoperative detailed analysis of MR imaging data gives the surgeon a clue about the dislocation of critical neurovascular structures, particularly the cranial nerves. Nonetheless, the exact relationship of the cranial nerves to the tumor (dislocation, adherence, infiltration, and splaying of nerves) can only be fully appreciated during surgery [4)].



Treatment

The primary principles in dealing with this disease entity include preservation of vital vascular and central nervous system structures and total resection of the tumor as much as possible [5].

Roche et al. believe that proper selection of the approach favorably impacts functional outcome in patients undergoing surgery for the treatment of skull base tumors. In the authors' case series of posterior petrous bone meningiomas, Type P and most Type M tumors were safely managed through a regular retrosigmoid approach, whereas Type A tumors were optimally treated via an epidural anterior petrosectomy [6].

Total tumor removal (Simpson Grades I-II) remains for Sanna et al. the treatment of choice and takes priority over hearing preservation. Subtotal resection is indicated for older and debilitated patients with giant lesions to relieve the tumor compression on the cerebellum and brainstem. Subtotal removal is also preferred in the face of the absence of a plane of cleavage between the tumor and the brainstem, in the presence of encasement of vital neurovascular structures, in elderly patients with tumors adherent to preoperatively normal facial or lower cranial nerves [7].

Outcome

Surgical treatment has become increasingly safe but these tumours still remain a surgical challenge because of the relatively high incidence of permanent complications associated with their removal. The site of displacement of the cranial nerves depending on the dural origin of the tumour has the most influence on the related difficulties in its removal [8].

Complications

Tumors invading the internal auditory canal present with increased postoperative functional morbidity in spite of a tailored approach regarding dural insertion [9].

Case series

Posterior petrous bone meningioma case series.

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