Osteoma of the sphenoid sinus

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Abstract. Osteoma of the sphenoid sinus. Objective: Only twenty cases of osteomas of the sphenoid sinus have been reported. This tumour causes progressively worsening headaches and visual disturbance and should be resected when symptomatic or fast-growing. In selected cases, endoscopic sinus surgery offers an effective alternative to open procedures.

Case report: The authors report a case of sphenoid osteoma in a 19-year old woman. Computed tomography performed because of complaints of progressively worsening headaches identified a large osteoma of the sphenoid sinus. The clinical features and radiological assessment of the disease are presented together with a review of the literature.

Results: The endoscopic technique used for resection of the tumour gave a very good result.

Conclusion: Sphenoid osteoma is an extremely rare lesion which can be approached endoscopically in selected cases.

Introduction

Fibro-osseous tumours such as osteomas, ossifying fibromas and fibrous dysplasia are not uncommon benign, slow-growing neoplasms arising mainly in the frontal and ethmoid paranasal sinuses. The involvement of the sphenoid sinus region is extremely rare, with progressively worsening headaches, unilateral or bilateral visual disturbance and increasing loss of vision due to optic nerve atrophy, being the most common symptoms. Neurological symptoms are rarer. Some lesions are associated with a mucocele. Lame summarised the twelve cases described in the European literature between 1800 and 1977. Thereafter single, isolated cases have been reported by Boysen, Dolan et al., Noterman et al. and Fradis et al. Sphenoid osteoma cases from America, particularly those arising from the sphenoid sinus proper, have only occasionally been reported. Clinical experience advocates resection when these lesions are symptomatic, or when they exhibit rapid growth. Osteomas encroaching on neighbouring structures should be extirpated, while smaller tumours can be left in place provided that regular follow up occurs. Recurrences are rare. The most common approaches to resection of sphenoid tumours have been transseptal, transnasal, transethmoid, transmaxillary and extradural transbasal. The choice depends on the extent of the tumour and the surgeon’s experience. Nii et al. performed a sublabial-nasoseptal sphenoidotomy, whilst Pompili et al. performed an extradural transbasal approach for removal of a giant sphenoid osteoma. Noterman et al. performed a subtotal resection of a large tumour using a frontal extradural approach. With the advent of, and progress in, sinonasal endoscopy since the mid 1980’s, endoscopic management of some of these lesions is now feasible. There are, however, only a few case reports of osteomas resected with endoscopic guidance.

Case report

A 19-year-old woman presented with a 7-month history of headaches, diplopia and right-sided palpebral oedema. The right eye movements were limited in the vertical and horizontal planes. Magnetic resonance imaging (MRI) of the orbits and computed tomography (CT) of the paranasal sinuses disclosed an intense shadow in the right half of sphenoid sinus (Figures 1 and 2). The patient underwent endoscopic transnasal spheno-ethmoidectomy with resection of the sphenoid sinus osteoma. The sphenoid sinus was approached through its front wall using a Stammberger punch. A convex to the right side bony sinus septum was identified together with the adjacent tooth-shaped osteoma which had its
apex directed to the right. En bloc resection of the tumour together with the sinus septum was performed with a drill (Figure 3). A large mucocele localised behind the osteoma was subsequently marsupialized. Histopathologic examination confirmed a mature osteoma and the chronically inflamed mucous membrane of the mucocele. There is no recurrence at 4 months follow up. The patient reported improvement in all pre-operative symptoms and had a normal ophthalmological examination.

Discussion

Endoscopic sinus surgery offers a convenient, safe and effective alternative to open procedures and can be successfully performed in well-selected cases of sphenoid osteoma. The reduced morbidity, length of hospital stay and superior cosmetic result are distinct advantages of the technique. The endoscopic resection of a sphenoid osteoma has, however, the risk of intracranial complications such as a defect in the dura with consequent meningitis, carotid artery rupture and cavernous sinus damage. In the present case, an endoscopic operation was performed as there was no evidence of tumour involvement of the adjacent structures. The pre-operative imaging of the sphenoid region disclosed evidence of right ostial obstruction. The tumour, due to its shape, encroached upon the right part of the sinus thus causing chronic inflammation and giving rise to the mucocele. This was a true mucocele, with histopathologic evidence of a chronically inflamed mucous membrane. The proptosis of the right eyeball and the inflammatory process of the orbital fat on both sides, visible on the MRI scans, most probably resulted from disturbances in venous blood flow in the cavernous sinus, caused by mucocele compression of the right wall of the sphenoid sinus. The symptoms were aggravated on the side of the tumour. The chronic inflammation in the sphenoid sinus may have extended to the adjoining structures of the orbits. The inflammation of the orbital fat seems to have been a direct cause of the
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ophthalmologic symptoms, diplopia and limited eye movements.

Conclusion

Sphenoid osteoma, an extremely rare lesion, can be safely approached endoscopically after risk assessment and careful case selection.

References


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