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Osteochondroma of the posterior nasal septum managed by endoscopic transnasal transseptal approach

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Abstract
A case of osteochondroma of the posterior nasal septum is presented. A 57-year-old female patient presented with a history of bilateral nasal obstruction for 20 years. To the best of our knowledge, this is the second reported case of an osteochondroma of the nasal septum. It was treated by endoscopic transnasal transseptal surgery.

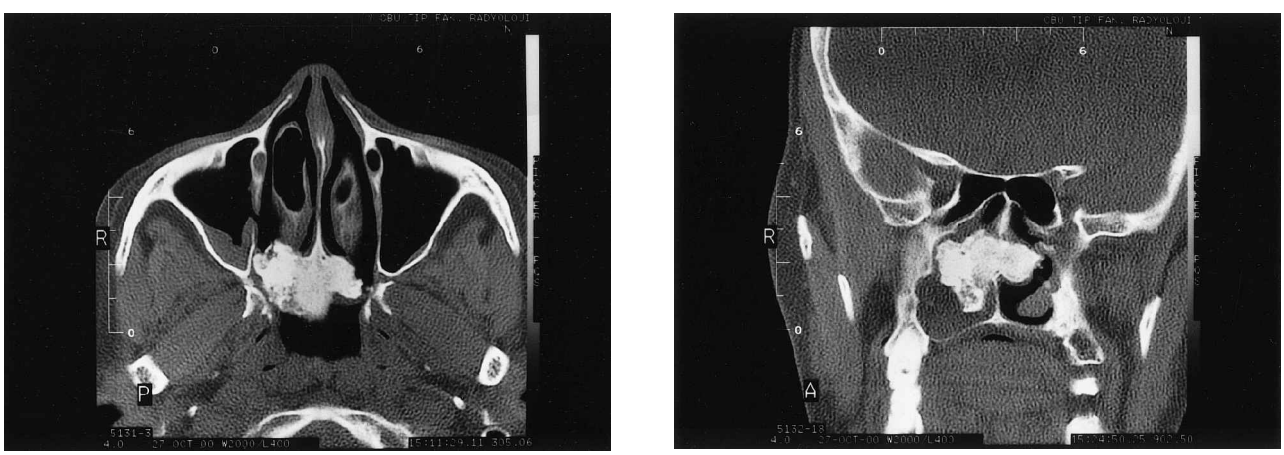
Key words: Endoscope; Surgical Procedures, Operative; Nasal Septum; Osteochondroma

Introduction

Cartilaginous tumours are rare in the head and neck region. Chondromas are asymptomatic slow-growing tumours that are usually discovered as an incidental finding on examination. They may be pure or mixed tumours, the former being called enchondromas. The latter are named according to the additional tissue component that is present such as myxochondroma, fibrochondroma, angiochondroma or osteochondroma.[1] An osteochondroma can be considered a cartilage-covered osseous excrescence that arises from the surface of a bone. Osteochondromas may be solitary or multiple (hereditary multiple exostoses) and occur spontaneously or after accidental or iatrogenic injury or irradiation. They comprise 36 per cent of all benign one tumours, but do not affect the nasal cavity.[2,3] The long tubular bones, especially the femur, humerus and tibia are involved most frequently. Osteochondromas of the cranial bones usually affect the base of the skull.[3] In the literature only one case of osteochondroma has been reported and that was a case of chondrosarcoma arising in an osteochondroma of the nasal septum.[4] We present a case of pure osteochondroma of the posterior nasal septum that was treated surgically using the endoscopic approach.

Case report

A 57-year-old female patient presented with a history of bilateral nasal obstruction and mouth breathing for 20 years but these symptoms had increased over the last five years. In addition, the patient complained of widespread spinal pain located at the neck which radiated into the right shoulder and wrist, back and lumbar regions. There was no history of trauma or radiation. Clinical examination revealed a firm and non-tender mass obstructing the posterior nasal cavity bilaterally. Nasal endoscopy also disclosed that the tumour appeared to originate from the posterior nasal septum. Computed tomography (CT) showed a large bony mass occupying the posterior part



(a) (b)

Fig. 1
Pre-operative axial (a) and coronal (b) CT show a well-defined bony mass arising from posterior nasal septum.

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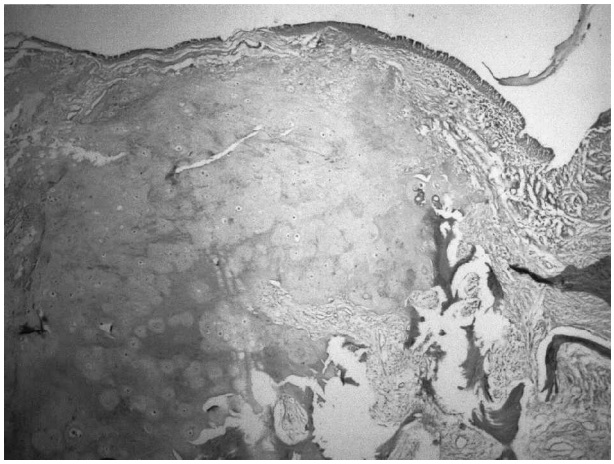


FIG. 2

Histology of the lesion showing respiratory mucosa on the surface and a hyaline cartilage cap that merges into the underlying bone (H & E; ×40)

of the nasal cavity and extending cranially to the anterior face of the sphenoid sinus. It arose from the posterior nasal septum as well. There were minimal mucosal changes in the maxillary sinuses bilaterally (Figure 1 (a),(b)). Magnetic resonance imaging (MRI) revealed the same findings with no intracranial extension. Rheumatological consultation revealed that the patient had cervical spondylarthrosis and osteoporosis. No neurological deficit was detected and there was no evidence of further axial skeletal osteochondromata. Investigations of the complete blood count, erythrocyte sedimentation rate (ESR), liver and renal function tests, blood glucose, serum calcium and phosphate levels were normal.

The patient underwent endoscopic transnasal transseptal surgery. There had been no previous biopsy as the tumour was too hard (bony) and located posteriorly.

Surgical techniques

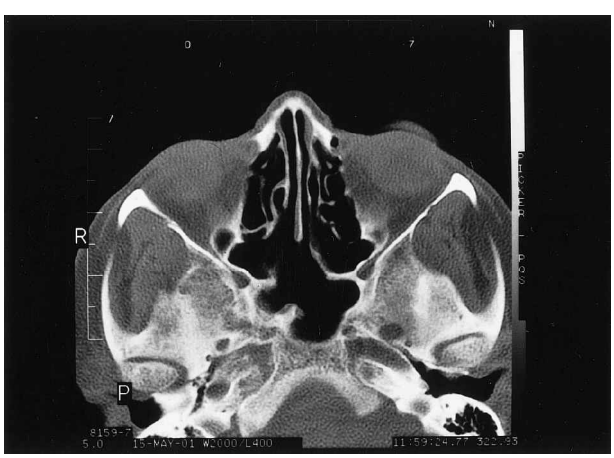
Under general anaesthesia, after lateral and posterior resection of the right middle turbinate to gain better exposure, a transseptal vertical incision was made 1 cm anterior to the tumour. Having transsected the septum at the cartilage and bone junction of the septum, the septum was separated from the hard palate inferiorly by an osteotome. The upper limit of the resection was at the level between the sphenoid ostia. The inferior half of the superior turbinates was resected for better identification of the sphenoid ostia bilaterally. After the mobilization of the tumour anteriorly, inferiorly and superiorly, the tumour was found to be attached bilaterally to the anterior wall of the sphenoid sinus. We resected the anterior and inferior walls of the sphenoid with the tumour fragments and the interior mucosa of the sphenoid was found to be normal and left intact. A wide sphenoidectomy was created.

On gross examination, the excised pieces of bone had a thick cartilage cap which was bosselated on the surface. Microscopically, the surface of the tumour was covered by pseudostratified respiratory mucosa. Under the mucosa there was a cap of hyaline cartilage that matures into bone. The chondrocytes had an orderly arrangement in the cartilage cap, and there was maturation into trabecular-appearing bone. The chondrocytes exhibited no atypicality with an orderly arrangement in the cartilage cap. Histopathological diagnosis of the specimen was osteochondroma (Figure 2). The patient has been on regular follow-up for one year until the time of this report without any recurrence of the disease on endoscopic and radiological examination (Figure 3(a)(b)).

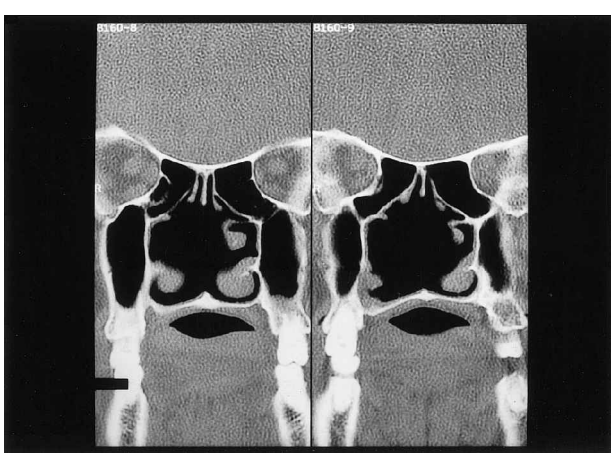
Discussion

Osteochondroma is a benign tumour of bone which rarely affects the middle third of the facial skeleton.[4] Although the histological diagnosis of a benign osteochondroma is fairly straightforward and usually a stand-alone diagnosis unless grossly discordant with the imaging, we recommend that the differential diagnosis should not be based solely on histological findings but that radiological examination should also be included. The radiological findings revealed a well circumscribed bony mass without destruction or invasion of the surrounding structures (Figure 1(a),(b)). The radiographical features of a solitary osteochondroma are easily differentiated from findings associated with an osteoma, osteophyte, enthesophyte, heterotopic ossification, or parosteal osteosarcoma.[3]

Unlike in the literature where the majority of solitary osteochondromas have been discovered in children and adolescents, our case was a middle-aged woman. A painless, slow-growing mass represents the most characteristic clinical manifestation. Osteochondromas may occasionally lead to more significant symptoms and signs related to a fracture of the exostosis, and damage of adjacent nerves or vessels. Spinal involvement (less than two per cent of cases) may lead to compression of the



(a)



(b)

FIG. 3

Axial (a) and coronal (b) CT findings of the case with no evidence of tumour recurrence after endoscopic surgery.

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spinal cord or nerve roots or, in the case of lower spinal osteochondromas, the cauda equina.[3] The spinal complaints of our case such as cervicobrachialgia and back pain were found to be related to cervical spondylarthrosis and osteoporosis. We did not detect any vertebral involvement by the osteochondroma.

Chondrosarcoma may arise in one to two per cent of solitary osteochondromas.[4–6] Secondary chondrosarcomas most commonly originate from osteochondromas.[4] Only one case of a secondary chondrosarcoma arising in an osteochondroma of the nasal septum has been reported by Barrett *et al*.[4] In our case there were no sarcomatous changes detected after histopathological examination. Microscopically, there was no evidence of invasion of surrounding tissues and no atypical cells.

Because of the tendency to sarcomatous changes the treatment of choice is wide surgical excision for this kind of lesion. In the literature, transnasal and transplatal approaches, Le Fort I osteotomy, lateral rhinotomy were applied to the patients with chrondromas/chondrosarcomas depending on the clinical and radiological findings and locations of the tumours.[1,4,6–8] We preferred to perform transnasal endoscopic surgery rather than radical approaches such as midfacial degloving, a transpalatal approach or lateral rhinotomy, because the clinical and radiological pictures of the tumour were suggestive of a benign tumour. In the literature endoscopic transnasal transseptal approaches were used for repair of anterior skull base CSF fistulae by Turgut *et al*.[9] and for resection of pituitary tumours by Nasseri *et al*.[10] We used nearly the same approach for resection for the posterior nasal septum. When this technique is compared to the alternatives, endoscopic transnasal transseptal surgery was found to be more conservative with minimal morbidity and has better intra-operative visualization and cosmetic results, but it needs experience and sophisticated instruments.[14]

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H. Halis Unlu M.D. takes responsibility for the integrity of the content of the paper.
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