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Rare case of isolated osteochondroma of the zygomatic bone: an endoscopic-assisted approach

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Rare case of isolated osteochondrosarcoma of the zygomatic bone: an endoscopic approach

AIM: *Osteochondroma is a benign neoplasia that in the craniofacial district unfrequently can occur in the coronoid process and in the zygomatic arch. We describe a rare case of isolated osteochondroma of the zygomatic bone, undergoing surgical treatment by means of intraoral approach and endoscopic assistance.*
MATERIAL OF STUDY: *A Caucasian woman aged fifty-two, has been observed in our Department on March 2012 because of pain in the right zygomatic area. Computed tomography (CT) scans of the right zygomatic bone showed an undefined, sessile lesion with lobar bounds (Fig. 2). Suspected diagnosis was osteochondroma. Surgery was planned via intraoral approach under general narcosis. The procedure was endoscope-assisted. The lesion was removed by using an endoscopic rotating cutter.*
RESULTS: *No edema, pain or fever occurred during the immediate recovery period. The patient has been followed up for 16 months and she is still actually lesion and symptoms free.*
DISCUSSION: *The use of endoscopy in the surgical treatment of this pathology has allowed to obtain a higher accuracy and a greater respect of the anatomic structures*
CONCLUSIONS: *In literature are not reported other cases of isolated zygomatic osteochondroma treated with endoscopic-assisted procedures. Intraoral approach grants no scarring; endoscopic aid gives a better view of all anatomical structures of this district, a good management of the pathology and minimize the risk of pathological fractures during intraoperative procedures.*

KEY WORDS: Endoscopic-assisted surgery,Isolated osteochondroma, Zygomatic bone osteochondroma

Introduction

Osteochondroma is a benign neoplasia that in the craniofacial district often involves mandibular ramus, body, symphysis and condyle. Unfrequently, this lesion can occur in the coronoid process and in the zygomatic arch. Its aetiology is unknown and further research is needed to identify its causes. The clinical signs are facial deformity and limitation of the movement of the jaw .The histological features include neoformative bone and cartilaginous hyaline tissue. Treatment plane is by excision. We describe a rare case of isolated osteochondroma of the zygomatic bone, undergoing surgical treatment by means of intraoral approach and endoscopic assistance. To our knowledge, this is the only reported case of osteochondroma treated by this approach.

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Case Report

A Caucasian woman aged fifty-two, has been observed in our Department on March 2012 because of pain in the right zygomatic area. The patient had been complaining a worsening pain since 7 months. Extraoral clinical examination showed a tumescence of the right zygomatic region (Fig. 1), fixed to the underlying tissues, covered with normal and smooth skin, painful when intraorally palpated. The lump presented an extimated diameter of 2,5 cm. Interincisal mouth opening was 30 mm and no lateral deviation of the lower jaw could be clinically appreciated. Computed tomography (CT) scans of the right zygomatic bone showed an undefined, sessile lesion with lobar bounds (Fig. 2). Suspected diagnosis was osteochondroma. Surgery was planned via intraoral approach under general narcosis. The procedure was endoscope-assisted by use of 0° and 30°-angled 4-mm-diameter, 18 cm length rigid endoscopes (Karl StorzEndoskope® Tuttlingen, Germany) and an optical dissector with distal spatula (50200 ES Karl StorzEndoskope® Tuttlingen, Germany). Intraoral incision was performed along the upper right vestibular fornix, following the same incisional lines used to perform maxillary osteotomy. Subperiosteal disconnection was endoscopically aided.
Intraoperative exposure of the lesion, showed a neoplasm completely fixed to the underlying zygomatic body, covered by some masseter muscle fibers (Fig. 3). The lesion was removed by using an endoscopic rotating cutter. Mandibular coronoid process was preserved, and no connection between the latter and the neoplasm could be assessed. Zygoma remodeling was lead by using a cutter.

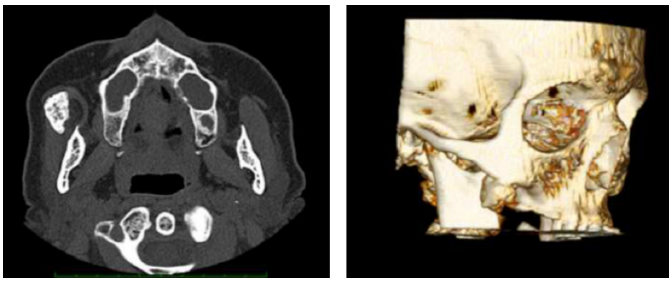

Fig. 2: CT scan showing the sessile lesion

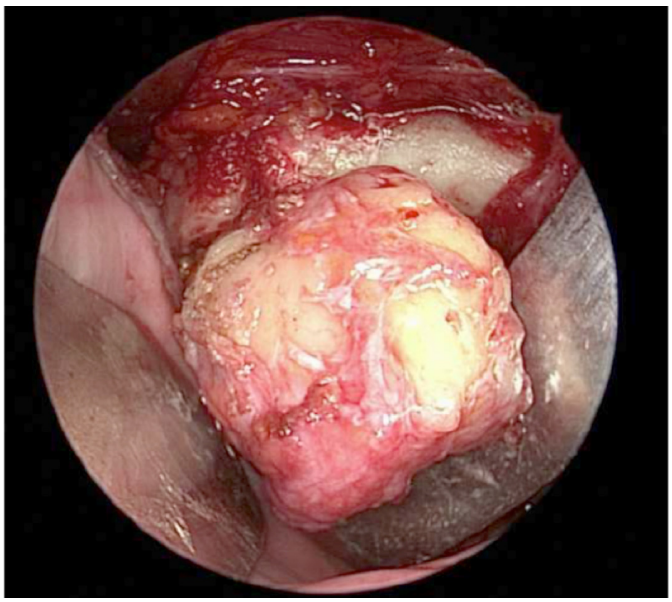

Fig. 3: Endoscopic view of the lesion

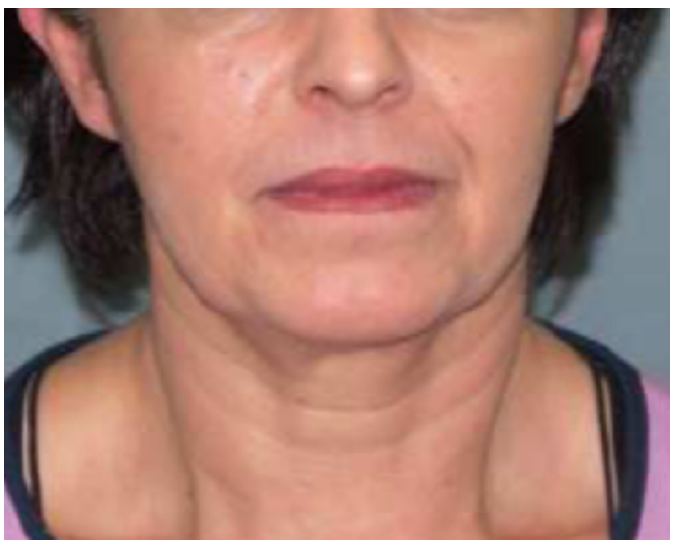

Fig. 1: Frontal apparence of the patient showing a tumescence of the right zygomatic arch.

Results

No edema, pain or fever occurred during the immediate recovery period. No complications were observed to the facial nerve. The patient was discharged on the second postoperative day. Hystopathological study confirmed previous diagnosis of osteochondroma. No relapses were appreciated at the computed tomography scans performed 4 months later. Mouth opening was normal. The patient has been followed up for 16 months and she is still actually lesion and symptoms free.

Discussion and Comments

Osteochondroma is a benign neoplasia that generally occurs in long bones metaphisis; it generally involves mainly adolescents and young adults (both genders), with 80% of the cases affecting patients in the first two decades of life[1]. Its typical location is the axial skeleton,

representing the 35,8% of all benign tumors and 8,5% of bony tumors [1,2]. By the way, osteochondroma can affect any site with encondral ossification [2] and even tumors occurring in soft tissues are reported [3]. Facial bones are an unfrequent site of developing osteochondroma. Lower jaw is the most frequent involved region of the craniofacial district. Isolated lesions of the zygomatic bone are less common. The extension of the lesion from coronoid process to the zygomatic arch, causes a progressive mouth opening limitation, also known as Jacob disease [4].

The etiology is unknown but the trigger factors may be abnormal periosteal activity. in some cases the disease may occur due to trauma.

Histologically, lesions are characterized by a growing bone mass comprehended in a cartilagineous capsule [5]. Pain, face asymmetry, and limited mouth opening are the main symptoms. After clinical examination, instrumental analysis are required. Thus, in order to get a correct diagnosis, a panoramic radiograph, focusing on the radiopacity of the mass, and a CT scan, are required. On standard radiograms, osteochondroma may appear as a sessile or plain lesion, rising from the surface of the bone. On CT, lesions can be evaluated in detail and even calcifications can be detected [6].

Radio-imaging studies are useful to assess the relationships between the neoplasm and the nearby structures, such as zygomatic arch and coronoid process, especially in those patients who show a limited mouth opening. The differential diagnosis includes benign lesions, as reactive processes, and malignant pathologies as parosteal osteosarcoma. The only reliable treatment is surgery. Surgical intervention can be performed by using different approaches: the preauricular access, that gives a limited view in case of lesions growing medially to the lower side of the zygomatic arch; the coronal approach, that can be used when intraoral approach is difficult, in case of particular size and/or position of the neoplasm, or in case of concomitant temporomandibular joint diseases, or even in case of lesions growing bilaterally [7]; the direct extraoral access, that can cause bad aesthetic outcomes, scarring, and can damage the facial nerve. An endoscopic approach has been described for the removal of osteochondromas in other maxillofacial districts. In 2011, Schoen et al. [8] reported the excision of an osteochondroma of the mandibular condile managed by using endoscopic approach. In 2002, endoscopic transnasal transseptal surgery [9] has been described as surgical treatment of the osteochondroma involving nasal septum.

Conclusion

In literature are not reported other cases of isolated zygomatic osteochondroma treated with endoscopic- assisted procedures. Intraoral approach grants no scarring; endoscopic aid gives a better view of all anatomical structures of this district, a good management of the pathology and minimize the risk of pathological fractures during intraoperative procedures.

Riassunto

L'osteocondroma è una neoplasia benigna che nel distretto cranio-facciale colpisce spesso il corpo ed il ramo mandibolare e soltanto di rado può interessare il processo coronoide e l'arco zygomatico. In questo articolo descriviamo un raro caso di osteocondroma isolato dell'osso zygomatico trattato mediante approccio chirurgico intraorale endoscopicamente assistito ed in letteratura non sono riportati altri casi di questa patologia trattati con procedure endoscopicamente assistite.

Una donna caucasica di cinquantadue anni, è stata osservata nel nostro reparto nel mese di marzo del 2012, la paziente lamentava dolore in regione zygomatica destra. La tomografia computerizzata (TC) del distretto osseo interessato mostrava una lesione sessile non definita. Il sospetto diagnostico è stato di osteocondroma. L'intervento è stato realizzato in anestesia generale mediante approccio intraorale endoscopicamente assistito. All'esame istologico del campione operatorio è stata confermata la diagnosi di osteocondroma.

Nell'immediato post operatorio la paziente non ha presentato edema, dolore o febbre.

L'uso dell'endoscopia nel trattamento chirurgico di questa patologia quindi ha consentito di ottenere una maggiore precisione e una maggiore rispetto delle strutture anatomiche. L'approccio intraorale ci garantisce l'assenza di cicatrici visibili e l'ausilio dell'endoscopia ci consente di avere una migliore visione di tutte le strutture anatomiche, una buona gestione della patologia riducendo quindi il rischio di complicanze intraoperatorie quali: fratture patologiche e lesioni del VII nervo cranico.

References

1. Lichtenstein L: *Bone Tumors.* Vth edit. St Louis, MO:CV Mosby, 1977.

2. Dahlin DC, Unni KK: *Bone Tumours: General Aspects and Data on 8542 Cases*. Springfield, IL: Thomas, 1986; 18.

3. Wells TW, Hooker SP, Roche WC: *Osteochondroma cutis*. *Report of a case*. J Oral Surg, 1977; 35:144.

4. Yesildag A, Yariktas M, Doner F, et al.: *Osteochondroma of the coronoid process and joint formation with zygomatic arch (jacob disease): Report of a case.* Eur J Dent, 2010; 4:91-94.

5. Emekli U, Aslan A, Onel D, et al.: *Osteochondroma of the coronoid process (Jacob's disease).* J Oral Maxillofac Surg, 2002; 60:1354-356.

6. Kitsoulis P, Galani V, Stefanaki K, Paraskevas G, Karatzias G, Agnantis NJ, Bai M: *Osteochondromas: review of the clinical, radiological and pathological features*. In Vivo, 2008; 22:633-46.

7. Acosta Feria M, Villar-Puchades R, Haro-Luna JJ, et al.: *Limitation of mouth opening caused by osteochondroma of the coronoid process*. Oral Surg Oral Med Oral Pathol Oral Radiol Endod, 2011; 112:e64-68.

8. Schoen R, Herklotz I, Metzger MC, et al.: *Endoscopic approach to removal of an osteochondroma of the mandibular condyle*. J Oral Maxillofac Surg, 2011; 69:1657-660.

9. Unlu Hh, Unlu Z, Ayhan S, et al.: *Osteochondroma of the posterior nasal septum managed by endoscopic transnasal transseptal approach*. J Laryngol Otol, 2002; 116:955:57.