

Mandibular Aneurysmal Bone Cyst: About One Case

Quiste Óseo Aneurismático Mandibular: Acerca de un Caso

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ABSTRACT: Aneurysmal bone cyst (ABC) is a benign multilocular expansive osteolytic pseudotumor with hematic content whose etiopathogeny is very controversial and whose histopathological diagnosis is sometimes difficult. The case of a 34 year old patient is reported, with no previous history, consulted for a right the mandibular angle and ramus swelling increasing in size, progressively hard, painless, cold, an orthopantomogram was performed in our patient completed by a facial CT scan in coronal and 3D axial sections. In view of our strong suspicion of aneurysmal cyst, we performed a fine needle puncture under general anesthesia before any operative gesture, which brought back a pure hematic liquid. We scheduled our patient for radical surgery: interrupting hemimandibulectomy of the horizontal branch at the right mandibular angle, with immediate reconstruction by maxiplate given the extent of the tumor. Aneurysmal bone cyst was described in 1940 by Ewing and individualized by Jaffe and Lichtenstein (1942) who gave it their names. Clinically, the painless facial swelling, predominantly mandibular, is the main symptom and responsible for facial asymmetry. The paraclinical examinations requested are mainly orthopantomogram and facial CT scan. The treatment of ABC is exclusively surgical, either conservative or radical. The positive diagnosis of aneurysmal cyst is brought by imaging and the confirmation is anatomopathological. Regular clinical and laboratory follow-up is required to detect any recurrence. Many minimally invasive treatments are currently available.

KEY WORDS : cyst, mandibular, aneurysmal, surgery.

INTRODUCTION

Aneurysmal bone cyst (ABC) is a benign multilocular expansive osteolytic pseudotumor with hematic content whose etiopathogeny is very controversial and histo-pathological diagnosis sometimes difficult (Sokolo *et al.*, 2006). It occurs most often in young patients (10-20 years old) and is located mainly on the long bones and the spine. 2-5 % of cases are mandibular (Guibaud *et al.*, 1998 ; Dubois *et al.*, 2003), which represents 1 % of all mandibular cysts (Bernier & Bhaskar, 1958). It occurs most often in the second or third decade with a slight male predominance (Zachariades *et al.*, 1986).

MATERIAL AND METHOD

A 34-year-old patient, with no previous history, presented with swelling on his right facial region increasing in size progressively hard, painless, cold,

with an "eggshell crackle" in places without any skin abnormality but with a sensorial deficit . On endobuccal examination: a good mouth opening, a vestibular filling opposite the right molars with slight mobility of the teeth (Fig. 1).

The orthopantomogram was requested and showed a unilocular osteolytic lesion in the right mandibular corpus extending from the mesial aspect of the first premolar to the distal aspect of the third molar with rhizolysis of the molar teeth.

Our paraclinical examinations were completed by a facial CT scan which showed a hypodense lesion, blowing the cortex with thinning or even rupture in places (Fig. 2).

In view of our strong suspicion of aneurysmal cyst, we performed a fine needle puncture under GA before any operative gesture, which brought back a

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Fig. 1. Aneurysmal bone cyst causing facial asymmetry and vestibular filling.

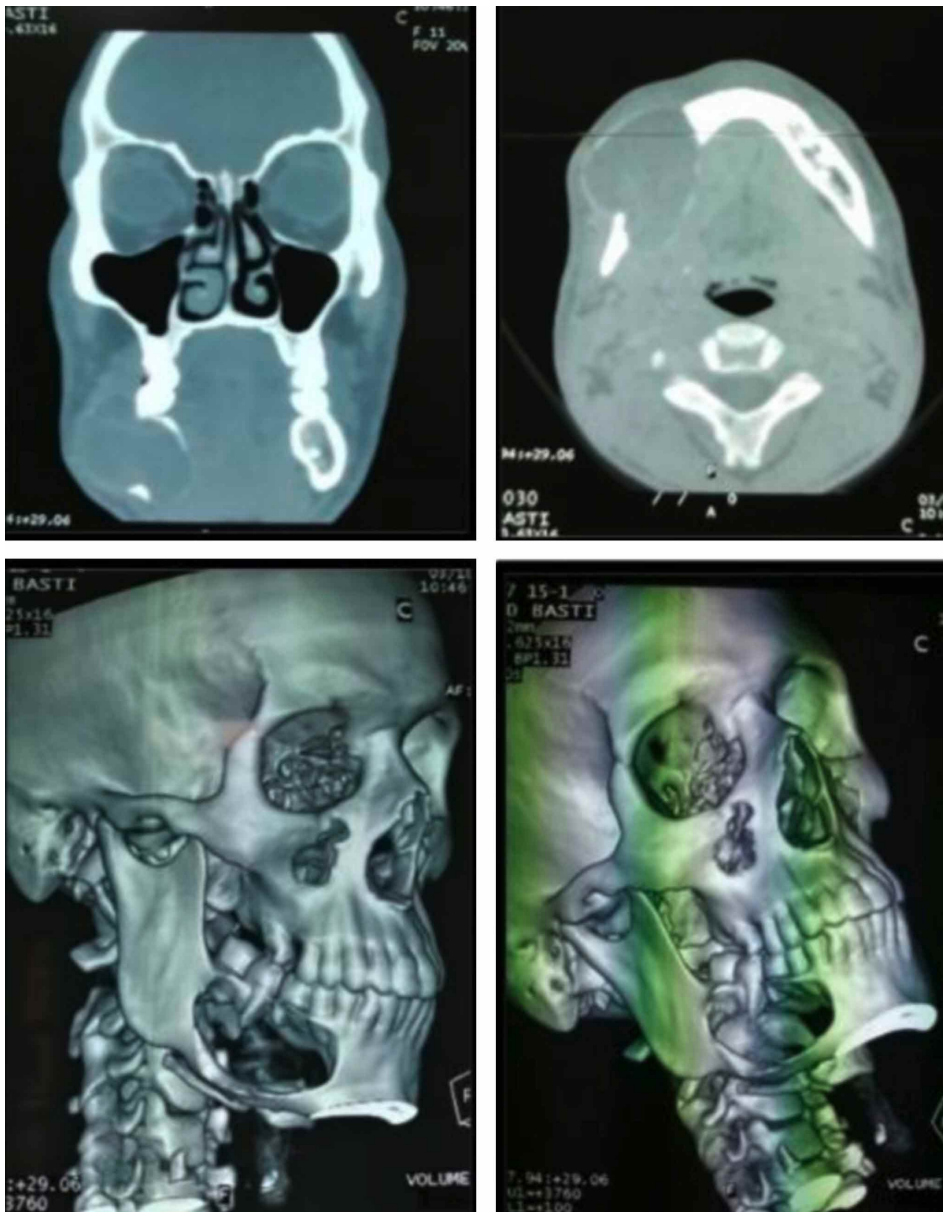


Fig. 2. Computed tomography (axial/coronal sections then 3D) showing a right angulo-cortical aneurysmal bone cyst with a uniloculated structure blowing the cortical bone with local rupture. It also allows to specify the extension to the adjacent tissues.

pure hematic liquid. We programmed our patient for radical surgery: interrupting hemimandibulectomy of the horizontal branch at the mandi angle (Fig. 3)

With immediate reconstruction by maxiplaque (Fig. 4). Neither percutaneous sclerotherapy nor radiotherapy were indicated to our patient.



Fig. 3. Intraoperative view of the aneurysmal cyst before and after the interrupting hemimandibulectomy



Fig. 4. Immediate reconstruction with maxi plaque and Surgical specimen showing a right ramic aneurysmal bone cyst, and its puncture bringing back pure blood.

An anatomopathological study of the surgical specimen was carried out, which confirmed the diagnosis of ABC. A clinical and radiological follow-up was initiated.

DISCUSSION

Aneurysmal bone cyst was described in 1940 by Ewing and individualized by Jaffe and Lichtenstein (1942) who gave it their names. It is a benign and usually solitary pseudotumor bone lesion that produces a uni- or multilocular bone cavitation with hematic content. The term "aneurysmal" simply evoked the blown appearance of the bone lesions (Reychler, 1998). Aneurysmal bone cyst is ubiquitous. It affects, in decreasing order of frequency (Reychler, 1998), long bones (60 %), short bones (25 %), and flat bones (15 %). Involvement of the facial bones is rare, 2-5 % of all skeletal locations (Reychler, 1998 ; Rapidis *et al.*, 2004). The mandible is most often affected, mainly in the molar region and angle such as the one reported in our study (90 % of cases).

Clinically, painless facial swelling, predominantly mandibular, is the main symptom (Reychler, 1998). Palpation reveals a solid, irregular mass that is integral with the bone. It evolves relatively slowly and is responsible for facial asymmetry. There are no satellite lymph nodes.

On orthopantomogram, the Aneurysmal bone cyst presents as uni- or multilocular lacunar images with partitions realizing the soap bubble or honeycomb appearance (Motamedi & Khodayari, 1993 ; Kadiri *et al.*, 1995; Halkias *et al.*, 1998). It is bordered by a thin margin of osteocondensation. The bone cortex may be blown away. Dental root resorption is occasional. The CT scan allows to specify the tumor extension and finds the same aspects. Magnetic resonance imaging is more precise (Rapidis *et al.*, 2004), it objectifies the limit between healthy tissue and lesion and clearly defines the cystic component (Kadiri *et al.*, 1995). The diagnosis of certainty is made by anatomopathological examination (Rapidis *et al.*, 2004).

The treatment of Aneurysmal bone cyst is exclusively surgical, either conservative or radical:

- Curettage is frequently recommended, but is a source of recurrence in 20 to 53 % of cases if the removal of the tumor non-complete exeresis (Padwa *et al.*, 1997;

Gadre & Zubairy, 2000).

- Cryotherapy would be indicated for lesions of easy exposure, not too extensive, without destruction of the bony cortices and with soft parts of good quality (9), the tumor recurrence is of the order of 8 % without any notion of recoil when cryotherapy is associated with enucleation or curettage according to authors like Padwa (Kadiri *et al.*, 1995).

- Radical surgery is the treatment of choice: resection with wide excision followed by immediate reconstruction. It offers a low recurrence rate with excellent morphological and functional results, which was the indication in our study.

Clinical and radiological monitoring is essential to detect recurrence. The critical period does not exceed 30 months postoperatively, as no recurrence has been observed beyond this time (Rapidis *et al.*, 2004).

CONCLUSION

Aneurysmal bone cyst is a benign lesion that affects young people. The tumor is often painful and may be apparent when it is blowing. The diagnosis can be probable with simple radiography but magnetic resonance imaging is often useful in the differential diagnosis. Biopsy is necessary since aneurysmal cysts can be confused with other differential diagnoses. The treatment of choice is surgery (conservative or radical). Regular clinical and laboratory follow-up is required to detect any recurrence. Many minimally invasive treatments are currently available.

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RESUMEN: El quiste óseo aneurismático (QA) es un pseudotumor osteolítico expansivo multilocular benigno con contenido hemático cuya etiopatogenia es controvertida de difícil diagnóstico histopatológico. Se reporta el caso de un paciente de 34 años, sin antecedentes previos, que consultó por aumento de tamaño del ángulo y rama mandibular derecha, progresivamente duro, indoloro, frío. Al paciente se le realizó ortopantomografía completada con tomografía computarizada facial en secciones coronal y axial 3D. Ante nuestra sospecha de quiste aneurismático, realizamos una punción con aguja fina bajo anestesia general antes de cualquier gesto operatorio, que devolvió un líquido hemático puro. Programamos al paciente para cirugía radical: hemimandibulectomía interrumpida de la rama horizontal en el ángulo mandibular derecho, con reconstrucción inmediata mediante maxiplaca dada la extensión del tumor. El quis-

te óseo aneurismático fue descrito en 1940 por Ewing e individualizado por Jaffe y Lichtenstein (1942) quienes le dieron sus nombres. Clínicamente, la tumefacción facial indolora, de predominio mandibular, es el síntoma principal y responsable de la asimetría facial. Los exámenes clínicos solicitados son principalmente la ortopantomografía y tomografía computarizada facial. El tratamiento del ABC es exclusivamente quirúrgico, ya sea conservador o radical. El diagnóstico positivo de quiste aneurismático se da por imagen y la confirmación es anatomopatológica. Se requiere un seguimiento clínico y de laboratorio regular para detectar cualquier recurrencia. Muchos tratamientos mínimamente invasivos están disponibles actualmente.

PALABRAS CLAVE: quiste mandibular, aneurisma, cirugía.

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