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Medicine

Osteoma of the mandibular coronoid process

Report of a case

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Abstract. A case of osteoma of the coronoid process in a 51-year-old woman is presented. Surgical resection, followed by postoperative physiotherapy to stimulate rormal function, is the treatment of choice for this lesion.

Key words: osteoma; coronoid process;

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coronoidectomy; mandible.

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Osteoma of the mandibular coronoid process is rare. Since the first case reported by LEWARS³ in 1959, only two other cases have been described^{2,6}. Another two cases have been documented by PLEZIA⁷ and WESLEY et al.⁹, however, they relied only on the radiographic appearances and histological confirmation was lacking. The present report describes a further case.



Fig. 1. Panoramic radiograph revealed an abnormal elongation of the left coronoid process.

Case report

A 51-year-old woman was referred to the Oral Pathology and Diagnosis Department of Kaohsiung Medical College Teaching Hospital complaining of restricted mandibular movements. These had been present for more than five years. There was a history of trauma over the left temporomandibular joint area. On examination, limitation of mouth opening to 11 mm, with deviation of the mandible to the left, was noted. Protrusive movement and lateral excursion were also restricted. A bony mass on the coronoid region could be palpated intraorally. The patient complained of a painful sensation over the area of the coronoid process on forced mouth opening.

A panoramic radiograph revealed an abnormal elongation of the left mandibular coronoid process (Fig. 1). A Water's view showed a mushroom-shaped radiopaque mass with a density similar to normal bone on the left coronoid process, extending to the infratemporal fossa. Axial computed tomography demonstrated a mass anterior to the left coronoid process impinging on the adjacent zygomatic arch.

Due to the clinical and radiographic findings, as well as considering the history of slow progression, a clinical diagnosis of a benign osseous neoplasm of the left mandibular coronoid process was made. Under general anesthesia, a coronoidectomy was done through an extraoral approach. A preauricular incision extending into the temporofrontal region was performed. The left zygomatic arch was sectioned and displaced laterally to explore the whole tumor. The coronoid process was resected at the level of the sigmoid notch so as to remove the entire tumor. The zygomatic arch was then repositioned and stabilized with wire osteosynthesis.

The surgical specimen was comprised of a mushroom-shaped bony mass, measuring about $3 \times 2 \times 1.5$ cm (Fig. 2). On microscopic examination, the decalcified section showed the lesion to be covered by periosteum with prominent bone trabeculae and marrow spaces (Fig. 3). On higher magnification, the specimen was seen to be composed of mature



Fig. 2. Surgical specimen showing bony mass with mushroom-shaped appearance.



Fig. 3. Photomicrograph of lesion, with no evidence of cartilaginous cap, was covered by periosteum (P) with prominent trabeculae (T) and marrow spaces (M) (HE \times 1).

lamellar bone with appositional growth and fatty marrow spaces. There was no evidence of a cartilaginous cap, such as is typically found in an osteochondroma. The final diagnosis was an osteoma of the left mandibular coronoid process.

The postoperative recovery was satisfactory without the presence of facial nerve weakness. The patient could open her mouth 28 mm one month after surgery. Subsequent physiotherapy led to normal functional jaw movement. Radiographic and clinical examinations showed no signs of a recurrence eight years after surgery.

Discussion

Many cases of osteochondroma of the coronoid process have been described since the report of SCHACK-ELFORD & BROWN⁸ in 1943. However, only three cases of osteoma arising on the coronoid process with detailed radiographic and microscopic confirmation have been previously described^{2,3,6}. The present lesion is the fourth case of this rare lesion presented in the English literature.

With large lesions of the coronoid process, such as described in the present report, an extraoral approach with out with minimal risk of damage to the nerve. An intraoral incision from the upper limit of the coronoid process to the retromolar region, to explore the whole length of the anterior mandibular ramus, avoids a skin scar and risk of facial nerve damage, but provides poor access to the area.

Differences in the proportion of bone and cartilage in the excised lesions have led to the designation of either osteochondroma or osteoma. This suggests that the etiology and pathogenesis of these two lesions may be related. Although the causative factor of osteochondroma is still uncertain, it may be related to an aberrant activity of the surrounding periosteum that forms abnormal foci of metaplastic cartilage, which undergo endochondral ossification to produce an exostosis⁵. Another possibility is that it may arise subsequent to the formation of a hematoma due to trauma, followed by fibrosis and differentiation of cartilage-producing cells¹. It may be speculated that on some occasions, the continued growth shifts to apposition of new bone instead of endochondral ossification of a growing cartilaginous cap. This may explain the absence of chondrocytes in these osteomas. The differential diagnosis should certainly also include coronoid hyperplasia. Most likely this condition is the result of reactive bone hyperplasia under the influence of an endocrine stimulus, increased temporalis activity, trauma, or is genetically determined⁴. Therefore, histologic examination of all coronoid masses, whether they are considered osteochondromas, osteomas or hyperplastic, should be performed to

find evidence for the proposed theories on their pathogenesis.

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