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Case Report

Management of a case of odontogenic myxoma in the odontostomatology department of the Idrissa Pouye general hospital in Dakar

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Abstract

Background: Myxoma is a rare benign odontogenic tumour affecting the maxillomandibular bone bases. Its incidence is variable, ranging from 0.04% to 2.3%. We report a case of odontogenic myxoma in a 46-year-old patient treated at the odontostomatology department of the Idrissa Pouye General Hospital in Dakar.
Clinical Observation: This was a 46-year-old patient referred for a lower genial swelling that had been developing for more than two years and had caused aesthetic damage and functional impairment. The exobuccal examination showed facial asymmetry without satellite adenopathy. The intraoral examination, apart from poor oral hygiene, revealed a tumour mass located on the right mandibular crest, filling the vestibule extending from tooth 45 to the retromolar trigone. The covering mucosa appeared healthy with some inflammatory areas retaining the imprint of the antagonist teeth. On palpation, the tumour was painless, firm, mobile and bleeding on contact with a wide sessile base, imaging noted an osteolytic image with clear limits blowing the bony cortex without invasion of the soft parts. The management carried out under general anesthesia consisted of surgical excision. The histopathological examination concluded in an odontogenic myxoma. Periodic checks were carried out with good postoperative outcomes. No recurrence was observed 1 years after the intervention.
Conclusion: Myxoma is a benign tumour affecting the maxillomandibular bone bases, the management of which consists of surgical excision. Regular monitoring and control is essential postoperatively due to the possibility of recurrence.

Keywords: Myxoma, Mandible, Management.

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1. Introduction

According to the World Health Organization (WHO), myxoma is a rare benign tumour of mesenchymal origin with a prevalence of 0.41% to 7.19% of benign tumours of the maxillomandibular bases.[1,2] A female predominance is reported with a ratio of ½ to ¼.[3,4]

The tumour can be encountered at any age with a higher frequency observed between the second and fourth decades of life.[5]

It is a lesion of slow and progressive evolution that can evolve over several years, very often asymptomatic but locally invasive. Its region of predilection is the posterior region of the mandible.[6]

The progressive increase in volume leads over the years to aesthetic and/or functional discomfort, a frequent reason for consultation.[7] The management is surgical with complete excision of the tumour in order to minimize the risk of recurrence. The rarity of the tumour, the lack of consensus in the treatment, its size and its location causing aesthetic and functional disorders motivated this case report. The objective of this work was to describe the clinical, paraclinical and therapeutic aspects of a case of mandibular myxoma treated at the odontostomatology department of the Idrissa Pouye General Hospital (HOGIP) in Dakar.

2. Clinical Observation

This was a 46-year-old patient referred to the HOGIP odontostomatology department for a lower genial swelling

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that had been developing for more than two years. The history of the disease would go back years with the onset of symptoms marked by a small, painless lower genial swelling with a progressive increase in volume that led to aesthetic (facial deformation) and functional (mastication and speech disorder) damage.

The exobuccal examination, on inspection, revealed facial asymmetry due to a low genial swelling covered by a normal-looking integument in frontal (**Figure 1**a) and profile (**Figure 1**b) views. Examination of the temporomandibular joints was unremarkable with a mouth opening amplitude of 35 mm.

Figure 1: Image showing an exoral front (a) and side (b) view of the patient

The intraoral examination, with teeth clenched, lips and cheeks apart, noted a tumour originating from the retromolar region occupying the maxillomandibular buccal vestibule and covering the vestibular surfaces of teeth 18, 17, 16, 45, 46 and 47 with a gap on the contralateral side (**Figure 2**a). With the mouth open, the tumour mass was bumpy in shape, with inflammatory areas due to bite trauma from the maxillary antagonist teeth with defective oral hygiene with the presence of tartar and fluorosis on the teeth, but also dyschromia of tooth 11 and lingoversion of tooth 47 (**Figure 2**b). The tumour filled the mandibular vestibule of the premolar-molar region of quadrant IV with a diameter of approximately 70 mm in the major axis (**Figure 2**b). On palpation, the tumour mass was painless, mobile, firm in consistency, with a broad sessile base, bleeding on contact with deformation of the lingual bone table.

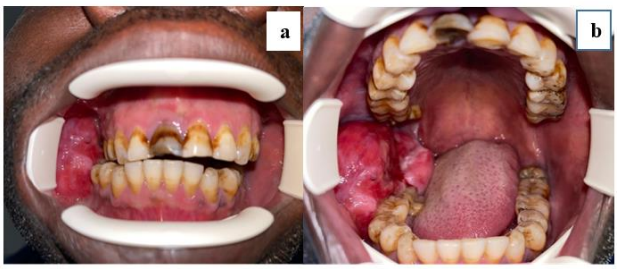

Figure 2: Intraoral view showing the mandibular myxoma on the right side, teeth clenched, lips and cheeks apart (a) and mouth open (b)

At the end of the clinical examination, a diagnostic hypothesis of benign tumours of the oral cavity such as an odontogenic myxoma, a giant epulis or a giant cell granuloma was retained.

To assess the relationships of the tumour with the neighboring anatomical structures and plan surgical excision, a computed tomography (CT) scan was requested, the results of which in the bone window, with the different slices, showed a unilocular hypodense image blowing and lysing the bony cortex of the mandible with rupture in places and without dental rhisalysis (**Figure 3**a, b).

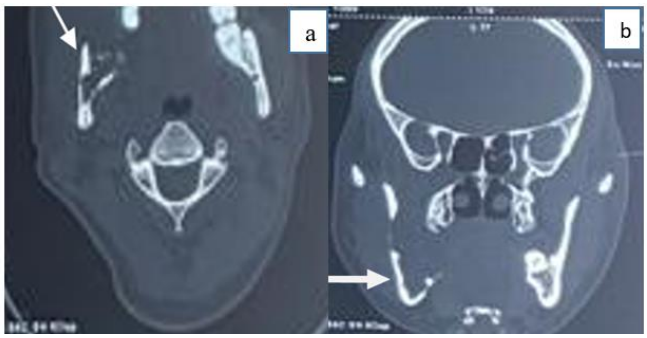

Figure 3: Maxillofacial computed tomography. (a) Cross-sectional bone window and (b) Frontal section showing a right mandibular cortical rupture

Given the aggressive nature of the tumour and certain characteristics suggesting malignancy, an incisional biopsy was performed and the results showed an odontogenic myxoma with randomly oriented spindle and round cells.

The therapeutic decision was surgical excision under general anaesthesia for comfort and safety reasons due to the posterior location and size of the tumour.

After placing the patient in the supine position, general anaesthesia was performed followed by nasotracheal intubation, then exo and endobuccal disinfection before placing an orotracheal packing.

An infiltration of the lesion with an anesthetic solution with vasoconstrictor was first performed in order to reduce intraoperative bleeding. Equipped with an electric scalpel, an incision of the perilesional mucosa following the cleavage zone was made, followed by careful detachment with a detacher which allowed the surgical specimen to be released (**Figure 4**). Then the avulsion of teeth 46 and 47 was performed followed by a revision of the surgical site, regularization of the ridges (**Figure 5**) and the creation of continuous overcast sutures associated with simple O-shaped stitches using non-absorbable thread.

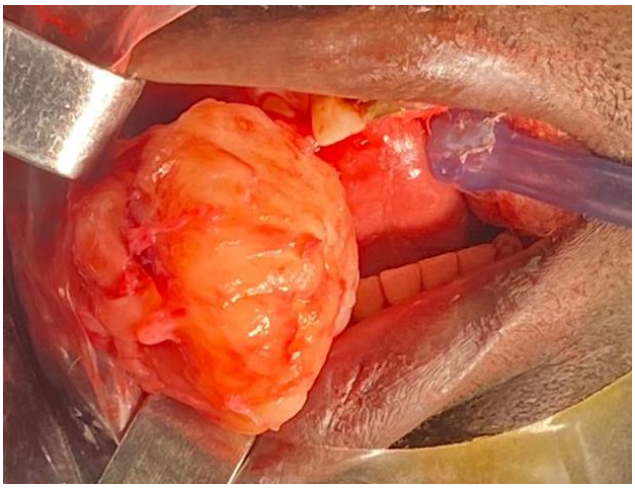

Figure 4: Image showing the excision of the tumour lesion after cleavage with the Molt detacher

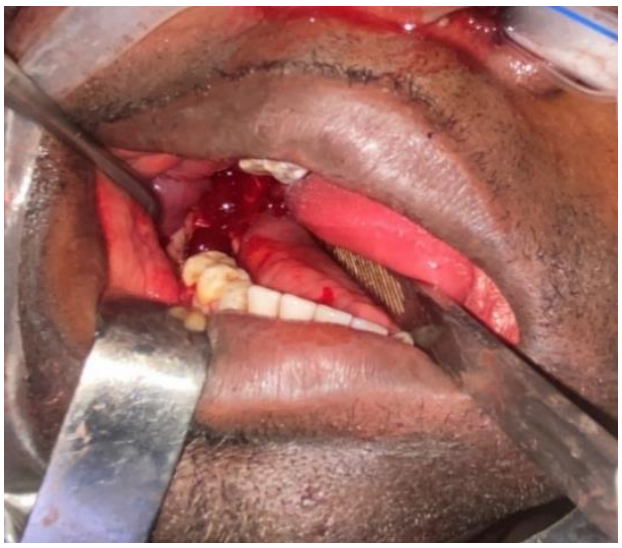

Figure 5: Intraoral view after tumour excision, tooth extraction and surgical site revision

The postoperative prescription was:

- Antibiotic (Amoxicillin 01 gram) at a rate of 01 gram every 12 hours for 07 days,
- Analgesic (Paracetamol 01 gram), at a rate of 01 gram every 06 hours on demand,
- Steroidal anti-inflammatory (Prednisolone 20 mg) 01mg/kg/day for 03 days,
- Oral antiseptic based on Chlorhexidine 0.2% in diluted mouthwash to start 24 hours after surgery.

The surgical specimen measuring 9 cm in diameter along the major axis (**Figure 6**), had been placed in a bottle containing a preservation solution (Buffered Formalin) and sent to the anatomy-pathology laboratory for a histopathological examination which confirmed the diagnosis of odontogenic myxoma.

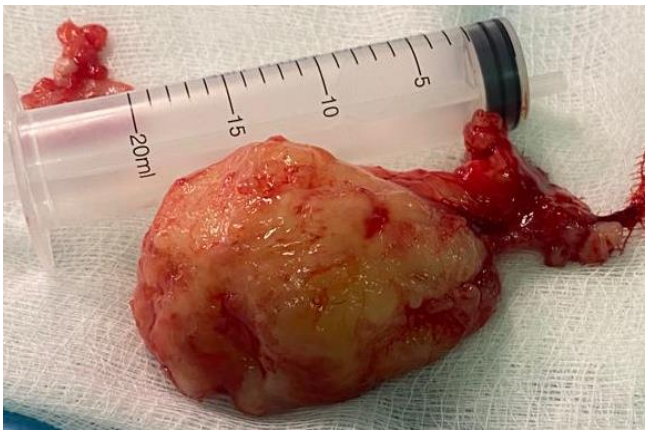

Figure 6: Image showing the surgical specimen of the tumour after excision

Postoperative follow-up showed good progress at D1, D7, D14, one year and two years. The postoperative course was good with no recurrence noted (**Figure 7**).

Figure 7: Image showing an exorbuccal frontal view before (a) and after (b) surgical excision of the tumour

3. Discussion

Odontogenic myxoma, first described by Virchow in 1863, is defined as a rare mesenchymal tumour of benign evolution. It is composed of stellate and spindle cells in a myxoid stroma.[8] Most authors consider myxomas of the jaws to be lesions specific to the maxillary bones, without any direct comparison with extrafacial myxomas.[8.9]

Odontogenic myxoma is a slow-proliferating, nonmetastatic but locally aggressive benign odontogenic tumour preferentially affecting the posterior region of the mandible, as described in this case report.[8] These are rare lesions, with a reported annual incidence of 0.07 per million and a prevalence of 3–6% of all benign odontogenic tumours.[9]

Myxomas are benign tumours affecting several organs including the heart, skin, bones or muscles. Cases affecting the maxillofacial regions, particularly the maxillomandibular bone bases, are relatively rare.[10] These tumours are generally located in the toothed region, particularly molars, often associated with certain dental anomalies such as malpositions and/or agenesis.[11]

According to the work of Okubo et al., in 2021; myxoma most often occurs in soft tissues more precisely at the level of the inner face of the cheek.[12] The tumour can be encountered at any age with a higher frequency between the second and fifth decades of life.[5,13] This is in perfect agreement with the present observation where the patient was 46 years old.

Myxoma is found in both men and women.[14] However, a female predominance with a sex ratio of ½ to ¼ has been reported by authors.[4,11]

The consultation time is variable and can be up to several years.[4,7,11] In the present case report, the tumour had been evolving for more than 2 years. This delay in consultation could be explained by the patient's low socio-economic situation, the use of traditional medicine and the inaccessibility of specialized care services. Kwedi et al., in 2019; in their work reported a short consultation time of 4 months.[7]

Due to its slow and silent evolution, myxoma can cause aesthetic damage during its evolution due to the swelling it can cause and functional disorders during chewing due to rhyzalysis and dental movements.[12,15] These observations were described in this case report which motivated the patient's consultation.

Myxoma can be found in both the maxilla and the mandible with an anteroposterior mandibular location twice as noted.[7] In 1947, Thoma and Goldman described two types of maxillary myxoma, one central and the other peripheral. The central form originates in the bone, in which it develops, blows and deforms the bone cortices with sometimes ruptures in places and infiltration of the surrounding soft tissues.[15] In this case report, the tumour was intraosseous with ruptures of the cortex in places.

Generally, myxoma is asymptomatic. However, symptoms such as pain and paresthesia can be reported when the lesion reaches a certain size due to trauma and compression of the vascular-nervous bundle.[16] With the slow and progressive evolution, myxoma will cause aesthetic and/or functional damage often motivating consultation with a specialist;[12] as was the case in the present observation.

On radiography, depending on the stage of evolution, several aspects have been described such as an expansive radiolucent gap with a speckled or "honeycomb" appearance, a unilocular radiolucent image (33% of cases) or multilocular (55% of cases).[17] However, root resorptions are not frequent.[17] This is in perfect agreement with the data of the present case report where the apices of the teeth were not rhyzalysed.

To date, there is no consensus regarding the treatment of odontogenic myxoma. Curative treatment has not been adequately standardized and recommendations are based solely on a multitude of case reports and literature reviews.[18,19] Small myxomas (<3 cm) can be treated by surgical excision with follow-up for at least 5 years. However, large myxomas would require extensive resection because myxomas are non-encapsulated lesions that tend to infiltrate the surrounding bone.[20]

According to literature data, no significant difference has been noted in the frequency of recurrences over 10 years postoperatively after treatment by resection or treatment by conservative surgical excision.[19] Indeed, conservative treatment should be considered as a first-line treatment. Resection can cause temporary or permanent lesions such as lesion of the inferior alveolar nerve, loss of function such as chewing, or even the aesthetic profile of the patient, thus affecting their quality of life.[21,22] In this patient, conservative treatment had been undertaken and no complications have been noted to date. Recurrences are generally observed during the first 2 years after the first treatment. Liquid nitrogen cryosurgery may limit recurrence because of its ability to devitalize the organic content while leaving the inorganic framework intact. Odontogenic myxoma has a high recurrence rate of between 25% and 43%.[23]

Macroscopically, it presents as a soft, glistening, gelatinous, and non encapsulated lesion. Microscopically, it is relatively hypocellular and composed of haphazardly arranged stellate, spindle-shaped, and round cells in an abundant loose myxoid stroma that contains only a few collagen fibrils.[15] On the basis of histopathology it should be differentiated from chondromyxoid fibroma and myxoid neurofibroma. Chondromyxoid fibroma is a well circumscribed tumour consisting of nodular myxoid tissue with scattered giant cells and areas of cartilagenous differentiation. It is located most commonly in the metaphyseal region of the long bones and rarely involves the jaws whereas myxoid neurofibroma tend to have scattered lesional cells that are positive for antibodies directed against S-100 protien. Even a enlarged dental follicle or a dental papilla of a developing tooth with myxoid change may be microscopically similar to a myxoma. The anatomopathological study of the excised specimen shows a benign tumour proliferation. It consists of loose myxoid tissue stroma with scattered spindle and stellate cells. In our clinical observation, no recurrence was reported after one year.

4. Conclusion

Odontogenic myxoma is a rare, asymptomatic, locally aggressive benign odontogenic tumour that preferentially affects the mandible. It most often occurs between the second and fourth decades of life, with a peak in the third decade. Clinically, odontogenic myxoma is characterized by slow and progressive growth that leads to aesthetic and/or functional damage over the years. Clinical and radiological data may suggest other tumours, which sometimes explains the use of incisional biopsy before excision. Treatment is currently

surgical with either conservative surgical excision or resection by amputation of the affected part of the jaw.

Regular and close clinical and radiological monitoring is recommended after excision in order to detect any possible recurrence.

5. Source of Funding

None.

6. Conflict of Interest

All authors declare no conflicts of interest.

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