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Case Report

Conservative Surgical Treatment of Follicular Ameloblastoma: Case Report

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Abstract

Ameloblastoma is a benign but locally aggressive odontogenic tumor known for its high recurrence rate, often requiring extensive surgical procedures. We present a unique case of a follicular ameloblastoma of the mandible in a 57-year-old woman who experienced a slowly progressive swelling and discomfort in the lower left posterior region for over two years. Unlike the conventional radical management that involves segmental or marginal bone resection, a conservative treatment approach based on enucleation and curettage was chosen, considering the clinical and radiological characteristics of the lesion. eighteen months after surgery, no recurrence was observed, and the patient achieved satisfactory functional and esthetic outcomes. This case highlights the importance of individualized treatment planning in ameloblastoma management and demonstrates that, in carefully selected cases, conservative surgical intervention can provide effective disease control while minimizing postoperative morbidity and improving quality of life.

Keywords: *Ameloblastoma; Follicular Ameloblastoma; Odontogenic Tumor; Conservative Surgery; Case Report*

Abbreviation

WHO: World Health Organization

Introduction

Ameloblastoma is a benign odontogenic tumor of epithelial origin, characterized by a slow but locally invasive growth pattern and a marked tendency for recurrence after treatment, necessitating early diagnosis to prevent extensive and mutilating surgical procedures [1]. It represents approximately 1% of all oral tumors and 11% of odontogenic tumors, with an estimated annual incidence of 0.5 new cases per million population, occurring more frequently in Africa, China, and India compared to Western countries [2]. The tumor typically affects adults between 30 and 60 years of age, with a slight male predominance (1.2:1), and is most often located in the mandible-particularly the posterior and third molar regions (80% of cases) [3,4].

According to the 5th edition of the World Health Organization (WHO, 2022) classification of Head and Neck Tumors, ameloblastomas are categorized into unicystic, extraosseous/peripheral, adenoid and conventional types, the latter including several histological subtypes such as the follicular variant [5].

Surgical excision remains the cornerstone of ameloblastoma management, and the choice between conservative (enucleation or curettage) and radical (resection with adequate margins) approaches continues to be debated due to varying recurrence rates and functional outcomes [6,7]. This case is unique as it describes the successful conservative management of a mandibular follicular ameloblastoma in a 57-year-old female patient, demonstrating that, in well-selected cases, a conservative surgical approach can achieve effective disease control while preserving esthetics and function.

Case Description

Patient information

A 57-year-old female patient presented at the oral medicine and oral surgery Department of Ibn Rochd University Hospital of Casablanca with a persistent swelling and discomfort in the lower left back tooth region that had been progressively evolving for 12 months, without any associated pain. The patient had no particular medical history.

Clinical findings

Exobuccal examination revealed no notable asymmetry and no sign of lymphadenopathy.

Endobuccal clinical examination showed the absence of all mandibular molars except for persisting roots of tooth 36 and the remaining of all premolars and anterior teeth. The examination also revealed a vestibular and lingual swelling in the left mandibular region extending from tooth 33 to 36, covered by a mucous membrane with a normal appearance. Palpation revealed a firm and non-painful bulging of both vestibular and lingual cortical bones. Teeth 34 and 35 showed grade II mobility (Figure 1).

Figure 1: *Intraoral image of the patient showing swelling in the left mandibular area.*

Diagnostic assessment

The panoramic radiograph showed a well-limited, honeycombed radiolucent lesion extending from the mesial aspect of 32 to the mesial aspect of 36; also reaching the mental foramen in the coronal-apical direction. Signs of root resorption are present on 33, 34 and 35 but no teeth displacement was noted (Figure 2).

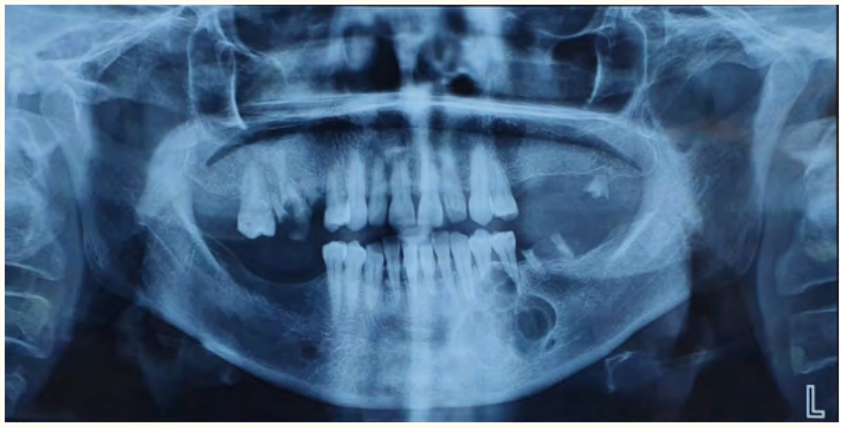

Figure 2: *Orthopantomogram of the patient showing radiolucency in the left mandibular area.*

Cone-beam computed tomography (CBCT) displayed a multilocular radiolucent image, partitioned by bony lamellae with the rupture of vestibular cortical bone; giving a honeycomb-like appearance. No alterations to adjacent structures were observed (Figure 3).

Figure 3: *CBCT in axial sections of the multilocular honeycomb-like lesion.*

The presumed diagnosis was in favor of a benign odontogenic tumor, which required confirmation by histopathological examination.

Therapeutic intervention

Treatment involved the extraction of teeth 34, 35, and 36, enucleation of the lesion and bone curettage under local anesthesia (Figure 4 and 5).

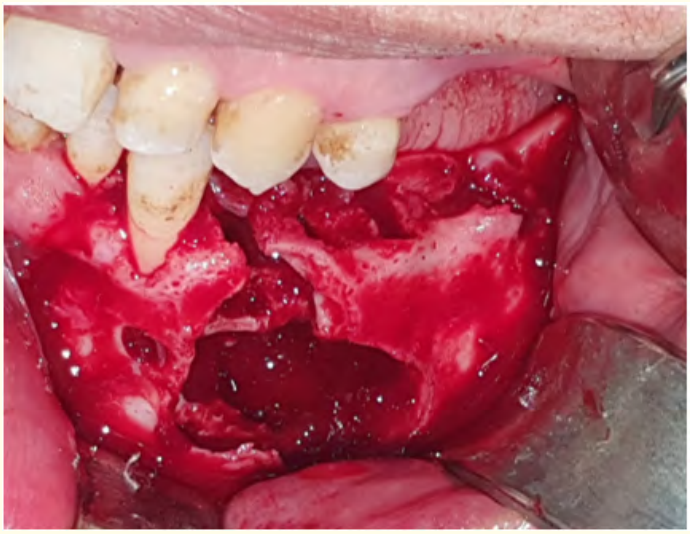

Figure 4: *Enucleation and bone curettage of the lesion.*

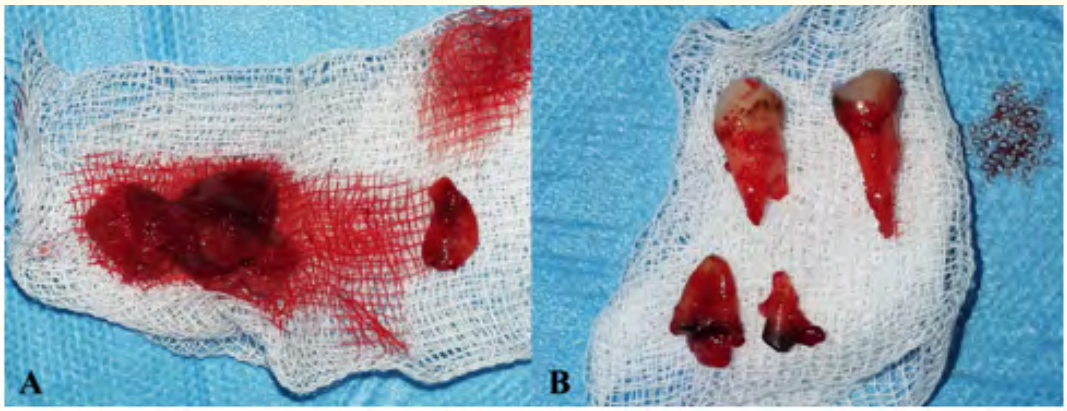

Figure 5: *A. The surgical specimen B. Extracted teeth 34, 35 and 36.*

Results

Part of the the tissue was sent for histopathological examination which revealed epithelial islands and strands embedded within a fibrous connective tissue stroma, consistent with an odontogenic tumor. The epithelial cells exhibit peripheral palisading with columnar morphology and areas of reverse nuclear polarity, while the central regions resemble stellate reticulum-like cells. These features are characteristic of a follicular sub-type. The surrounding stroma appears loosely arranged with some areas containing red blood cells, suggestive of vascular or hemorrhagic components. Overall, the microscopic findings support the diagnosis of follicular ameloblastoma (Figure 6).

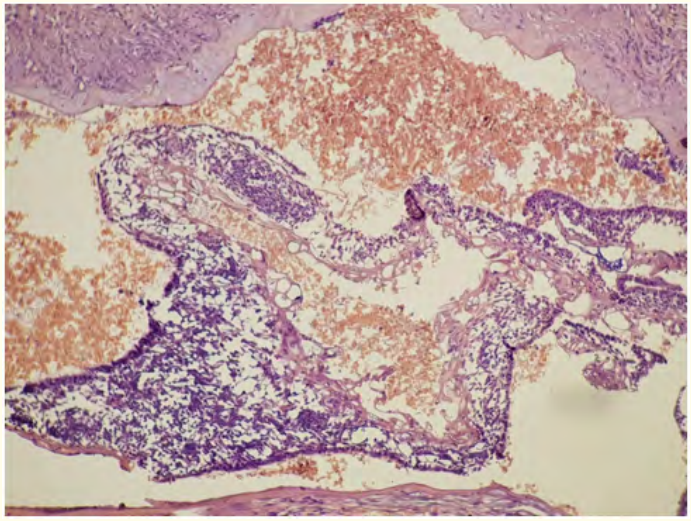

Figure 6: *Histological examination: Follicular ameloblastoma.*

10-days follow-up showed favorable healing (Figure 7). Then clinical and radiological examinations at 3, 6 and 18 months indicated marked new bone formation without any sign of recurrence at the operation site (Figure 8).

Figure 7: *10 days follow-up.*

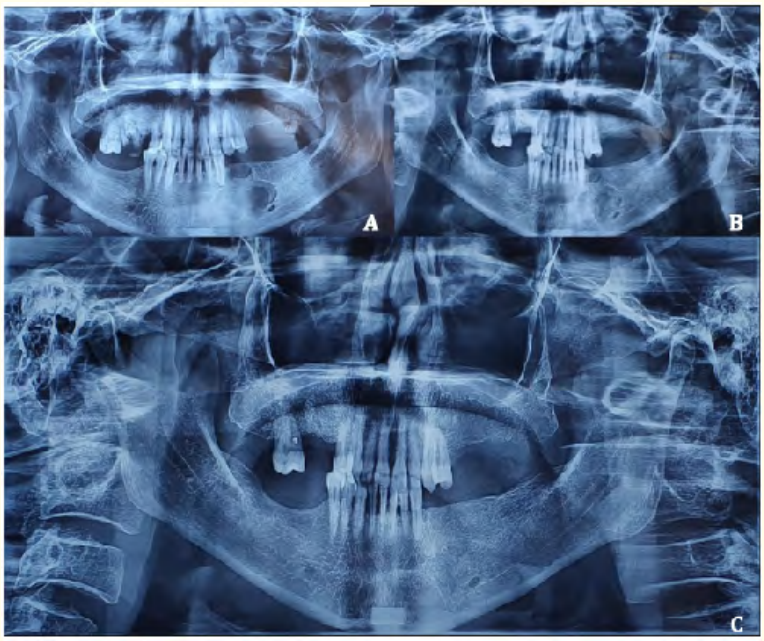

Figure 8: *Panoramic views of bone formation process in 3, 6 and 18 months. A: Panoramic view showing a large radiolucent lesion at the left premolar region of the mandible at 3 months. B: Decrease of the volume of the lesion and bone healing process is observed at 6 months. C: Complete bone healing.*

Discussion

Ameloblastoma typically appears as a slowly progressing and relatively painless tumor [8]. Because of its locally aggressive nature, it can rapidly expand, causing significant tumor growth that may result in tooth displacement, mobility, or root resorption. If left untreated, it can also lead to facial disfigurement [3]. Clinically, it manifests as a painless swelling in the affected region of the jaw. Pain, when present, is often due to hemorrhage in the adjacent soft tissue. Most ameloblastomas, however, are incidentally discovered as symptomless unilocular or multilocular osteolytic lesions on radiographs taken for other reasons [4,8].

The management of both primary and recurrent ameloblastomas is surgical. However, the decision between conservative and radical approaches, based on clinical, histological, and radiographic features, remains contentious and is extensively debated in the literature [3]. Indeed, although benign, an ameloblastoma has a high likelihood of recurrence, especially the conventional type [7]. The latter has a recurrence rate of 60 - 80% with local treatment and as low as 0 - 10% with radical treatment [9]. Consequently, the standard approach often involves wide local excision, removing 1 - 1.5 cm of healthy bone surrounding the tumor [2,9]. This frequently requires reconstructive surgery using free tissue transfer of a composite flap. However, this conventional treatment method is associated with numerous complications, such as functional and masticatory changes, facial deformities, and neurological sequelae resulting from the sacrifice of the inferior alveolar nerve [10].

On the other hand, conservative surgical treatment-consisting of enucleation and curettage, sometimes preceded by marsupialization-preserves normal tissues, minimizes facial disfigurement, and supports a good postoperative quality of life [3]. Moreover, Xiao., *et al*. suggested that even conventional ameloblastoma cases may be treated by complete tumor removal while preserving the lower border of the mandible whenever possible [6]. Given these considerations, a conservative approach should always be prioritized as the first line

of management whenever the clinical, radiological, and histopathological features allow it, as it can spare the patient from significant functional, aesthetic, and psychological comorbidities associated with radical resection. Radical surgery should be reserved for cases where conservative treatment is unlikely to achieve complete removal or where recurrence occurs despite adequate conservative management.

Therefore, the treatment choice requires a thorough evaluation of multiple factors, including the patient's age, clinical presentation, medical condition, and preferences concerning potential facial deformity, treatment adherence, and postoperative quality of life [3]. This individualized decision-making process helps achieve the best possible balance between disease control and preservation of function and appearance [7]. In the present case, a conservative approach was chosen after careful assessment of the tumor's clinical and radiological features, as well as the patient's preference for a less invasive procedure. This treatment demonstrated favorable outcomes, with no signs of recurrence at the 18-month follow-up. By opting for this approach, the patient was spared the potential complications and morbidity associated with more radical surgical resection.

Conclusion

This case highlights the value of a patient-centered and evidence-based approach in the management of ameloblastoma. Whenever feasible, conservative surgical treatment should be prioritized as it offers effective tumor control while minimizing functional, esthetic, and psychological morbidity. The successful outcome observed in this case supports the consideration of conservative management as a valid first-line option in well-selected patients. Long-term clinical and radiological follow-up remains essential to detect any potential recurrence and to ensure sustained therapeutic success.

Conflict of Interest

No conflict of interest.

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