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A Challenging Case of an Intraosseous Schwannoma of the Jaws Mimicking a Giant Cyst: About a Case Report

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Abstract **Case Report**

Schwannoma is a benign tumor originating from schwann cells that cover myelinated nerve fibers. And is relatively uncommon, particularly when it occurs within the jaw bones. To this day, very few cases of intraosseous schwannoma of the jaws have been documented in the literature with still no clear consensus on its management. We present a rare case of mandibular schwannoma in a 37 -year-old french female. Clinically, the lesion mimicked a giant cyst presentation. Radiological examination using an orthopantomogram suggested differential diagnoses including ameloblastoma and odontogenic keratocyst. However Histopathological analysis confirmed the lesion to be a schwannoma originating from the inferior alveolar nerve. This case report aims to highlight the limited literature on intraosseous schwannomas of the jaw and its challenging management approach.

Keywords: Schwannoma, intraosseous, mandible, inferior alveolar nerve, surgery.

INTRODUCTION

Schwannoma is a benign neoplasm of neuroectodermal origin that arises from Schwann cells, which envelop peripheral nerves [1–2]. Typically painless and slow-growing, this lesion can develop at any age and most commonly occurs in the soft tissues of the head and neck region [3,4].

Intraoral schwannomas are uncommon, accounting for less than 1% of all benign primary bone tumors [5], with the mandible being the most frequently affected site [6,7].

These tumors typically exhibit slow growth, often leading to localized swelling or discomfort. However, they may remain asymptomatic and go unnoticed until incidentally discovered during routine radiographic examinations [8]. Their imaging appearance can range from unilocular to multilocular radiolucencies, making accurate diagnosis challenging [9]. Although benign, surgical removal is necessary due to the potential bone destruction, displacement of adjacent dental structures, and the rare possibility of malignant transformation [10].

This case report presents a 37-year-old female diagnosed with a mandibular schwannoma, that first was mistaked for a giant cyst. It underscores the significance of early detection, comprehensive radiological assessment, and individualized surgical planning to ensure optimal clinical outcomes.

OUR CASE

A 37-year-old woman with no previous medical history presented to our dental structure with no symptoms for a routine check up, Physical examination found no dermatological or intraoral abnormalities A panoramic radiograph showed a unilocular radiolucency extending from the condylar mandibular region to the right first pre molar region (Figs 1,2).

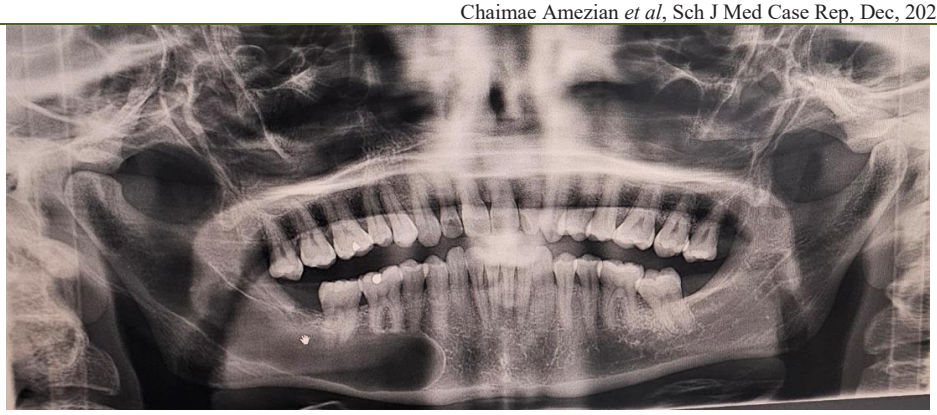

Figure 1: Panoramic radiograph showing a unilocular radiolucency extending from the condylar mandibular region to the right first pre molar region

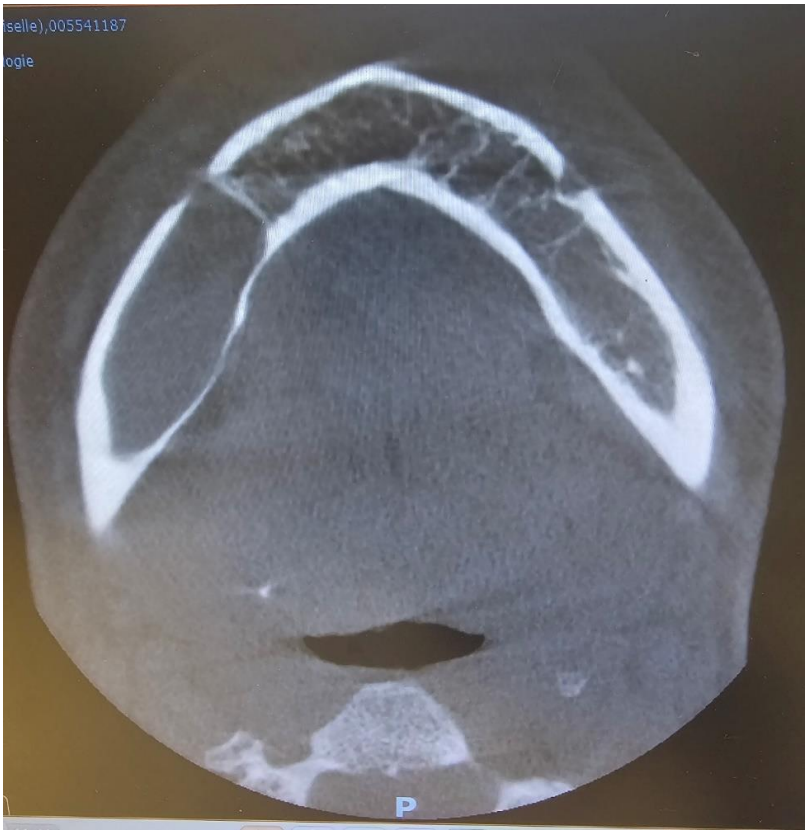

Figure 2: CT scan on axial view showing the extent and of the lesion and its relations with the teeth roots and cortical bone

The patient underwent a biopsy excision under general anesthesia that revealed Antoni A and B patterns with hyalinized Verocay bodies among spindle-shaped cells, diagnosing the mass as a schwannoma (Figs 4 and 5).

DISCUSSION

Fewer than 100 cases of intraosseous schwannoma of the mandible have been documented to date. Most publications describe single case reports, making it difficult to establish a standardized treatment protocol.

Schwannomas typically develop without symptoms. As a benign and slow-growing tumor, it can remain undetected for several years before clinical signs such as swelling, pain, or sensory disturbances—like numbness of the lower lip—appear. Women are more frequently affected than men [11]. According to the literature, cases have been reported across a broad age range, from 3 to 86 years. The mandible appears to be more commonly involved, likely due to the extended course of the inferior alveolar nerve canal within the mandibular bone [12]. Furthermore, published data indicate a marked predilection for the posterior region of the mandible [13].

Due to its often nonspecific or entirely absent clinical presentation, mandibular schwannoma is frequently discovered incidentally during radiographic examinations—typically a mandibular X-ray performed

for dental purposes. like in our patient case. Radiographically, the lesion usually appears as a well-defined, unilocular, nonspecific radiolucent area. Root divergence and root resorption are typically observed only in teeth in direct contact with the lesion [14].

In our patient, the panoramic radiograph revealed a multilocular radiolucency along with an associated image suggestive of an inflammatory dental cyst at the root of the mandibular right first premolar This co-occurrence is rarely reported in the literature [11]. The differential diagnosis initially included an odontogenic tumor or a fibro-osseous lesion.

Computed tomography revealed a mass connected to the mandibular canal, which appeared widened—suggesting the possibility of a nerve sheath tumor, although such tumors are infrequent in this location.

The definitive diagnosis of schwannoma is established through histopathological examination and specific immunohistochemical staining. Intraosseous schwannomas share identical histological characteristics with their soft tissue counterparts [15]. Histology confirms the benign nature of the tumor.

Surgery remains the only treatment option for this condition.to this day a standardized treatment protocol has not yet been established, some authors have proposed sagittal split ramus osteotomy (SSRO) and endoscopy-assisted surgery as treatment options for mandibular schwannoma. However, these techniques necessitate a preoperative diagnosis through biopsy, which may not always be feasible.

Enucleation via an intraoral approach is the technique of choice used for treating mandibular cysts and the majority of mandibular schwannomas [16,17]. This procedure is relatively straightforward, cost-effective, and can be performed in a short time. However, it has certain limitations, including a restricted surgical field and the need to create a buccal bony window. Alternatively, sagittal split ramus osteotomy (SSRO) offers advantages such as minimizing bone loss and better preserving nerve function. [6,8] Additionally, internal fixation following SSRO helps prevent postoperative pathological fractures.

Segmental mandibulectomy has been recommended in cases involving significant cortical thinning or erosion [18,19]. However, due to the lack of standardized criteria, the decision largely relies on the surgeon's clinical judgment. In the authors' view, enucleation should be the preferred approach as long as the cortical bone remains largely intact, regardless of the extent of mandibular expansion. Conversely, when the tumor is excessively large or there is clear cortical erosion, a more radical surgical intervention is considered justified [20].

CONCLUSION

Although rare, nerve sheath tumors such as schwannomas should be considered in the differential diagnosis of asymptomatic jaw lesions presenting as large radiolucencies, even when clinical and radiographic findings suggest a dental origin. The treatment of schwannomas typically involves conservative surgical excision, aiming to preserve nerve integrity whenever possible. Histopathological analysis is essential to distinguish schwannomas from neurofibromas, the latter having a higher risk of recurrence and often requiring more extensive surgical intervention. Patients must be informed of the potential risk of postoperative sensory loss affecting one side of the lower lip, a complication that can be particularly distressing.

Consent: Written informed consent was obtained from the patient for publication of this case report and accompanying images.

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