Mental Nerve Schwannoma - A Rare Cause of Lower Jaw Swelling

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INTRODUCTION

Schwannomas are relatively rare benign neoplasms of neurogenic origin from the neural sheath of peripheral nerves occurring more commonly in the head and neck. Mandibular bone is the commonest site of occurrence of these nerve lesions. Radiographically, intraosseous schwannoma of mandible is very difficult to differentiate from other bony pathologies such as neurofibroma, ameloblastoma, fibrous dysplasia, myxoma, central giant cell lesion, or periapical lesion, so it should be included in the differential diagnosis of lower jaw swelling.

Schwannoma as a pathologic entity was first reported in 1910 by Verocay. Schwannoma (also known as neurinoma, neurolemmoma, neurilemmoma, perineural fibroblastoma, and peripheral nerve sheath tumour) is a rare, slow-growing, benign neurogenic neoplasm that originated from Schwann cells. Schwann cells cover myelinated sheath of nerve fibres.¹

These intraosseous schwannomas account for not more than 1 % of the central neoplasms. More than one third of all schwannomas are found in the head and neck region.² Most of these originate from the lower cranial nerve and sympathetic nervous system. Schwannomas from the upper cranial nerves such as trigeminal nerve and its branches are less common. Other commonly reported sites include the vertebra, clavicle, ribs, sacrum, humerus, ulna radius, etc. This painless slow-growing neoplasm may develop at any age.

PRESENTATION OF CASE

A 24-year-old male patient reported at the Department of Dentistry, Sri Manakula Vinayagar Medical College and Hospital, Pondicherry with the complaint of painless swelling in the left lower jaw since 6 months. Patient’s history revealed that the swelling of the left mandible had increased gradually in size since its onset. The jaw swelling was slow growing, painless, without any discharge or paraesthesia. The patient’s medical history, drug history, and general physical examination were all non-significant.

On extra oral clinical examination, a diffuse, solitary swelling was evident on the left parasymphysis of mandible that was roughly oval measuring 2.5 cm x 1.5 cm, and the surface of the mucosa appeared smooth. The skin over the lesion appeared intact without any secondary changes. The swelling was bony hard and non-tender (Figure 1).
Intraoral examination showed a definite, bony swelling in the buccal vestibule of the left mandible, extended from the left lateral incisor up to the left first molar, measuring 2.0 cm x 1.5 cm in size (Figure 2).

The mucosal surface over the lesion appeared smooth and the mucosa surrounding the lesion was normal. On palpation, expansion of buccal cortex with an area of decortications was evident at lower left premolar. The jaw swelling was relatively hard except at the site of buccal decortication. Grade II mobility of the lower left premolar was evident.

The Orthopantomograph had shown a unilocular, well circumscribed radiolucency, measuring approximately 3.0 cm x 2.5 cm, extending from the mesial margin of the lower left canine up to the mesial root of the lower left first molar tooth (Figure 3). Computed tomography scan revealed buccal cortex expansion and decortication at the region of the lower left premolar on the buccal side (Figure 4 & 5).

**DIFFERENTIAL DIAGNOSIS**

The differential diagnosis included radicular cyst, ameloblastoma, odontogenic keratocyst, Pindborg tumour, and nonodontogenic lesions such as central giant cell granuloma, and central haemangioma, as well as central malignancy such as an osteosarcoma.
Schwannomas may involve a bone in three main mechanisms -
1. Schwannoma may originate centrally within a bone,
2. Schwannoma may originate within a nutrient canal, or
3. Soft tissue or periosteal lesion may cause secondary bony erosion and penetration into bone.

The case described in this article demonstrates an intraosseous schwannoma arising centrally within a bone.

Radiographic study revealed, schwannomas of the jaw bones are well-circumscribed, expansile unilocular radiolucency with a sclerotic thin border. Other radiographic findings such as resorption of root structures, cortical expansion, cortical thinning, and scalloping of peripheral bones can be seen. Additional radiographic imaging methods such as ultrasonography, computerized tomography scan, and magnetic resonance imaging have been advocated to find the extent of the lesion. The differential diagnosis of schwannomas, clinically as well as radiographically, should include periapical lesions, odontogenic cysts and tumours, non-odontogenic tumours, and pseudocysts. 

Microscopically, encapsulation of lesion is a typical feature of schwannomas.  The lesion consists of numerous spindle cell bundles in typical Antoni. An area (hypercellularity) and Antoni B area (hypocellularity) arranged in palisading pattern, interspersed in between with small hyaline structures called Verocay bodies. Immunohistochemical study of schwannomas exhibit positive staining for CD34, S - 100 protein and epithelial membrane antigen (EMA). S - 100 protein is immuno positive in all neurogenic tumours. Schwannomas may exhibit both a benign and a malignant variant. Malignant transformations of schwannomas are rare and still primary malignant form of schwannoma have been reported. 

The recommended treatment modality for central schwannomas is surgical excision/resection, with periodical follow ups. Surgical intervention has the highest efficacy since schwannomas proliferate slowly, they are contained in a well-defined capsule, and they are unresponsive to radiation and chemotherapy. The tumour invaded nerve structures can be sacrificed to avoid the recurrence. Complete excision of the
lesion with frequent follow up is essential to prevent recurrence of Schwannoma.

## CONCLUSION

We report a relatively rare case of primary intraosseous schwannoma of mental nerve mimicking periapical lesion. Schwannomas generally do not infiltrate the parent nerve. Treatment of choice for Schwannoma is complete surgical excision. Recurrence is unusual and malignant transformation is rare.

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