

CASE REPORT

Central schwannoma of mandible

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ABSTRACT

Intraoral schwannomas are uncommon and intraosseous ones are even rarer. The intrabony lesions account for less than 1% of the central neoplasms. According to the literature, there have been reports of 44 cases of intrabony neurilemmomas that occurred in either of the jaws. In this case report, we report a case of central schwannoma of the mandible in a 23-year-old female, who presented with a swelling involving the right body of the mandible. Radiographs revealed a well defined, unilocular radiolucency with bicortical expansion. Histopathology and immunohistochemistry confirmed the diagnosis of schwannoma arising from right inferior alveolar nerve. The lesion was treated by segmental resection and reconstructed with autogenous iliac bone graft.

Key words: Central neural tumor, neurilemmoma, neurinoma, schwannoma

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INTRODUCTION

Neurilemmoma, a benign neoplasm derived from Schwann cells was first described by Verocay in 1910. He called it "Neurinoma" then. In 1935, the term 'Neurilemmoma' was coined by Stout. The intrabony lesions account for less than 1% of the central neoplasms.

CASE REPORT

A 23-year-old female patient reported to the Department of Oral Medicine and Radiology, with a chief complaint of a swelling in the right side of the lower jaw, of six months duration. History revealed that the swelling had gradually increased in size since its onset. The swelling was not associated with pain, discharge or paraesthesia. The patient had noticed mobility of her lower right back teeth since 15 days.

On extra oral examination, a solitary, diffuse swelling was evident on the right mandibular body that was roughly oval; measuring 2.5 cm × 2 cm, and the surface appeared smooth. The skin was intact with no secondary changes. The swelling was nontender and hard.

Intraoral examination revealed a diffuse swelling in the mandibular right buccal vestibule, extending from the canine up to the first molar, measuring 2.5 × 1 cm in size. [Figure 1] The surface appeared smooth and the surrounding area normal. Lingual displacement of the first and second premolars was evident. On palpation, bicortical expansion was evident with an area of decortication at the region of the first molar on the buccal side. The swelling was hard except at the region of decortication. Grade II mobility of the premolars and first molar was evident. Aspiration of the lesion yielded scanty amount of frank blood.

The differential diagnosis for the lesion included odontogenic keratocyst, ameloblastoma, pindborg tumor, and nonodontogenic lesions such as central hemangioma, and central giant cell granuloma, as well as central malignancy such as an osteosarcoma.

Intra oral periapical radiograph showed a well-defined radiolucency extending from the distal margin of the first premolar root up to the mesial margin of the mesial root of first molar tooth, having a uniform internal density, with a sclerotic lining in the superior aspect. External root resorption and displacement of the first and second premolars and the first molar teeth was appreciated. Cross sectional occlusal radiograph showed bicortical expansion extending from the distal line angle of the canine up to the mesial aspect of the second molar tooth [Figure 2].

The panoramic radiograph showed a unilocular, well-



Figure 1: Swelling in the right buccal vestibule with displacement of second premolar



Figure 2: Cross-sectional occlusal radiograph showing bicortical expansion caused by the tumor

circumscribed radiolucency, measuring approximately 3.5×4 cm, extending from the distal margin of the canine up to the mesial margin of the mesial root of the second molar tooth [Figure 3].

The incisional biopsy specimen showed an unencapsulated lesion consisting of bundles of spindle cells in Antoni A and Antoni B zones arranged in a palisading pattern, interspersed with small hyaline structures, the Verocay bodies [Figure 4, Figure 5]. The histopathological diagnosis was that of a Schwannoma. Immunohistochemistry was performed with an S-100 marker, which showed diffuse positivity in the tumor cells [Figure 6], which further potentiated the diagnosis of Schwannoma.

Treatment encompassed segmental resection of the tumor, with reconstruction using autogenous iliac crest bone graft, under general anesthesia, at the Department of Oral and Maxillofacial Surgery [Figure 7]. The patient tolerated the procedure well. The excisional biopsy specimen was re-evaluated histopathologically, which confirmed the diagnosis. The final diagnosis was that of a central schwannoma arising from the right inferior alveolar nerve.

DISCUSSION

Neurilemmoma was first described by Verocay in 1910. He called it "Neurinoma" then. In 1935, the term 'Neurilemmoma' was coined by Stout^[1,2] Intraoral schwannomas are uncommon and intraosseous ones are even rarer. The intrabony lesions account for less than 1% of the central neoplasms.^[3,4]

According to the literature, there have been reports of 44 cases of intrabony neurilemmomas that occurred in either of the jaws.^[3] Neurilemmomas of the jaw occurred in the age range of 8–72 years, with the average age of 34 years, and there is a definite female predilection.^[3] The patient of the present case was a female aged 23 years. Amongst the jaws, the mandible is a favored site compared to the maxilla.^[3] Mandibular

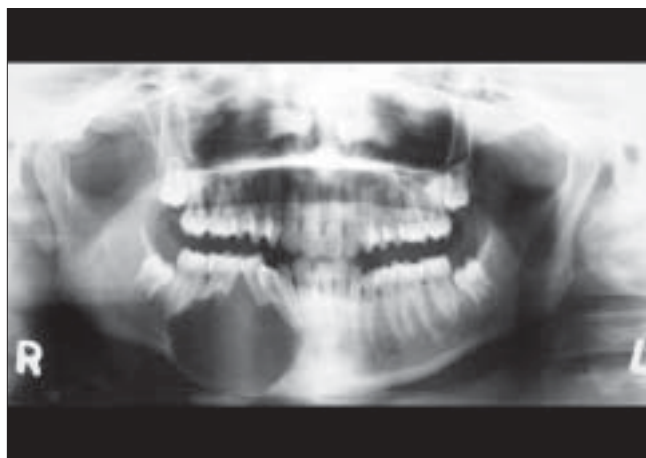


Figure 3: Cropped panoramic radiographic image showing the tumor extending from the right first premolar up to the second molar

schwannomas are mostly localized to the posterior body and the ascending ramus and can also involve the symphysis region.^[3]

Neurilemmomas are slow growing tumors. The most common clinical presentation is that of a swelling in the bone, followed by pain and paraesthesia.^[5] Pain may be present when the tumor encroaches upon the adjacent nerves and paraesthesia may originate with lesions originating from the inferior alveolar canal.^[6]

Radiographically, schwannomas of either jaw are well-demarcated, unilocular radiolucencies with a thin sclerotic border. Additional features such as external root resorption, cortical thinning, spotty calcification, cortical expansion, and peripheral scalloping can be evident.^[3] Additional imaging modalities such as ultrasonography, computerized tomography scan, and magnetic resonance imaging have been performed in the past.^[7] The differential diagnosis, clinically as well as radiographically, should include odontogenic cysts and tumors, pseudocysts, and nonodontogenic tumors.^[5]

Microscopically, schwannomas are typically characterized by encapsulation; nevertheless, unencapsulated cases have been reported. The tumor consists of bundles of spindle cells in typical Antoni A and Antoni B zones arranged in palisading pattern, interspersed with small hyaline structures called Verocay bodies.^[8,9] Immunohistochemically schwannomas show positive staining for S100, CD 34, and Epithelial membrane antigen (EMA), only in the capsule.^[2] Schwannomas exhibit both a benign and a malignant form. Malignant transformations of a benign lesion as well as primary malignant schwannoma have been reported.^[10,11]

The recommended treatment for central schwannomas is surgical excision/resection, with periodic follow ups. The involved nerve can be resected to prevent the chances of

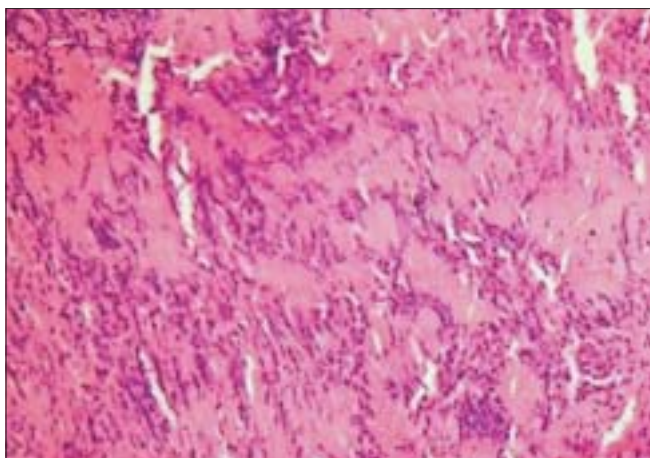


Figure 4: Photomicrograph showing the bundles of spindle cells in Antoni A and Antoni B zones, arranged in palisading pattern, interspersed with the verocay bodies (H and E, 10x)

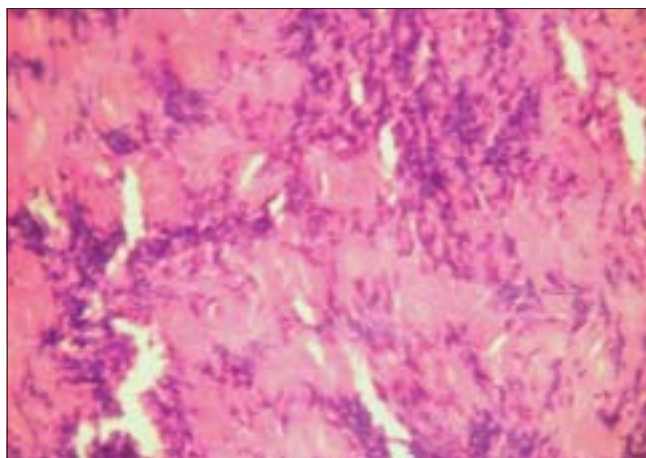


Figure 5: Photomicrograph, showing spindle cells with verocay bodies (H and E, 40x)

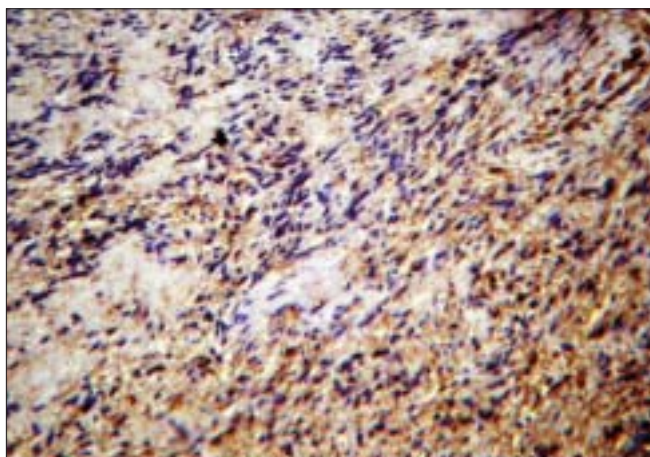


Figure 6: Immunohistochemistry with S-100 showing diffuse positivity in the tumor cells (S-100, 10x)



Figure 7: Tumor exposed surgically

recurrence.^[3]Incomplete resection of the tumor can attribute to recurrence of the lesion and frequent follow up is essential.^[3]

CONCLUSION

The clinical as well as radiographic features of central schwannomas closely mimic benign odontogenic cysts or tumors, which can easily be misleading to the diagnosticians. A comprehensive differential diagnosis for such a lesion should always include a neural tumor, although it is rare.

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