A Slow Growing Mass of Hard Palate: Schwannoma-Case Report

Keywords: Schwannomas; Neurilemmoma; Schwann cell; S-100; Hard palate; Intraoral approach

Abstract

Schwannomas or neurilemmomas are infrequent, benign, epineurium-encapsulated, slow-growing, solitary tumors of ectodermal origin derived from Schwann cells of the nerve sheath. They can arise from any cranial, peripheral, or autonomic nerve that contains Schwann cells. They present as slow growing painless swelling in the oral cavity or head and neck region. Approximately 25–45% of all schwannomas are seen head and neck region and 80% of which arises from vestibulocochlear nerve and found rarely in oral cavity, about 1%. We report a 36-year-old female complaining about a painless, slow-growing mass of the hard palate. It was excised intraorally and histopathologically diagnosed as Schwannoma.

Introduction

Schwannomas or neurilemmomas are infrequent, benign, epineurium-encapsulated, slow-growing, solitary tumors of ectodermal origin derived from Schwann cells of the nerve sheath [1]. The first description of this type of tumor was made by Verocay who named it as neuronoma in 1907 than in 1935, Stout called it as neurilemmoma [1,2]. They can arise from any cranial, peripheral, or autonomic nerve that contains Schwann cells. They present as slow growing painless swelling in the oral cavity or head and neck region and are rare encountered in clinical practice. Approximately 25–45% of all schwannomas are seen head and neck region and 80% of which arises from vestibulocochlear nerve and found rarely in oral cavity, about 1% [3-7]. Tongue, palate, buccalmucousa, lip, and gingiva are, in descending order, the most common sites for intraoral Schwannomas [8,9]. These tumors usually arise in 3rd and 4th decades but were also reported in early childhood [10-13]. They are equally distributed in males and females [14,15]. These submucosal lesions must be differentiated from other benign lesions that also appear in the same regions. Anti-S100 protein is the most widely used antibody for the identification of this neoplasm. Herein we report a 36-year-old female complaining about a painless, slow-growing mass of the hard palate. It was excised intraorally and histopathologically diagnosed as Schwannoma.

Case Report

A 36-year-old female presented to our clinic with a painless, slow-growing mass at right side of the hard palate for three years. There was no facial pain and numbness or epistaxis. She had undergone root canal therapy for teeth caries three years ago and the mass has emerged around the treated teeth. Physical exam showed pink, firm, painless, 3x5 cm in size, smooth mass at the right side of the hard palate (Figure 1). There was no tenderness or ulceration. Haematologic and biochemical findings were normal. T2-weighted sagittal maxillofacial magnetic resonance imaging (MRI) displayed homogen, hyperintense, 2x4 cm in size solid lesion of hard palate.

Figure 1: Pink, smooth mass without bone erosion at right side of hard palate.

Figure 2: Hyperintense mass on sagittal paranasal MRI (arrow).
with regular border (Figure 2). Axial maxillofacial non-enhanced computed tomography (CT) revealed a triangular-shaped, 3x5 cm in size mass which had soft-tissue density with regular border but without bone erosion at the right side of the hard palate (Figure 3).

Under general anesthesia the mass was completely excised via transoral route. Meticulous bleeding control was performed and then surgical area was allowed to heal by secondary intention. Postoperative period was uneventful.

Microscopically, it was an encapsulated tumour and there were Antoni A areas which are composed of areas of hypercellular spindled cells arranged in palisades, Antoni B areas that consist of edematous, myxoid-appearing stroma with few spindled cells and Verocay bodies that are central acellular eosinophilic around which Antoni A areas form a palisaded arrangement (Figure 4). Immunohistochemical staining was positive for S-100 protein and vimentin (Figures 5 and 6). In the light of these findings it was diagnosed as Schwannoma. There was no recurrence after a 18-month period follow up (Figure 7).

Discussion

Schwannomas or neurilemmomas are infrequent, benign, epineurium-encapsulated, slow-growing, solitary tumors of ectodermal origin, derived from Schwann cells of the nerve sheath and usually arise in 3rd and 4th decades but were also reported in early childhood [1,10-13]. Etiology of these tumours is still unknown [3]. They have genetic basis. They are equally distributed in males and females [14,15]. Tongue, palate, buccal mucousa, lip, and gingiva are, in descending order, the most common sites for intraoral Schwannomas [8,9].

Clinical differential diagnosis of intraoral Schwannoma includes...
fibroma, neurofibroma, lipoma, mucosele, granular cell tumour, traumatic fibroma, salivary gland tumours and malignant lesions such as squamous cell carcinomas and sarcomas [16]. Head and neck Schwannomas are usually manifested as a solitary, slow-growing, painless mass. They mainly occur in the peripheral nerves and also sometimes in the intraspinal and inner ear location where it is called acoustic schwannoma arising from the eighth cranial nerve. Since the optic and olfactory cranial nerves lack sheaths which contain schwann cells, they are not potential sites for schwannomas. Depending on the location of the tumor and its mass effect or nerve involvement, patients may have symptoms like pain, hoarseness, dysphagia, cranial nerve neuropathies, and even Horner syndrome [17]. Our patient did not suffer from neither of these symptoms but complained only of a painless and slow-growing mass.

MRI is usually the first choice of imaging modalities and these tumours appear as sharply circumscribed, fusiform, round, or oval masses. Schwannomas iso-intense to muscle on T1-weighted images and homogeneously hyperintense on T2-weighted images. Our patient had homogenous, hyperintense mass with regular border on T2-weigted MRI. CT usually reveals a sharply circumscribed, markedly enhancing, soft tissue mass without bone erosion. In terms of defining soft tissue tumors MRI is superior but CT provides better resolution of bone erosion. However, Schwannomas can erode bone by pressure, bony erosion is not a criterion for malignancy [18]. The present case had triangular-shaped mass with soft tissue density and no bone erosion.

Due to Schwannoma’s rarity and nonspecific clinical presentation, its diagnosis is carried out with histopathologic and immunohistochemical confirmation. It is an encapsulated tumour and there are Antoni Aareas which are composed of areas of hypercellular spindled cells arranged in palisades. Antoni B areas that consist of edematous, myxoid-appearing stroma with few spindled cells, they are not potential sites for schwannomas. Depending on the location of the tumor and its mass effect or nerve involvement, patients may have symptoms like pain, hoarseness, dysphagia, cranial nerve neuropathies, and even Horner syndrome [17]. Our patient did not suffer from neither of these symptoms but complained only of a painless and slow-growing mass.

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They are benign encapsulated tumors attached to the nerves where they arise in such a way that they can be easily removed without damaging the involved nerve but the other peripheral nerve sheath tumor, a non-capsulated tumor known as neurofibroma, has deeper connection to the involved nerve making it difficult to surgically remove [24]. Malign Schwannomas comprise 5% of all soft tissue sarcomas and 9-14% of them are seen in head and neck region [25]. Malign schwannomas are rarely seen and more often develop in association with von Recklinghausen’s disease [26].

Because of their benign nature, complete surgical excision which can range from simple excision under local anesthesia to a more extensive facial degloving approach with particular attention to preservation of the originating nerve, if encountered, is the treatment of choice [8]. Local recurrence has not been reported with complete surgical excision of intraoral schwannomas [27]. Endoscopic approach can be performed in properly selected cases. In the literature there are no reported cases of recurrence.

Conclusion
Schwannomas, slow-growing benign tumours with unknown etiology, are seen relatively rare in intraoral cavity, especially on palatal region. Clinical diagnosis of them is difficult so that histopathological diagnosis is needed. This submucosal lesion should be distinguished from other pathologies of oral cavity. It should be kept in mind that a slow-growing, well circumscribed, painless, nontender mass of hard palate can be a Schwannoma. Treatment is complete surgical excision and prognosis is well with no reported recurrence.

References

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