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Case Report

Schwannoma of the anterior maxillary vestibular submucosa: A case report

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ABSTRACT

Schwannomas (neurilemomas) are benign nerve sheath tumors that derive from proliferating Schwann cells. The most common intraoral site is the tongue, followed by the buccal or vestibular mucosa, palate, lip, and gingiva. Schwannomas are solitary, slow-growing, smooth-surfaced, encapsulated, and usually asymptomatic tumors. Their preoperative diagnosis is often difficult, and in the majority of cases, the diagnosis is confirmed by imaging studies and surgical excision with histological assessment. Here we report a rare case of schwannoma of the maxillary vestibular region with a predominantly Antoni A microscopic pattern in a 29-year-old male. The chief complaint was a painless, slow-growing swelling on the left anterior maxillary vestibular region. T2-weighted magnetic resonance imaging (MRI) revealed a mass with moderate-signal intensity in the periphery with a central area of high intensity with a clear smooth border, whereas the lesion appeared isointense to muscle on T1-weighted MRI. The patient was definitively diagnosed with schwannoma by histological evaluation of incisional biopsy material, and immunohistochemistry revealed that the tumor was diffusely positive for S-100. Thus, the tumor was excised, and the patient's prognosis was good. Precise knowledge of the clinical, radiological, and histological characteristics of schwannomas is critically important for its prompt diagnosis and treatment. To the best of our knowledge, we report a rare case of intraoral schwannoma of alveolar submucosa.

1. Introduction

Schwannomas, also referred to as neurilemmomas, are benign nerve sheath tumors that derive from proliferating Schwann cells that encapsulate nerve fibers to provide the myelin sheath [1–3]. Schwannomas are solitary, slow-growing, smooth-surfaced, encapsulated tumors that are usually asymptomatic [4,5]. Although they may arise at any age, the peak incidence is between the third and sixth decade. These tumors most commonly arise in the soft tissues of the head and neck; however, intraoral lesions are uncommon [6,7]. The most frequent site of schwannomas in the oral cavity is the tongue, followed by the palate, buccal or vestibular mucosa, lip, and gingiva [8]. Malignant transformation is rare [4]; therefore, complete excision of the tumor is associated with good prognosis and no recurrence. Microscopically, schwannomas typically show a biphasic pattern with areas of densely packed cellular spindle cells that are termed Antoni A and areas of hypocellular myxoid matrix with a high water content termed Antoni B [9]. Here

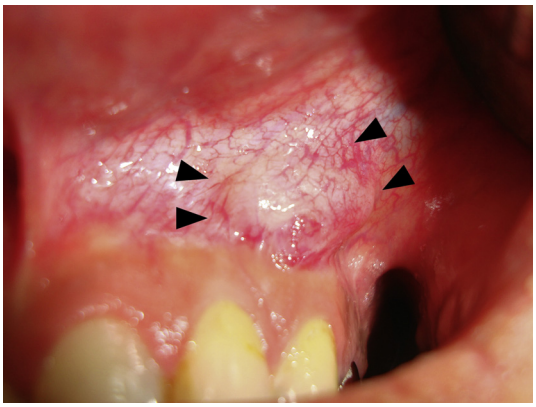

Fig. 1. Clinical oral examination revealed asymptomatic swelling in the anterior maxillary vestibular region (arrowhead).

Abbreviations: CT, computed tomography; MRI, magnetic resonance imaging.

☆ Asian AOMS: Asian Association of Oral and Maxillofacial Surgeons; ASOMP: Asian Society of Oral and Maxillofacial Pathology; JSOP: Japanese Society of Oral Pathology; JSOMS: Japanese Society of Oral and Maxillofacial Surgeons; JSOM: Japanese Society of Oral Medicine; JAMI: Japanese Academy of Maxillofacial Implants.

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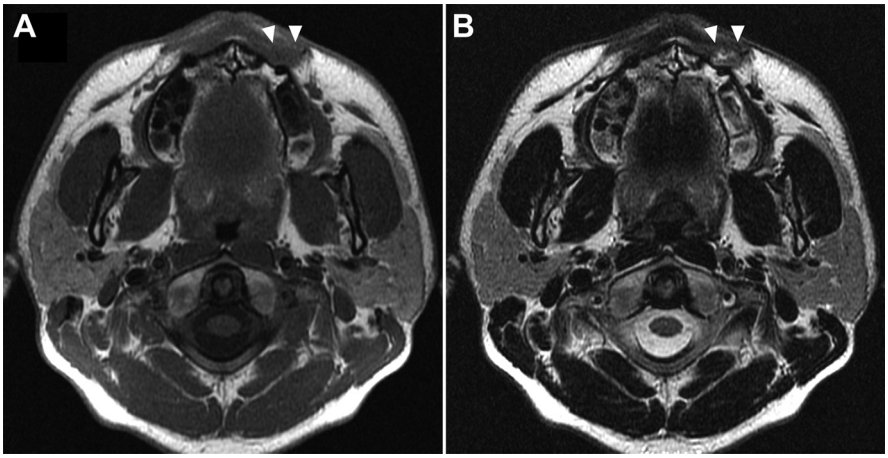

Fig. 2. Nonenhanced magnetic resonance imaging. (A) The tumor was isointense relative to muscle in the anterior maxillary region on axial T1-weighted image. (B) Axial T2-weighted image revealed a clear smooth border mass of moderate-signal intensity in the periphery with a high-signal intensity of central cystic lesion. The mass is indicated by arrowheads.

we report a rare case of vestibular submucosal schwannoma in a 29-year-old male patient whose chief complaint was a painless and slow-growing mass on the anterior maxillary vestibular region. Histological examination revealed that the tumor had a fascicular pattern with a predominant nuclear palisaded appearance (Antoni A).

2. Case report

A 29-year-old Japanese male presented with the complaint of swelling in the anterior maxillary alveolar region for 1 year. The lesion was stable in size and painless. On clinical examination, a left anterior maxillary vestibular submucosal mass measuring 1.5 cm in diameter that was covered with normal oral mucosa was observed. The relatively mobile lesion had a smooth surface and was nonulcerated and firm in consistency (Fig. 1). There was no complaint of oral paresthesia. The lymph nodes were nonpalpable, and the patient's medical history was not contributory. Orthopantomography and computed tomography (CT) did not reveal any significant findings related to the anterior maxillary teeth. T2-weighted magnetic resonance imaging (MRI) revealed a clear smooth border mass of moderate-signal intensity in the periphery with a central cystic lesion of high-signal intensity in the anterior maxillary vestibular region. On T1-weighted MRI, the mass appeared isointense to muscle (Fig. 2). There were no obvious abnormalities in the surrounding soft tissue. An incisional biopsy was performed under local anesthesia. Histological examination of the lesion was consistent with schwannoma, and immunohistochemistry determined that the tumor was diffusely positive for S-100 (Fig. 3). Based on the histological diagnosis, complete tumor excision was performed under general anesthesia. An associated nerve could not be identified. The tumor measuring 1.2 cm × 1.0 cm was attached to the mucobuccal fold and was grayish white in color with diffuse brown pigmentation on the cut surface (Fig. 4). Histological examination showed that the encapsulated solid tumor consisted predominantly of an Antoni A pattern. The postoperative phase was uneventful. There has been no evidence of recurrence at 4 years after surgery.

3. Discussion

Schwannomas are benign encapsulated nerve sheath tumors comprising Schwann cells [1,2], which commonly arise from the spinal nerve roots and intracranial nerves of the face, neck, extremities, mediastinum, and pelvis. Approximately 25% of all schwannomas are located in the head and neck, but only 1% originates in the oral cavity [8]. Wright and Jackson reported 146 cases of schwannoma of the oral cavity soft tissue. Of those, 52% occurred in the tongue, 19.9% in the buccal or vestibular mucosa, 8.9% in the soft palate, and the remaining 19.3% in the gingiva and lip [3]. Most commonly affected nerve is the vestibulocochlear nerve; the other affected sites in decreasing incidence are the brachial plexus and the trigeminal, glossopharyngeal, and vagus nerves [8,10]. However, as the lesion grows, the affected nerve is pushed aside and does not become enmeshed within the tumor. Thus, only 50% of schwannomas have a direct relation with a nerve [11].

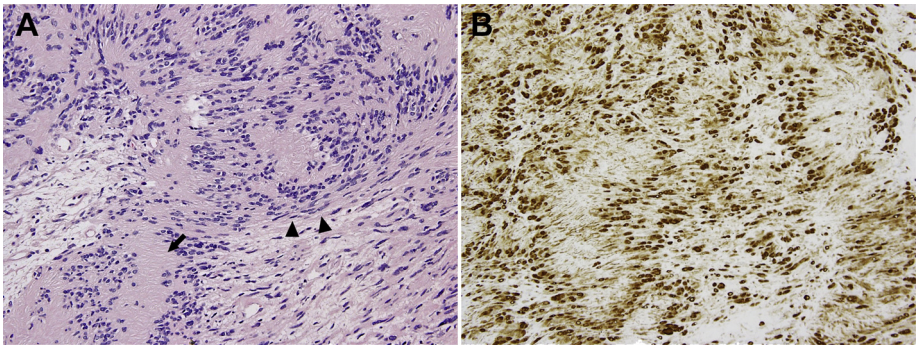

Fig. 3. (A) Histological examination showing palisaded nuclei (arrowhead) around acellular eosinophilic areas (arrow), also referred to as Verocay body (H&E 20×). (B) Tumor cells were diffusely immunoreactive for S100 protein (20×).

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