schwannoma from other benign soft tissue tumours.

**Conclusion**

This case report of schwannoma is rare because of its location on the tongue in a 12-year-old boy and it also emphasises on the utility of immunohistochemistry in differentiating schwannoma from other benign soft tissue tumours.

**Case Report**

We present a case of a 12-year-old boy who presented with a slowly growing mass on the dorsum of the tongue for the past 2 years. The patient had difficulty in phonation and mastication. On gross examination, a well-encapsulated mass of 1 × 1 cm with a greyish white, firm cut surface was found. On histological examination, the section was lined by stratified squamous epithelium. The underlying tissue consisted of tumour showing dimorphic pattern; one area was quite cellular comprised of spindle cells arranged in palisading fashion or at places having organised arrangement (Verocay bodies – Antoni A). The other areas were hypocellular, cells had lack of orientation, loosely arranged accompanied by thin strands of collagen (Antoni A–Antoni B). Further confirmation was done by immunohistochemistry with S-100 which showed diffuse and strong positivity.

Here we present a case of a 12-year-old boy who presented with a 2-year history of slow-growing, painless swelling on the dorsum of the tongue in the OPD of NIMS Hospital, Jaipur (Figure 1). He complained of disturbance in mastication and phonation although there was no pain or bleeding. There was no past medical history or similar history in the family. On examination, a non-tender mass of 1 cm × 1 cm was found on the dorsum of the tongue which was globular, mobile with a smooth surface and had well-demarcated margins (Figure 1). There was no neurological deficit and no neck nodes palpable. The clinical impression was of a benign tumour of the tongue. Therefore, initial biopsy and imaging studies were not performed and complete excision of the mass was done and sent for histopathological examination to the Department of Pathology, NIMS Medical College.

On gross examination, the tumour appeared well-encapsulated measuring 1 × 1 cm. Cut section was greyish white, firm in consistency. Sections were processed and the tissue was stained by haematoxylin and eosin stain. Microscopic examination showed a section lined by stratified squamous epithelium. The underlined section shows Verocay bodies (Antoni A) (Figure 1).

**Figure 1:** 10X low power view: section lined by squamous epithelium. The underlined section shows Verocay bodies - Antoni A.
squamous epithelium. The underlying tissue showed a spindle cell tumour with intermingled hypocellular and hypercellular areas. The tumour cells in hypercellular areas were arranged in palisading fashion or at places having organised arrangement (Verocay bodies–Antoni A (Figure 2)). The tumour cells in hypocellular areas had lack of orientation, loosely arranged accompanied by thin strands of collagen (Antoni B). Mitoses were extremely rare.

For further confirmation, immunohistochemistry with S-100 was done which expressed diffuse and strong immunoreactivity in the tumour cells (Figure 3).

Discussion

Schwannoma is a slow-growing benign tumour of the nerve sheath. It originates from the Schwann cell of the peripheral, autonomic and cranial nerve. It is usually a single, circumscribed, firm, painless lesion of variable size. Schwannoma usually occurs in adults and they can involve children but are not commonly seen in the younger age group. There is no gender preference. The disease is usually asymptomatic. The tongue is the most common location for intraoral schwannoma, followed by the palate and the oral mucosa. Tongue schwannoma shows no gender predilection and may be present at any age (especially in the third decade of life). Often appearing as a painless and slowly enlarging mass of the tongue, when schwannomas reach a certain size they may cause dysphagia, voice changes and breathing difficulties. In the tongue, two-thirds of cases involve the oral portion and about one-third involve the base.

The final diagnosis is always made after a definitive histological examination. It is histopathologically characterised by a mixture of two patterns of tissue growth, namely Antoni A and B types. The first is densely composed of elongated Schwann cells forming palisades. Type B has a myxoid, looser and disorganised arrangement. Between these cellular arrangements, there are Verocay bodies, which are acellular eosinophilic areas.

But nuclear palisading is not unique to schwannoma and can be seen in leiomyoma, leiomyosarcoma, gastrointestinal stromal tumour, calcifying aponeurotic fibroma and even in non-neoplastic smooth muscle. Still the absence of large multipolar fibroblasts, reticulin and a mucoid matrix distinguishes schwannoma from other histologic entities, such as meningioma, leiomyoma/leiomyosarcoma, palisaded myofibroblastoma and pleomorphic hyalinising angiectatic tumour of soft tissue with similar findings.

Immunohistochemical examination should allow distinguishing schwannomas from other nerve-originating tumours. Several members of the S-100 protein family, which are normally present in cells derived from the neural crest (Schwann cells, melanocytes and glial cells) are used as immunohistochemical markers for certain skin and nerve sheath tumours. S-100 proteins are currently the most sensitive marker for tumours with schwannian differentiation and the study of differential expression and distribution of certain S-100 subtypes may be a tool contributing to distinguish between benign and malignant peripheral nerve sheath tumours.

Schwannomas are managed by complete surgical excision, but wide excision is not recommended because schwannomas show few recurrences after surgery.

In this case, the patient was of a younger age group and complained of difficulty in phonation and mastication. Characteristic histopathological features of schwannoma presence of alternating patterns of Antoni A and B areas, nuclear palisading, whorling of cells and Verocay bodies were found. But due to rarity of the site and age, immunohistochemical confirmation was done which showed a strong and diffuse immunoreactivity to S-100 protein.

Conclusion

Although, benign schwannoma are relatively uncommon in the oral cavity and represent a pathology which is often not taken into account during clinical practice, it should still be kept in mind when making a diagnosis. They are most often diagnosed in adults but can also occur in children although not that often. Differential diagno-

Licensee OA Publishing London 2014. Creative Commons Attribution License (CC-BY)

sis in relation to malignant tumours and numerous benign neof ormations based on epithelial and connective tissues must always be considered. The final diagnosis is always made after a definitive histological examination but immunohistochemistry is always helpful in making diagnosis.

Consent

Written informed consent was obtained from the patient for publication of this case report and accompanying images. A copy of the written consent is available for review by the Editor-in-Chief of this journal.

References