Case Report

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Recurrent Gingival Schwannoma: A Case Report with Literature Review

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ABSTRACT

Background: Schwannoma is a benign, slow-growing tumour which arises from Schwann cells of the cranial, peripheral or autonomic nerves. The occurrence rate of schwannomas in the head and neck region is 25% to 40% while intraoral schwannomas are rare having a prevalence rate of 1%. The common sites of occurrence intraorally are tongue, palate, buccal mucosa, lips and gingiva respectively. This report presents a case of a 23-year-old male having a recurrent gingival overgrowth with advanced bone loss in the maxillary anterior teeth which recurred 6 months after initial excision. The diagnosis was made on the basis of a thorough history of the patient, clinical examination, histopathological findings and immunohistochemical examination. The case was treated by complete surgical excision of gingival overgrowth and extraction of adjacent teeth due to advanced loss of alveolar bone.

Keywords: Benign tumour, Schwann cells, Gingival overgrowth, Excision.

INTRODUCTION

Schwannoma is a solitary, encapsulated nodular, slow-growing tumour which arises from Schwann cells of the cranial, peripheral or autonomic nerves. It is also known as neurilemmoma, neurinoma and perineural fibroblastoma which was first described by Verocay in 1908.[1] The aetiology of the lesion is not known. It was hypothesized that it might arise by the proliferation of Schwann cells within the perineurium. Over a period of time, the entire peripheral nervous system gets affected. It will further lead to displacement and compression of surrounding healthy nerve tissue. The lesion is usually asymptomatic. Occasionally, pain and paresthesia may be present.[2]

The occurrence rate of schwannomas in the head and neck region is 25% to 40% while intraoral schwannomas are rare, having a prevalence rate of 1%. The common sites of occurrence intraorally are tongue, palate, buccal mucosa, lips and gingiva respectively. It is most commonly seen in the second and third decades of life with no preference for gender.[1,2] This report presents a case of gingival overgrowth with advanced loss of alveolar bone in the maxillary anterior teeth which recurred 6 months after initial excision. The diagnosis was made on the basis of a thorough history of the patient, clinical examination and histopathological findings.

CASE REPORT

A 23-year-old male patient visited the Department of Periodontics with a chief complaint of swollen gum on the right maxillary anterior region since 4-5 months (Fig. 1, 2). He had undergone surgical excision of the same lesion one year ago at a private dental clinic.

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Patient was systemically healthy but oral hygiene status of the patient was found to be poor. Intraoral

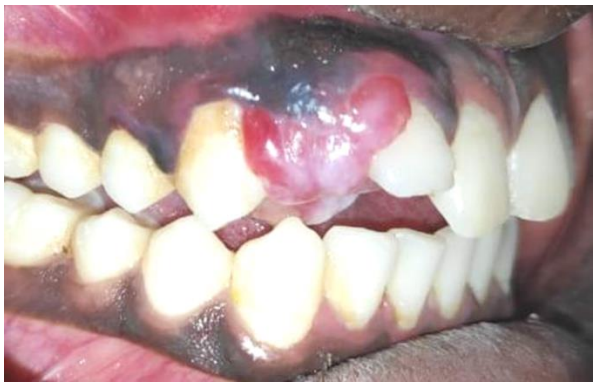

Fig 1: Pre-operative (Labial View).

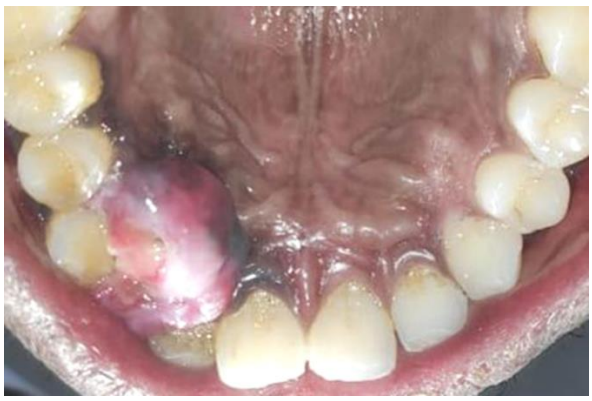

Fig 2: Pre-operative (Palatal View).

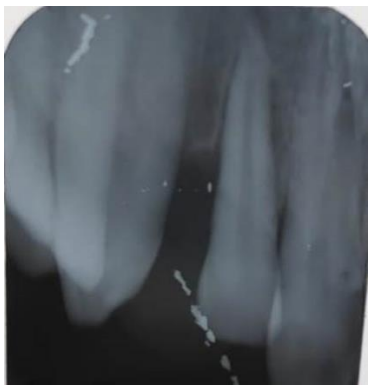

Fig 3: Intraoral Periapical Radiograph i.r.t. 12,13 showing a horizontal bone loss.

examination revealed a small, sessile, gingival mass of approximately 1.5×3.5 cm in size which was irregular in shape arising from interdental papilla in between 12 and 13. It was also extended on palatal aspect towards the midline. The surface mucosa was smooth, bright pink in colour intermixed with some pale areas. The lesion had well-defined margins with no evidence of any secondary changes. It was non-tender on palpation and firm in consistency. The regional lymph nodes were not palpable. The provisional diagnosis was made of ossifying fibroma. The differential diagnosis was made of irritational fibroma, pyogenic granuloma, neurofibroma, giant cell granuloma, neurilemmoma.

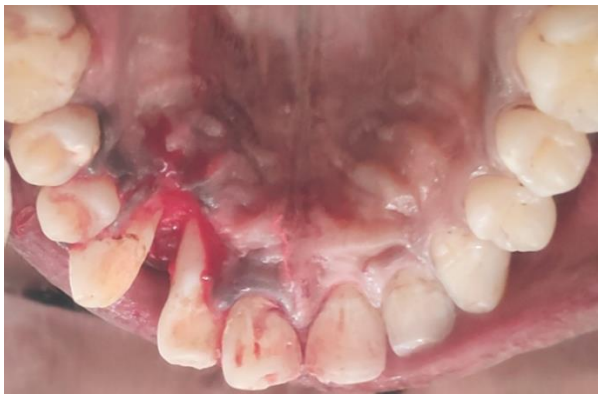

Fig 4: Post-operative (Palatal View).

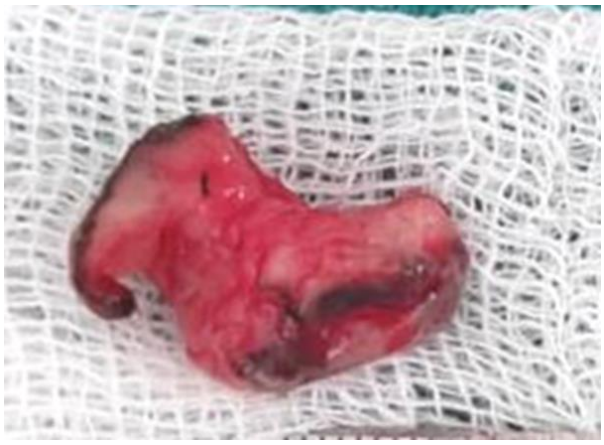

Fig 5: Excised Tissue Specimen.

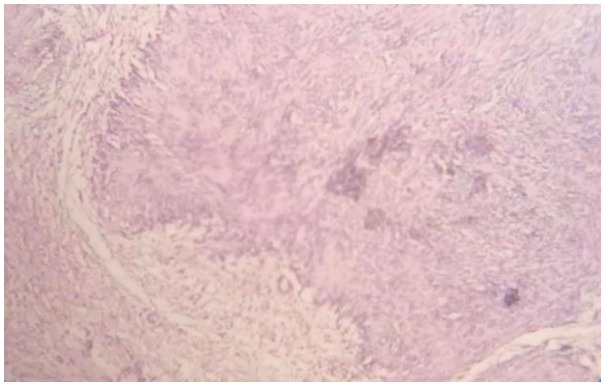

Fig 6: Histopathological finding showing presence of Antoni A & Antoni B areas (H & E, x100).

Intraoral periapical (IOPA) radiograph showed a horizontal bone loss in between 12, 13 up till

middle one-third of the radicular portion (Fig. 3). Complete hemogram, blood glucose level estimation, bleeding and clotting time test were advised. The values were within the normal limits.

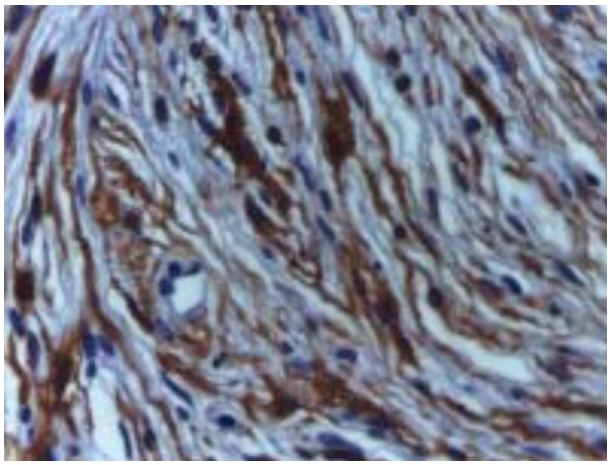

Fig 7: Immunohistochemical finding showing positive S100 protein.

Full mouth scaling was done, and oral hygiene instructions were given. The surgical excision of the lesion was planned 2 weeks after consideration of oral hygiene status. The written consent of the patient was taken prior to the surgical procedure. The area to be treated was anesthetized with Lignocaine hydrochloride with Adrenaline 1:80000 concentration. The incision was given around the periphery of the lesion with a scalpel as the lesion was sessile. The lesion was separated from the underlying bone. The lesion was excised completely along with underlying periosteum (Fig. 4). The case was treated further by extraction of adjacent teeth (12,13) due to advanced loss of alveolar bone. The hemostasis was achieved with the help of pressure pack.

Post-operative instructions were given to the patient and were prescribed with an analgesic. (Tab. Aceclofenac 100 mg, twice a day for 3 days) and antimicrobial rinse (0.2% chlorhexidine gluconate twice a day for 1 week). The excised tissue was placed in 10% neutral buffered formalin and sent to Oral Pathologist for histopathological examination (Fig. 5). The patient was recalled after 2 weeks for a re-evaluation of the healing site. The healing of the surgical site found to be satisfactory. The patient was educated and motivated to maintain good oral health care.

Histopathological findings showed the presence of characteristic Antoni A and Antoni B areas unifying gradually. Antoni A areas had short bundles or interlacing fascicles of compact spindle cells which showed wavy nuclei with indistinct cytoplasmic borders. Antoni B areas had few spindles or oval cells arranged randomly in the matrix. Verocay bodies were separated by homogeneous eosinophilic areas. Mild inflammatory cell infiltrate was evident (Fig. 6). An immunohistochemical examination of tumoral cells revealed positive results with S100 antigen (Fig. 7).

Based on the clinical examination, histopathological and immunohistochemical aspects, the final diagnosis was made of schwannoma. The clinical condition of the patient is under control with no signs of recurrence even after one year.

DISCUSSION

Oral schwannoma is a solitary, neural tumour that can present itself at any age. According to Hatziotis and Takeda, it is more common between the second and third decades of life.[3,4] According to the studies done by William et al., males showed higher predilection while Lucas et al. showed a greater predilection of females for schwannomas.[5,6] Hatziotis and Enzinger showed equal distribution between both sexes for schwannomas.[3,7]

Wright and Jackson studied 146 cases, and Gallo et al. studied 157 cases of schwannoma of the oral cavity where 52% involved tongue, 19.86% buccal or vestibular mucosa, 8.9% the soft palate, 19.24% were in lip and gingiva while 45.2% of cases involved tongue and 13.3% involved cheek respectively.[8,9] Oral schwannomas are mostly confined to soft tissues and mostly remains asymptomatic. In such cases, it should be differentiated from benign lesions such as mucocele, fibromas, lipomas and benign salivary gland tumours based on its location. If the tumour is intraosseous (mostly in cases of mandible) might lead to bone expansion, pain and paresthesia. In such cases, it should be differentiated from the cyst, bony tumours and odontogenic tumours .[2]

Based on histopathology, schwannoma is divided into five types: common, plexiform, cellular, epithelioid and ancient schwannomas.[10] To get an accurate diagnosis of schwannomas,

histopathological examinations and immunohistochemical analysis are necessary requirements. In the present case, histopathological examination revealed a thin fibrous capsule and a tumoral proliferation formed by two types of tissue arrangements: Antoni type A and type B. The findings are similar to those reported previously in the literature. Some of the tumoral Schwann cells are non organized leading to the formation of the Verocay bodies.[2] The studies were done by Chrysomaly et al. and Passador-Santos et al. found that immunostaining analysis is crucial for diagnosis and differentiation of neoplastic lesions. All neural origin tumours show positivity for S100 protein.[11,12] In the present case, classical structures of this lesion were showing intensively positive immunohistochemical results for S100 protein.

In cases of schwannoma, it is essential to search for nerve tumours in other parts of the body. Though in most cases, nothing may be found. An apparently solitary neurofibroma may be a symptom of neurofibromatosis; schwannoma must be differentiated from neurofibroma. Both schwannoma and neurofibroma microscopically show elongated cells with irregular nuclei present between collagen fiber bundles. The differentiation between them is done on the basis of histopathologic examination. The schwannoma is derived from the Schwann cells and the neurofibroma from the fibroblasts of the perineurium. Neurofibroma is unencapsulated, consisting of a mixture of schwann cells, perineurial cells and endoneurial fibroblasts.[2]

Asami et al. found that ultrasonography, CT scan and MRI may also be helpful in diagnosis and treatment planning of schwannoma. It is required for the estimation of tumour margins, lesion composition and determination of whether there is infiltration to surrounding structures or not.[13] In the present case, histopathological and immunohistochemical findings diagnosed it as a benign form of schwannoma which excludes the need for expensive diagnostic procedures.

The therapeutical conduct is total excision of the lesion, if not leads to recurrence. In the present case, the patient is not showing periodicity even after the follow-up of one year.

CONCLUSION

Schwannoma is one of the rare disease entities seen in clinical practice. It must be differentiated from another benign lesion of the same area. There are scarce chances of malignant transformations. The successful outcome of surgical approach will be achieved through the complete removal of the lesion with underlying periosteum.

CONFLICTS OF INTEREST

The authors declare they have no potential conflict of interests regarding this article.

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