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## Correspondence

# Palisaded encapsulated neuroma of the upper labial mucosa: Case report

**KEYWORDS**

Palisaded encapsulated neuroma;  
Upper lip;  
S-100 protein

Palisaded encapsulated neuroma (PEN) is a relatively rare benign tumor of Schwann cell origin. It shows a predilection for the face (approximately 90% of reported cases) with the nose and cheek being the most common specific sites.<sup>1</sup> Here, we reported a case of PEN at the middle portion of the upper labial mucosa of a 23-year-old female patient.

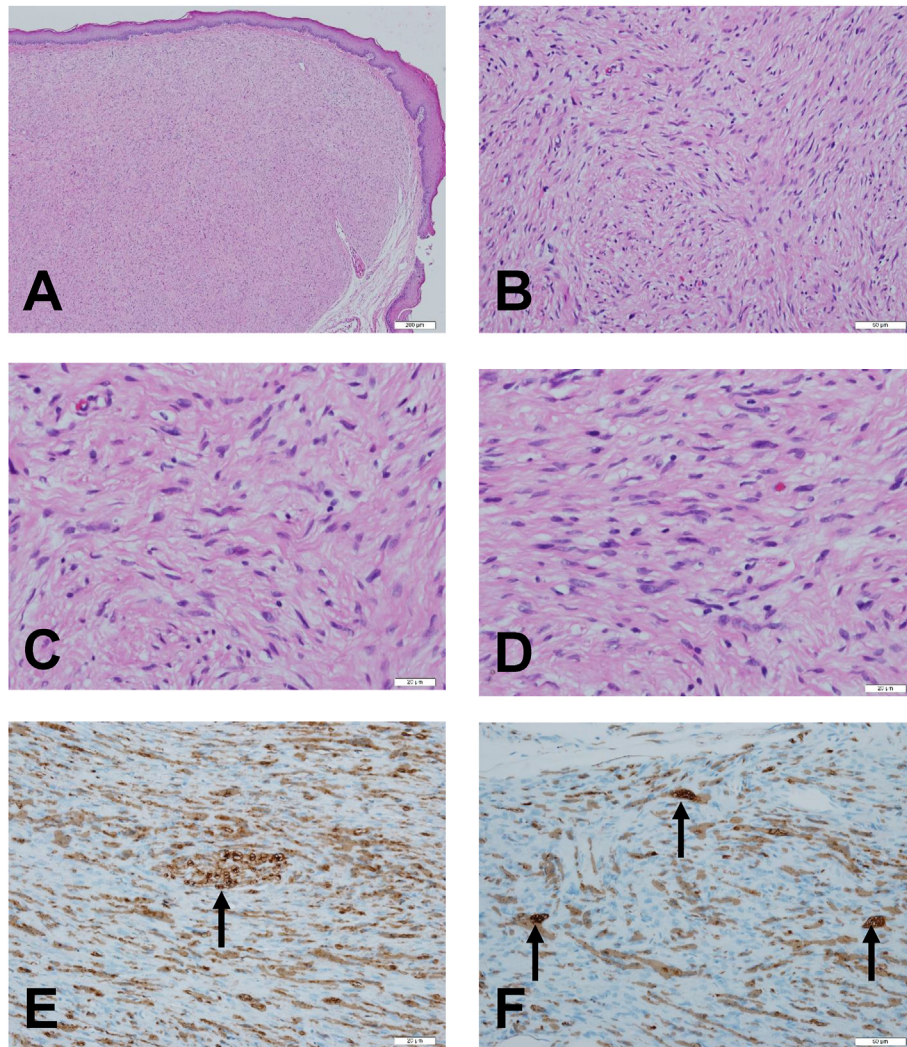
This 23-year-old female patient came to our dental clinic for evaluation and treatment of a nodule at the middle portion of the upper labial mucosa for several weeks. The nodule was painless and elastic. It measured approximately 1.0 cm in greatest dimension in the subepithelial area of the upper labial mucosa. The mucosal surface was smooth and intact. The clinical diagnosis was a fibroma. Because the mass seemed to be a benign lesion, after discussing with the patient and obtaining the signed informed consent, the fibroma-like nodule was totally excised under local anesthesia. The removed soft tissue specimen was sent for histopathological examination. Microscopically, the tumor was well-defined, moderately to highly cellular, and located at the subepithelial area. It was covered by parakeratinized stratified squamous epithelium (Fig. 1A). The tumor was composed of a sheet of spindle cells with wavy and pointed nuclei but without significant pleomorphism or mitotic activity (Fig. 1B, C and D).

Immunostain revealed that the spindle-shaped tumor cells were diffusely positive for S-100 protein, suggesting that the tumor cells are Schwann cells. A few small axons were found within the tumor and these small axons were discovered easily especially in the anti-S-100 protein immunostained tissue section (Fig. 1E and F). The above-mentioned characteristic findings finally confirmed the histopathological diagnosis of a PEN.<sup>1</sup>

The diagnosis of the PEN depends on the examination of both hematoxylin and eosin-stained and immunostained tissue sections, which is similar to the diagnosis of other specific benign and malignant oral tumors.<sup>2–5</sup> The differential diagnoses of PEN include Schwannoma and neurofibroma. Both PEN and Schwannoma are of Schwann cell origin and their tumor cells demonstrate a diffuse, positive immunohistochemical reaction for S-100 protein. However, small axons are found in PEN but not in Schwannoma and typical Antoni A tissue with Verocay bodies are discovered in Schwannoma but not in PEN. The neurofibroma arises from a mixture of both Schwann cells and perineural fibroblasts and more collagen bundles are noted in neurofibroma than in both PEN and Schwannoma. Sparsely distributed small axons are often found within the neurofibroma. However, the tumor cells of neurofibroma show a scattered, positive reaction for S-100 protein, in contrast to the diffuse, positive reaction for S-100 protein for both PEN and Schwannoma. In addition, both Schwannoma and neurofibroma are considered to be true neural neoplasm, but the PEN is thought to be a reactive lesion rather than a true neural neoplasm, and trauma is suggested to play an etiologic role of the PEN. The PEN is best treated by conservative local surgical excision, and recurrence is rare. Furthermore, the PEN is not associated with neurofibromatosis or multiple endocrine neoplasia type 2B.<sup>1</sup>

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**Figure 1** Histopathological and immunostained microphotographs of our case of palisaded encapsulated neuroma. (A) Low-power microphotograph exhibiting that the tumor was well-defined, moderately to highly cellular, located at the subepithelial area, and covered by parakeratinized stratified squamous epithelium (Hematoxylin and eosin stain or H&E; original magnification, 4 ×). (B, C and D) Medium- and high-power microphotographs demonstrating that the tumor was composed of a sheet of spindle cells with wavy and pointed nuclei but without significant pleomorphism or mitotic activity (H&E; original magnification; B, 20 × ; C, 40 × ; D, 40 ×). (E and F) Immunostained microphotograph showing that the spindle-shaped tumor cells were diffusely positive for S-100 protein and a few small axons (pointed by black arrows) were found within the tumor (Immunostain; original magnification, E, 40 × , F, 20 ×).

### Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

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