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Giant cell fibroma on the dorsal tongue

KEYWORDS
Giant cell fibroma;
Stellate fibroblast;
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Tongue

Oral giant cell fibroma (GCF) is a benign fibrous tumor characterized by the presence of stellate and mononuclear or multinucleated giant fibroblasts in the subepithelial fibrous connective tissue.[1–5] This article presented a case of GCF on the middle part of the dorsal tongue of a 27-year-old female patients.

This 27-year-old female patients found a small papule on the middle part of the dorsal tongue for one month. The small tumor was pedunculated, pink and firm measuring 0.3 × 0.3 × 0.2 cm in size. The clinical diagnosis was a fibroma. Because the benign nature of the tumor, after discussing with the patient and obtaining the signed informed consent, the papular lesion was totally excised under local anesthesia. The removed soft tissue specimen was sent for histopathological examination. Microscopically, it showed a fibrous tumor composed mainly of dense and hyalinized coarse collagen bundles covered by hyperparakeratotic or hyperorthokeratotic stratified squamous epithelium with saw-toothed rete ridges (Fig. 1A and B). High-power views demonstrated the mononuclear or binuclear stellate giant fibroblasts dispersed in the non-inflamed subepithelial fibrous connective tissues (Fig. 1C, D, E, and F). The aforementioned characteristic microscopic findings of the small fibrous tumor finally confirmed the histopathological diagnosis of a GCF. The papular lesion did not recur 6 months after the surgical excision.

Oral GCF can be identified by the characteristic microscopic feature of the presence of stellate giant cells with one or two nuclei in the subepithelial fibrous connective tissue. Multinucleated giant cells with three or more nuclei are seen rarely.[1–5] Immunohistochemical stains show that the giant cells are positive for vimentin and negative for cytokeratin, S-100 protein, neurofilament, and leukocyte common antigen, indicating these stellate giant cells in oral GCFs are of mesenchymal or fibroblastic origin instead of epithelial, neurogenic, or hematogenous origin.[1] In addition, Datar et al.[2] studied the staining properties of collagen fibers in the subepithelial connective tissue of 7 cases each of GCF and fibroma using the picrosirius red stain and the polarizing microscopy as well as the van Gieson stain and the bright field microscopy. They found that the colors of collagen fibers in fibroma are yellow, yellowish-orange and green, while those in GCFs are predominantly yellow and orange by the picrosirus red polarizing microscopy. Moreover, the collagen fibers in fibroma are loosely packed and arranged parallel to the epithelium, but those in GCFs are densely packed and arranged perpendicular to the epithelium by van Gieson bright field microscopy, indicating that the collagen fibers in GCFs are more mature and dense than those in fibromas.

Oral GCFs can occur in patients of any ages. The mean age of the 28 Taiwanese patients with GCF is 30.4 years and approximately 78.6% of the lesions occur in the patients with the ages between 11 and 50 years with the highest incidence being in the third decade (7 patients).[3–5] The oral GCFs are discovered more commonly on the gingiva and

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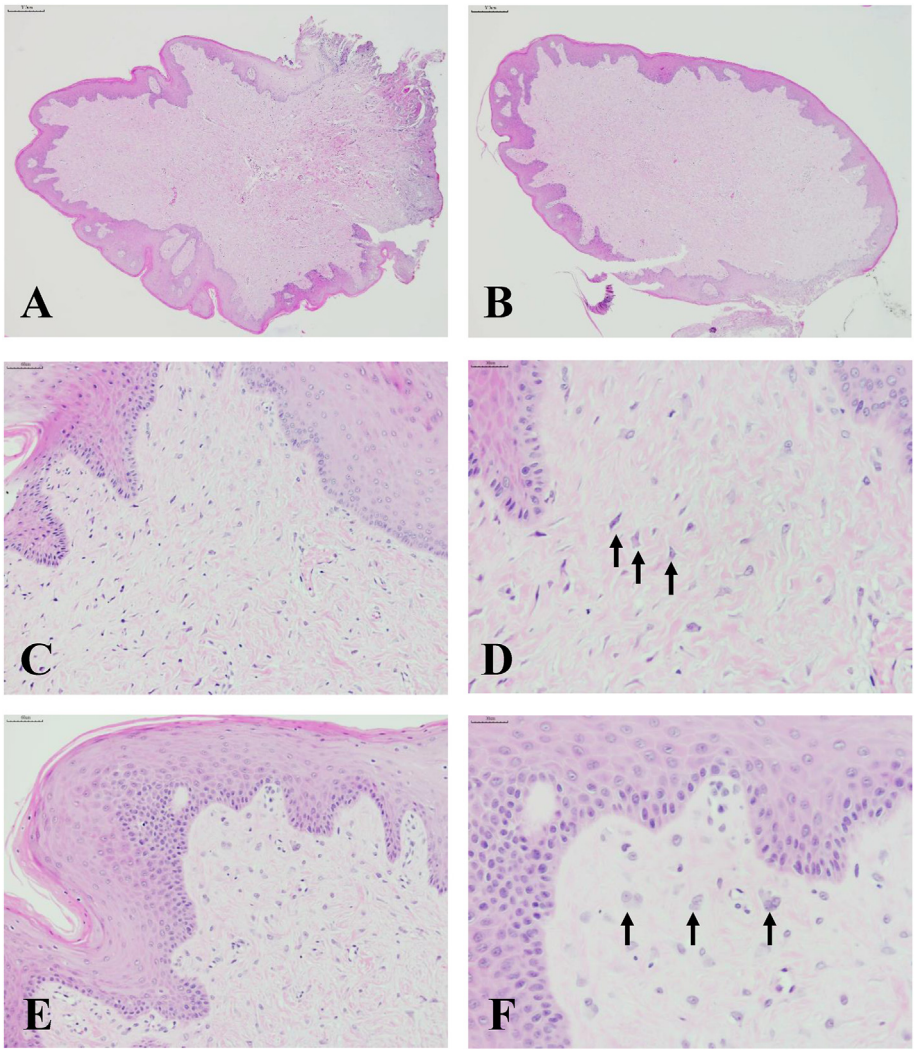

Figure 1 Histopathological photomicrographs of our case of oral giant cell fibroma (GCF) on the middle part of the dorsal tongue. (A and B) Low-power photomicrographs showing a fibrous tumor composed mainly of dense and hyalinized coarse collagen bundles covered by hyperparakeratotic or hyperorthokeratotic stratified squamous epithelium with saw-toothed rete ridges. (C, D, E and F) High-power photomicrographs exhibiting mononuclear (D, pointed by the three black arrows) or binuclear stellate giant fibroblasts (F, pointed by the three black arrows) dispersed in the non-inflamed subepithelial fibrous connective tissues (Hematoxylin and eosin stain; original magnification; A and B, 4×; C and E, 20×; D and F, 40×).

mandibular retromolar region (11 cases in total) and the tongue (8 cases).[3–5] This site predilection of our 28 GCFs was similar to that of 103 GCFs reported by Magnusson and Rasmusson[1] with 55 GCFs being on the gingiva and 24 GCFs being on the tongue. Our reported 28 oral GCFs are all equal to or smaller than one cm in diameter.[3–5] All these 28 oral GCFs are treated by surgical excision without the subsequent recurrence.[3–5]

Declaration of competing interest

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

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None.

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Andy Sun[†]
Department of Dentistry, National Taiwan University Hospital, College of Medicine, National Taiwan University, Taipei, Taiwan

Yi-Pang Lee[†]
Department of Dentistry, Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Hualien, Taiwan

Ying-Tai Jin[**]
Department of Pathology, Taiwan Adventist Hospital, Taipei, Taiwan
Department of Pathology, National Cheng Kung University Hospital, Tainan, Taiwan

Chun-Pin Chiang[*]
Department of Dentistry, National Taiwan University Hospital, College of Medicine, National Taiwan University, Taipei, Taiwan
Department of Dentistry, Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Hualien, Taiwan
Graduate Institute of Oral Biology, School of Dentistry, National Taiwan University, Taipei, Taiwan

**Corresponding author. Department of Pathology, Taiwan Adventist Hospital, No. 424, Section 2, Bade Road, Taipei 10556, Taiwan.
E-mail address: yingtaijin@gmail.com (Y.-T. Jin)

*Corresponding author. Department of Dentistry, Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, No. 707, Section 3, Chung-Yang Road, Hualien 970, Taiwan.
E-mail address: cpchiang@ntu.edu.tw (C.-P. Chiang)

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[†] These two authors have equal contribution to this study.