

Available online at [www.sciencedirect.com](http://www.sciencedirect.com)

ScienceDirect

journal homepage: [www.e-jds.com](http://www.e-jds.com)

## Correspondence

# Verruciform xanthoma on the anterior maxillary gingiva

## KEYWORDS

Verruciform xanthoma;  
Gingiva;  
Macrophage;  
Xanthoma cell

Verruciform xanthoma is a benign lesion that is most frequently found on the gingiva.<sup>1</sup> In this report, we presented a case of verruciform xanthoma with a pink papillary surface on the labial gingiva of teeth 22 and 23 area in a 16-year-old female patient.

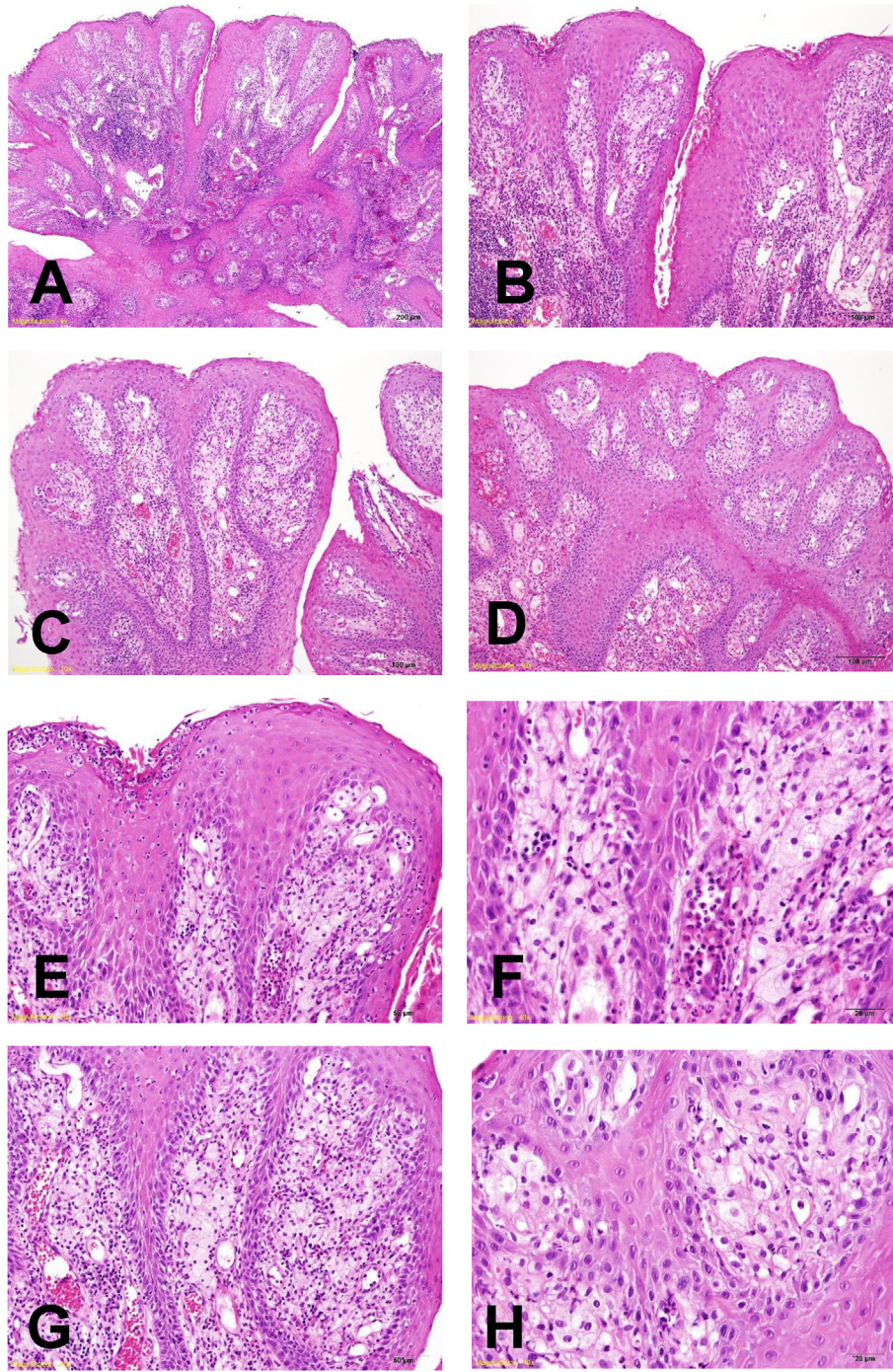
This 16-year-old female patient came to the dental department of our hospital for treatment of a pink papillary mass on the maxillary anterior gingiva for more than 2 months. Oral examination revealed an elevated hyperplastic lesion with a pink papillary surface measuring approximately 1.0 cm in greatest dimension on the labial gingiva of teeth 22 and 23 region. The mass was asymptomatic, but the patient found the rapid growth of the lesion recently. This brought the patient to the dental department of our hospital for further treatment. Although the mass looked like a verrucous hyperplasia lesion, the patient did not have risk factors such as cigarette smoking, betel quid chewing, and alcohol drinking oral habits. After discussing with the patient and obtaining the signed informed consent, the gingival mass was totally removed under local anesthesia. The excised soft tissue specimen was sent for histopathological examination. Microscopically, it showed a verrucous hyperplasia-like lesion composed of the hyperplastic stratified squamous epithelium with parakeratosis and a papillary surface. The parakeratin plugs were discovered between the two papillary epithelial projections. There were dilated capillaries and a severe lymphoplasmic cell infiltrate in the connective tissue papillae (Fig. 1A, B, C and D). After careful microscopic examination, a few lipid-laden foamy macrophages (foam

cells or xanthoma cells) could be seen in the connective tissue papillae between two epithelial rete ridges (Fig. 1E, F, G and H), although the xanthoma cells were not observed in every connective tissue papilla. The above-mentioned characteristic findings confirmed the histopathological diagnosis of a gingival verruciform xanthoma.<sup>1–5</sup>

Belknap et al.<sup>1</sup> reported a large series of 212 cases of oral verruciform xanthoma, and in which the age of the patients was known in 210 patients. The mean age of the patients was 61 years old, with an age range of 9–94 years. Only 7 (3.3%) of 210 patients are under 20 years of age, suggesting the oral verruciform xanthoma rarely found in young patients under 20 years of age. In the present oral verruciform xanthoma case, although the lesion was covered by parakeratotic stratified squamous epithelium, it was pink in color. This could be due to the presence of many dilated capillaries in the severely inflamed connective tissue papillae. The clinical impression of our case was a verrucous hyperplasia lesion which was an oral potentially malignant disorder related to risk oral habits in Taiwan.<sup>2</sup> However, our young female patient did not have cigarette smoking, betel quid chewing, and alcohol drinking oral habits. Therefore, we did not know the actual etiology of this oral verruciform xanthoma in our patient. Belknap et al.<sup>1</sup> reported that the most common location of oral verruciform xanthoma in a descending order is the gingiva (51.2%), followed by the palate (19.3%), buccal mucosa (8.5%), tongue (9.4%), vestibule (6.1%), lip (1.9%), floor of mouth (1.4%), and unspecified oral location (0.5%). This finding reminds us that the papillary lesion of the

<https://doi.org/10.1016/j.jds.2023.09.002>

1991-7902/© 2023 Association for Dental Sciences of the Republic of China. Publishing services by Elsevier B.V. This is an open access article under the CC BY-NC-ND license (<http://creativecommons.org/licenses/by-nc-nd/4.0/>).



**Figure 1** Histopathological photomicrographs of our case of gingival verruciform xanthoma. (A, B, C and D) Low- and medium-power photomicrographs showing a verrucous hyperplasia-like lesion composed of the hyperplastic stratified squamous epithelium with parakeratosis and a papillary surface. The parakeratin plugs were discovered between the two papillary epithelial projections. There were dilated capillaries and a severe lymphoplasmic cell infiltrate in the connective tissue papillae. (E, F, G and H) High-power photomicrographs exhibiting a few lipid-laden foamy macrophages (foam cells or xanthoma cells) in the connective tissue papillae between two epithelial rete ridges. (Hematoxylin and eosin stain; original magnification; A, 4 $\times$ ; B, C and D, 10 $\times$ ; E and G, 20 $\times$ ; F and H, 40 $\times$ ).

gingiva in our young female patient may be a gingival verruciform xanthoma. We have also reported a verruciform xanthoma on the right posterior ventral surface of the tongue in a 69-year-old female patient, a verruciform

xanthoma on the buccal gingiva between teeth 26 and 27 in a 65-year-old male patient, and a verruciform xanthoma on the buccal gingiva of tooth 16 in a 30-year-old male patient.<sup>3–5</sup>

## Declaration of competing interest

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

## Acknowledgments

This study was supported by the grant NSTC 110-2314-B-006-059 from National Science and Technology Council, Taiwan, and the grant MOST 111-2314-B-006-037-MY2 from Ministry of Science and Technology, Taiwan.

## References

1. Belknap AN, Islam MN, Bhattacharyya I, Cohen DM, Fitzpatrick SG. Oral verruciform xanthoma: a series of 212 cases and review of the literature. *Head Neck Pathol* 2020;14:742–8.
2. Warnakulasuriya S, Kujan O, Aguirre-Urizar JM, et al. Oral potentially malignant disorders: a consensus report from an international seminar on nomenclature and classification, convened by the WHO Collaborating Centre for Oral Cancer. *Oral Dis* 2021;27:1862–80.
3. Lang MJ, Chang JYF, Jin YT, Chiang CP. Verruciform xanthoma of the tongue. *J Dent Sci* 2022;17:1063–4.
4. Hwang MJ, Chang JYF, Chiang CP, Jin YT. Oral verruciform xanthoma: case report. *J Dent Sci* 2023;18:936–8.
5. Hwang MJ, Chang JYF, Jin YT, Chiang CP. Verruciform xanthoma on the maxillary gingiva. *J Dent Sci* 2024;19:663–5.

Yu-Hsueh Wu  
Department of Stomatology, National Cheng Kung University Hospital, College of Medicine, National Cheng Kung University, Tainan, Taiwan  
Institute of Oral Medicine, School of Dentistry, National Cheng Kung University, Tainan, Taiwan

Julia Yu-Fong Chang  
Department of Dentistry, National Taiwan University Hospital, College of Medicine, National Taiwan University, Taipei, Taiwan  
Graduate Institute of Oral Biology, School of Dentistry, National Taiwan University, Taipei, 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  
Graduate Institute of Oral Biology, School of Dentistry, National Taiwan University, Taipei, Taiwan  
Department of Dentistry, Hualien Tzu Chi Hospital, Buddhist Tzu Chi Medical Foundation, Hualien, Taiwan

\*\*Corresponding author. Department of Pathology, Taiwan Adventist Hospital, No. 424, Section 2, Bade Road, Taipei 10556, Taiwan.  
E-mail address: [yingtaijin@gmail.com](mailto: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](mailto:cpchiang@ntu.edu.tw) (C.-P. Chiang)

Received 1 September 2023  
Available online 9 September 2023