Journal of Dental Sciences 20 (2025) 1950–1952

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Concurrent occurrence of a salivary duct cyst and two mucoceles in the lower lip

KEYWORDS
Salivary duct cyst;
Mucocele;
Lower lip;
Upper lip

The salivary duct cyst (SDC) of the minor salivary glands is an epithelium-lined true cyst, but the mucocele is a pseudocyst without the epithelial lining.[1–5] Here, we presented a case of concurrent occurrence of a SDC and two mucoceles in the minor salivary glands of the right lower labial mucosa in a 52-year-old male patient.

This 52-year-old male patient was referred to our oral mucosal disease clinic by a local dentist for treatment of a fibrotic mass approximately 0.8 × 0.7 × 0.4 cm in size at the right lower labial mucosa for about 6 weeks. The mass was sessile and covered by the smooth and pinkish labial mucosa. The clinical diagnosis by the local dentist was a mucocele with the fibrotic change. After discussing with the patient and obtaining the signed informed consent, the patient was referred to the oral and maxillofacial surgery department, and the right lower labial mucosal fibrotic mass was totally excised under local anesthesia by an oral surgeon. The soft tissue specimen was sent for histopathological examination. Microscopically, a ruptured cyst lined by one to two layers of eosinophilic columnar epithelium with oncocytic metaplasia was found at the right upper portion of the soft tissue specimen (Fig. 1A–D). Moreover, a dilated excretory duct lined by one to five layers of eosinophilic cuboid and columnar oncocytes with papillary surface and a thin layer of periductal lymphoplasma cell infiltrate was discovered at the left upper portion of the soft tissue specimen (Fig. 1A,E and F). In addition, two mucoceles with each composed of a mass of loose connective tissue with spilled mucin evenly accumulated in the tissue spaces and a diffuse infiltrate of foamy histiocytes and lymphoplasma cells were noted at the left and right lower portions of the soft tissue specimen, respectively (Fig. 1A,G and H). Furthermore, two dilated intralobular ducts were also found at the left upper part of the left mucocele (Fig. 1A and G) and several dilated capillaries filled with red blood cells were discovered in the right mucocele as well (Fig. 1A and H). Therefore, the final histopathological diagnosis was concurrent occurrence of a SDC and two mucoceles in the right lower labial mucosa.

The SDC and mucocele both may present as a sessile nodular lesion at the upper or lower lips, but they have some clinical and histopathological differences.[1–5]

Intraoral SDCs are relatively evenly distributed at the oral mucosal sites, but they occur more frequently at the lower lip than at the upper lip, and occur more commonly in relatively older adults.[1] Nearly all mucoceles are located in the lower lip and they are commonly found in children and young adults.[2] There are two histopathological types of mucocele. In one type, a pool of the spilled mucin is surrounded by a thin layer of fibrous connective tissue with a moderate to severe foamy histiocyte and lymphoplasma cell infiltrate in the submucosa. In the other type, the spilled mucin is more evenly accumulated in the tissue spaces of a subepithelial loose connective tissue mass with a diffuse infiltrate of foamy histiocytes and lymphoplasma cells.[2,3] The two mucoceles in the excised soft tissue specimen of the present case are belonged to the latter type. The mucocele usually results from local trauma-induced rupture of a salivary gland duct and spillage of mucin into the surrounding soft tissue.[2] However, the SDC is

https://doi.org/10.1016/j.jds.2025.05.005
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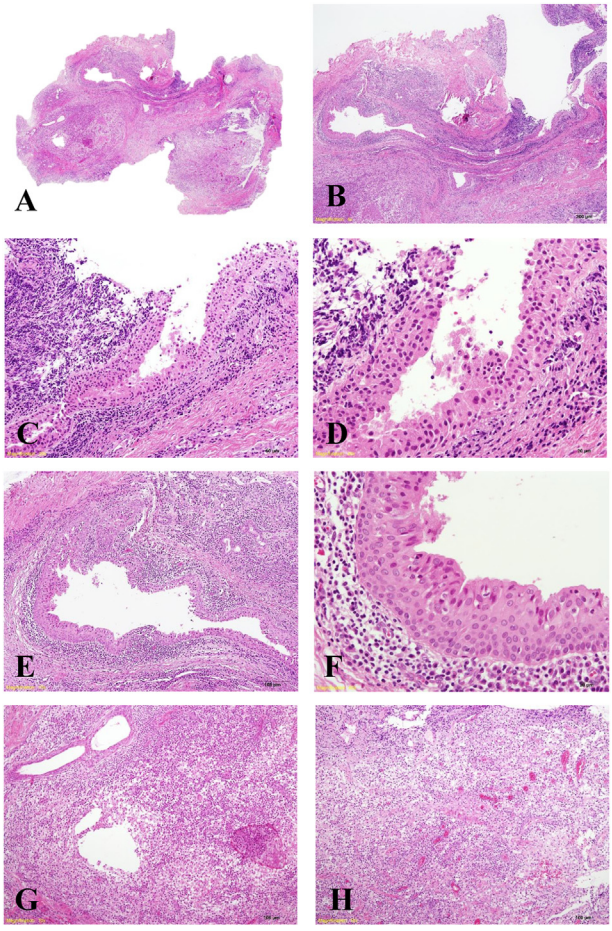

Figure 1 Histopathological photomicrographs of our case of concurrent occurrence of a salivary duct cyst and two mucoceles in the right lower labial mucosa. (A) a ruptured cyst, a dilated excretory duct, and two mucoceles were discovered at the right upper, left upper, and left and right lower portions of the excised soft tissue specimen, respectively. (B, C and D) Low- and high-power photomicrographs exhibiting a ruptured cyst lined by one to two layers of eosinophilic columnar epithelium with oncocytic metaplasia. (E and F) Medium- and high-power photomicrographs demonstrating a dilated excretory duct lined by one to five layers of eosinophilic cuboid and columnar oncocytes with papillary surface and a thin layer of periductal lymphoplasma cell infiltrate. (G and H) Medium-power photomicrographs showing two mucoceles with each composed of a mass of loose connective tissue with spilled mucin evenly accumulated in the tissue spaces and a diffuse infiltrate of foamy histiocytes and lymphoplasma cells. Two dilated intralobular ducts were also found at the left upper part of the left mucocele (G) and several dilated capillaries filled with red blood cells were discovered in the right mucocele as well (H). (Hematoxylin and eosin stain; original magnification; A, 2 × ; B, 4 × ; C, 20 × ; D, 40 × ; E, 10 × ; F, 40 × ; G, 10 × ; and H, 10 ×).

frequently caused by intraluminal mucous stasis or ductal obstruction by the mucus plug, and it is a true cyst usually lined by one to two layers of columnar or cuboidal epithelial cells with oncocytic metaplasia.[1] We also reported two SDCs at the upper labial mucosa, and both of them are lined by one to two layers of columnar epithelial cells with oncocytic metaplasia.[4,5]

Declaration of competing interest

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

Acknowledgments

None.

References

1. Stojanov Ivan J, Malik Umer A, Woo Sook-Bin. Intraoral salivary duct cyst: clinical and histopathologic features of 177 cases. *Head Neck Pathol* 2017;11:469–76.
2. Chi AC, Lambert PR, Richardson MS, Neville BW. Oral mucoceles: a clinicopathologic review of 1,824 cases, including unusual variants. *J Oral Maxillofac Surg* 2011;69:1086–93.
3. Mustapha IZ, Boucree Jr SA. Mucocele of the upper lip: case report of an uncommon presentation and its differential diagnosis. *J Can Dent Assoc* 2004;70:318–21.
4. Jin YT, Hwang MJ, Chang JY, Chiang CP. Mucus retention cyst with oncocytic metaplasia of the epithelial lining. *J Dent Sci* 2022;17:615–7.
5. Kang FY, Lee YP, Sun A, Chiang CP. Salivary duct cyst of the upper lip. *J Dent Sci* 2025;20:1306–8.

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Received 2 May 2025
Available online 16 May 2025

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