CORRESPONDENCE

Langerhans cells in a dermoid cyst epithelium lining

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Dermoid cysts are uncommon developmental anomalies that rarely occur in the oral cavity.1 Here, we report a case of a dermoid cyst at the midline of the floor of the mouth and evaluate the density of Langerhans cells in the epithelium lining of this dermoid cyst.

A 7-year-old girl came to the dental department of our hospital for treatment of a sublingual swelling detected when she was ~2-years old. Intraoral examination revealed a large soft tissue mass in the midline of the floor of the mouth. There was no palpation pain, the consistency was soft, and the surface mucosa was intact (Figure 1A). The lateral facial view showed an infralingual swelling (Figure 1B) and the occlusal film revealed no sialolith. The clinical impression was a dermoid cyst. Thus, the cystic lesion was removed by surgery under general anesthesia. The surgical specimen measured approximately 2.5 cm × 1.5 cm × 1.2 cm. On section, it contained cheese-like materials. Histopathological examination showed a cystic lesion lined by orthokeratinized stratified squamous epithelium. The cystic lumen was filled with shreds of keratin and hair-follicle-like structures and sebaceous glands were found in the fibrous cystic wall (Figures 1C and D). Therefore, a dermoid cyst was confirmed.

Anti-CD1a and anti-S-100 immunostains were used to identify and quantify the number of Langerhans cells in the epithelium lining of the dermoid cyst (Figures 1E and F). Only Langerhans cells presenting nucleus and visible dendrites were counted, and the Langerhans cell count was expressed as the mean number of Langerhans cells in six high-power fields (40× magnification). In the anti-CD1a immunostained section, we found a significantly higher mean number of Langerhans cells in the epithelium lining with a subepithelial chronic inflammatory cell infiltrate (10.3 ± 1.6 cells per high-power field) compared to that without a subepithelial chronic inflammatory cell infiltrate (6.3 ± 1.0 cells per high-power field, p < 0.001 by Student t test). Moreover, the anti-S-100 protein immunostained section also demonstrated a significantly higher mean number of Langerhans cells in the epithelium lining with a subepithelial chronic inflammatory cell infiltrate (11.2 ± 1.5 cells per high-power field) compared to that without a subepithelial chronic inflammatory cell infiltrate (6.8 ± 1.2 cells per high-power field, p < 0.001 by Student t test). No local recurrence of the lesion was found during the 6-month follow-up period.

Langerhans cells in the epithelium lining of dermoid cysts are rarely investigated. This study used both anti-CD1a and anti-S-100 protein immunostains to identify and quantify the number of Langerhans cells in the epithelium lining of a dermoid cyst. Both immunostaining techniques found a significantly higher mean number of Langerhans cells in the epithelium lining with a subepithelial chronic inflammatory cell infiltrate compared to that without a subepithelial chronic inflammatory cell infiltrate. This finding suggests that the

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density of Langerhans cells in the epithelium lining is associated with the inflammatory status in the subepithelial connective tissue. In fact, anti-CD1a and anti-S-100 protein immunostains can also be used to identify Langerhans cells in central granular cell odontogenic tumors,2,3 in epithelia lining of odontogenic cysts,4 and in odontogenic epithelia of odontogenic fibromas.5

References