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Glandular odontogenic cyst mimicking a lateral periodontal cyst

KEYWORDS
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Glandular odontogenic cyst (GOC) is a specific type of developmental odontogenic cyst that may mimic other developmental odontogenic cysts such as dentigerous cyst or lateral periodontal cyst, radiographically.[1–5] Here, we reported a case of GOC mimicking a lateral periodontal cyst that was located between the roots of teeth 34 and 35 in a 40-year-old male patient.

This 40-year-old male patient came to our dental clinic for treatment of a slight swelling at the buccal alveolar cortical plate near the teeth 34 and 35 area. A mild pain was noted when palpating the swelling area. The periapical and panoramic radiographies were performed and revealed a round unilocular radiolucent lesion measuring approximately 1.0 cm in diameter between the roots of teeth 34 and 35. The electric and cold tests showed that both the teeth 34 and 35 were vital. Thus, the clinical diagnosis was a lateral periodontal cyst and the tentative treatment plan was the total enucleation of the cystic lesion. After discussing with the patient and obtaining the signed informed consent, the cystic lesion was totally enucleated and the excised soft tissue specimen was sent for histopathological examination. Microscopically, it showed a cystic lesion lined by the stratified squamous epithelium of various thickness (Fig. 1A). There was a severe lymphoplasma cell infiltrate in the fibrous cystic wall (Fig. 1A and B). At a thickened area of the lining epithelium, an intraepithelial microcyst lined by a single layer of columnar cells was discovered (Fig. 1B and C). At focal areas, the superficial layer of the lining epithelium revealed eosinophilic cuboidal cells (so-called hobnail cells) (Fig. 1D and E). Moreover, some clear or vacuolated cells were found in the spinous layer of the stratified squamous lining epithelium (Fig. 1E and F). In addition, at an occasional plaque-like area of the lining epithelium, the epithelial cells were arranged to form a spherical nodule (Fig. 1G an H). Because the histological features were so characteristic that a final histopathological diagnosis of a GOC was confirmed.[1–5]

The GOC is now a relatively well-known entity. Fowler et al.[1] reported the clinicopathological features of 46 cases of GOC, in which the radiographs and/or radiographic descriptions were available in 41 cases. Of the 41 GOCs, 8 were associated with an unerupted tooth (so-called in a dentigerous relationship), 3 mimicked a lateral periodontal cyst, and 2 were located between the roots of the maxillary lateral incisor and canine (so-called in a globulomaxillary relationship).

Because the GOCs may mimic other developmental cysts of either odontogenic or non-odontogenic origin radiographically. The microscopic criteria used for the diagnosis of a GOC became very important. Fowler et al.[1] analyzed the microscopic features of the 46 GOCs and subsequently selected 10 characteristic microscopic parameters as the key criteria for the diagnosis of a GOC. Of these 10 characteristic microscopic parameters, the surface eosinophilic cuboidal (hobnail) cells were found in 46 (100%) cases, intraepithelial microcysts in 44 (95.7%) cases, apocrine snouting of hobnail cells in 42 (91.3%) cases, clear or vacuolated cells in 41 (89.1%) cases, epithelial lining with

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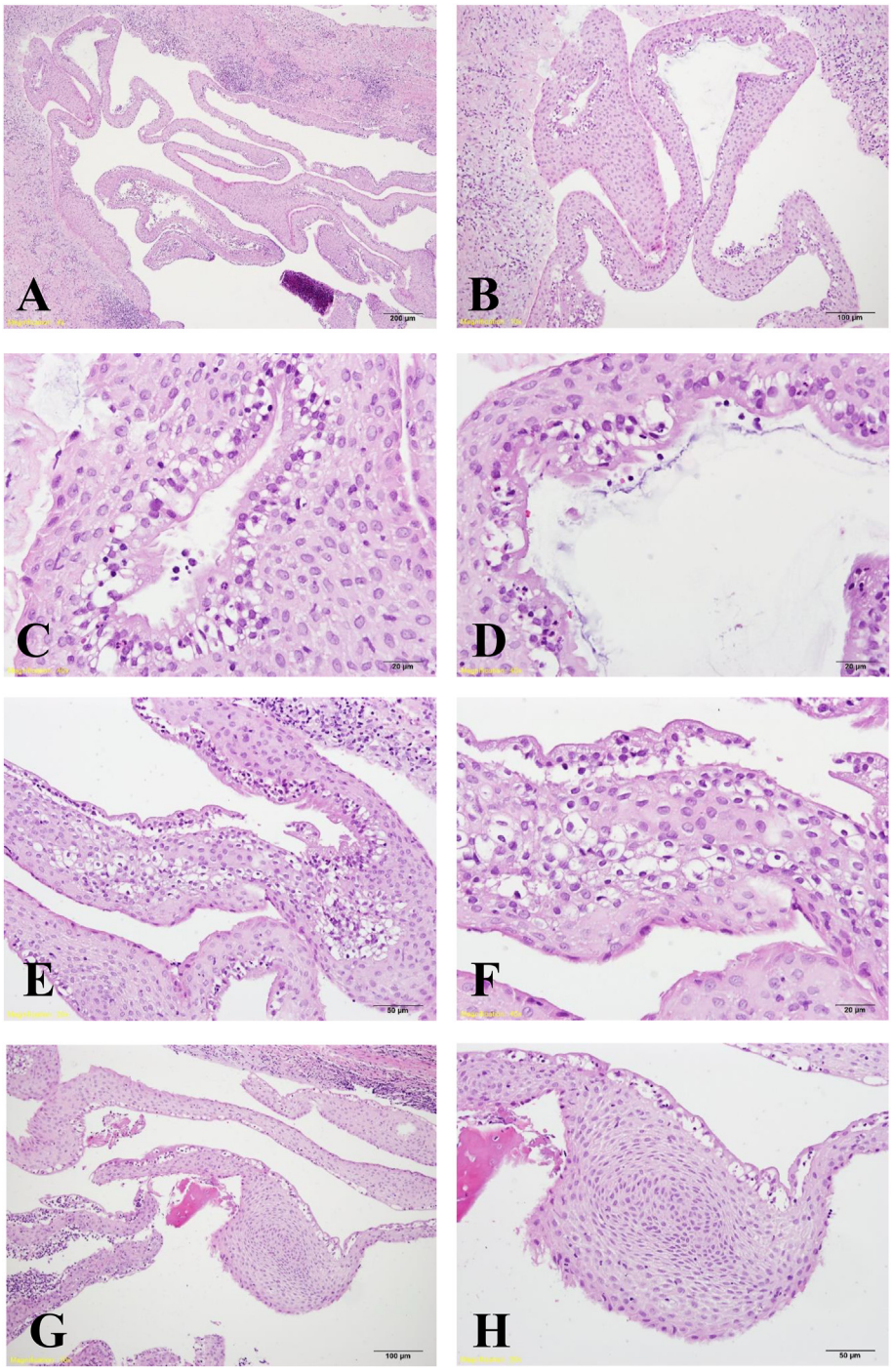

Figure 1 Histopathological photomicrographs of our case of glandular odontogenic cyst. (A and B) Low- and medium-power photomicrographs showing a cystic lesion lined by the stratified squamous epithelium of various thickness. There was a severe lymphoplasma cell infiltrate in the fibrous cystic wall. (B and C) Medium- and high-power photomicrographs demonstrating an intraepithelial microcyst lined by a single layer of columnar cells in a thickened area of the lining epithelium. (D and E) At focal areas, the superficial layer of the lining epithelium revealed eosinophilic cuboidal cells (so-called hobnail cells). (E and F) Some clear or vacuolated cells were found in the spinous layer of the stratified squamous lining epithelium. (G and H) At an occasional plaque-like area of the lining epithelium, the epithelial cells were arranged to form a spherical nodule. (Hematoxylin and eosin stain; original magnification; A, 4 × ; B and G, 10 × ; C, D and F, 40 × ; E and H, 20 ×).

variable thickness in 41 (89.1%) cases, epithelium with papillary projections in 39 (84.8%) cases, mucous cells in 33 (71.7%) cases, epithelial spheres in 31 (67.4%) cases, multiple compartments in 29 (63.0%) cases, and cilia in 10 (21.7%) cases of GOC. Fowler et al.[1] further suggested that the presence of 7 or more characteristic microscopic

parameters is highly predictive of a GOC diagnosis, and the presence of 5 or less microscopic parameters is highly predictive of a non-GOC diagnosis.[1]

Declaration of competing interest

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

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None.

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