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Glandular odontogenic cyst mimicking a dentigerous cyst

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Dentigerous cyst;
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Spherical nodule

Glandular odontogenic cyst (GOC) is a rare developmental odontogenic cyst that may mimic a dentigerous cyst, a lateral periodontal cyst, or a globulomaxillary cyst, radiographically.[1–3] Here, we reported a case of GOC mimicking a dentigerous cyst surrounding the crown of an impacted tooth 38 in a 43-year-old male patient.

This 43-year-old male patient came to our dental clinic for evaluation and treatment of an impacted tooth 38. The panoramic radiography was performed and showed a unilocular radiolucent lesion surrounding the crown of an impacted tooth 38. Thus, the clinical diagnosis was a central-typed dentigerous cyst. After discussing with the patient and obtaining the signed informed consent, the cystic lesion was totally enucleated and the impacted tooth 38 was removed under local anesthesia. The excised soft tissue specimen was sent for histopathological examination. Microscopically, it showed a cystic lesion lined by the stratified squamous epithelium of variable thickness and some of the lining epithelial cells formed plaque-like elevated structures (Fig. 1A and B). At focal areas, the lining epithelium demonstrated papillary projections (Fig. 1C and D), and the superficial layer of the lining epithelium revealed ciliated eosinophilic cuboidal cells (so-called hobnail cells) (Fig. 1E) or vacuolated mucin secreting cells (Fig. 1F). Moreover, at occasional thickened area of the lining epithelium, the epithelial cells exhibited a spherical nodule (Fig. 1G). The cholesterol clefts with some of them surrounded by multinucleated foreign body giant cells, hemosiderin-laden macrophages, and foci of dystrophic calcification were noted in the focal fibrous cystic wall (Fig. 1H). Because the histological features were so characteristic that a final histopathological diagnosis of a GOC was confirmed.[1–3]

The GOC is now a relatively well-known entity. The recent literature reviews found 169 GOC cases reported in the English literature.[4] The GOCs were slightly more prevalent in men than in women (1.15:1), the mean age of the patients was 48.1 years with highest prevalence in the fifth and sixth decades of life.[4] Moreover, the GOCs were more prevalent in the mandible than in the maxilla (2.73:1), and in the anterior region than in the posterior region of the jaws.[4] Approximately 62% of the GOCs demonstrated a unilocular radiolucent lesion. The GOC is famous for its high recurrent rate similar to that of odontogenic keratocyst.[1,4] The information about recurrence was known in 97 of 169 GOCs, of which 21 (21.6%) recurred (the 21 recurrent lesions were treated by curettage in four, by enucleations in 16, and by marginal resection in one).[4]

Ten histopathological features are characteristic for GOCs.[4] These include (1) the surface eosinophilic cuboidal (hobnail) cells, (2) intraepithelial microcysts or duct-like spaces lined by a single layer of cuboidal or columnar cells, (3) apocrine snouting of hobnail cells, (4) clear or vacuolated cells, (5) epithelial lining with variable thickness, (6) epithelium with papillary projections, (7) mucous goblet cells, (8) plaque-like thickenings, (9) cilia on the surface of hobnail cells, and (10) multiple cystic spaces. Fowler et al.[1] suggested that the presence of 7 or more characteristic microscopic features was highly predictive of a GOC diagnosis, and the presence of 5 or less microscopic parameters was highly predictive of a non-GOC diagnosis. The GOC may occasionally misdiagnosed as a central mucoepidermoid carcinoma.[5] However, GOCs do not show dysplastic features such as the pleomorphism, hyperchromatism, higher nuclear/cytoplasm ratio, and mitotic figures in the tumor epithelial cells. On the contrary, central mucoepidermoid carcinomas do have these dysplastic features. Furthermore, GOCs do not reveal *MAML2* gene rearrangements, which are often discovered in central mucoepidermoid carcinomas.[5]

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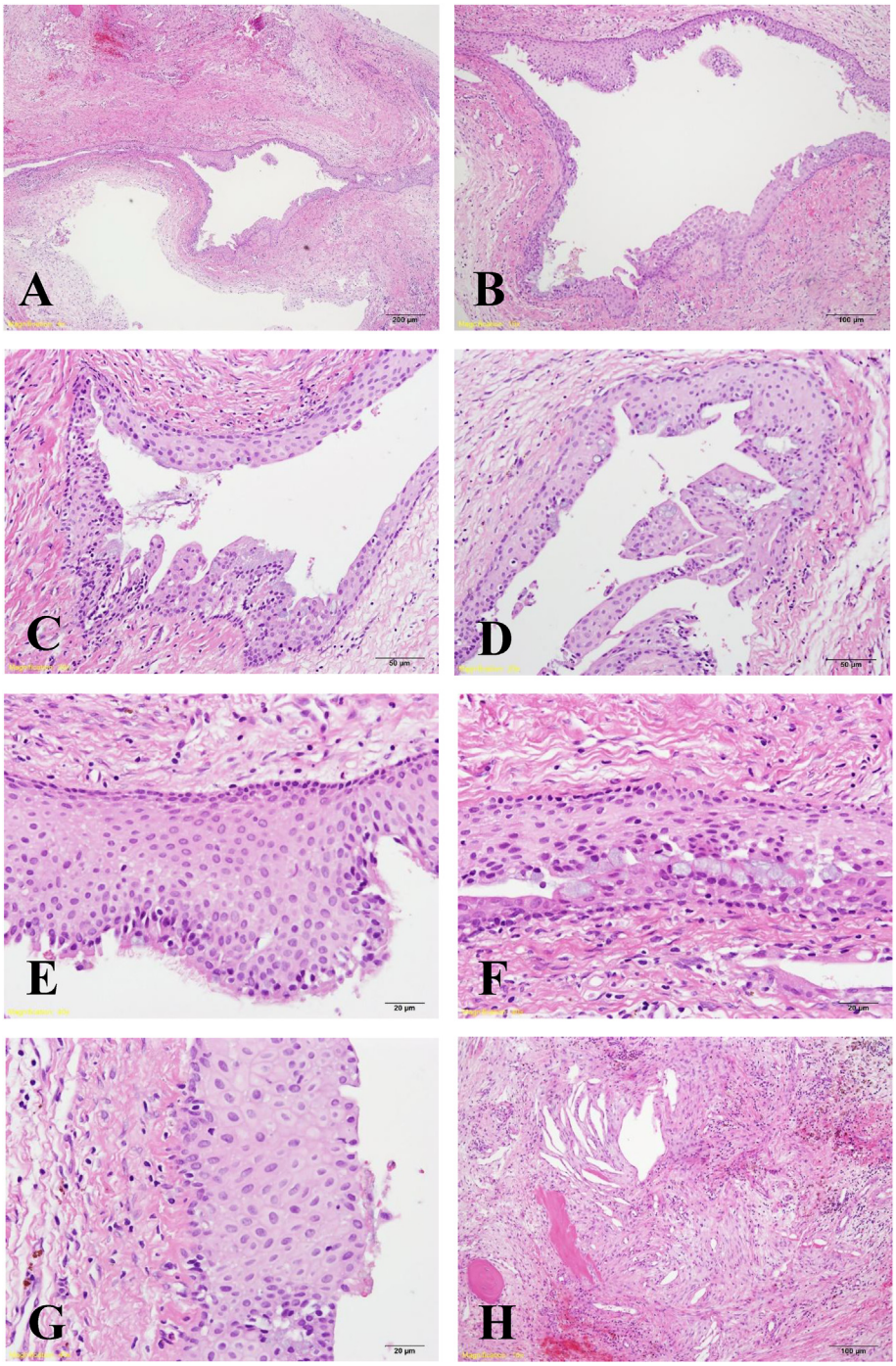

Figure 1 Histopathological photomicrographs of our case of glandular odontogenic cyst. (A and B) Low- and medium-power photomicrographs showing a cystic lesion lined by the stratified squamous epithelium of various thickness and some of the lining epithelial cells formed plaque-like elevated structures. (C and D) High-power photomicrographs demonstrating papillary projections at the focal areas of the lining epithelium. (E and F) At focal areas, the superficial layer of the lining epithelium revealed ciliated eosinophilic cuboidal cells (so-called hobnail cells, E) or vacuolated mucin secreting cells (F). (G) At occasional thickened area of the lining epithelium, the epithelial cells exhibited a spherical nodule. (H) The cholesterol clefts with some of them surrounded by multinucleated foreign body giant cells, hemosiderin-laden macrophages, and foci of dystrophic calcification were noted in the focal fibrous cystic wall. (Hematoxylin and eosin stain; original magnification; A, 4×; B, 10×; C and D, 20×; E, F, and G, 40×; and H, 10×).

Declaration of competing interest

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

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None.

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