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Glandular odontogenic cyst in a dentigerous relationship



KEYWORDS

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Glandular odontogenic cyst (GOC) is an uncommon cyst of the jaws, but more than 22 cases of GOC have been reported as radiolucent lesions in a dentigerous relationship.¹ Here, we reported a case of GOC presenting as a dentigerous cyst-like lesion surrounding the crown of an impacted tooth 48 in a 40-year-old male patient.

This 40-year-old male patient was referred to our dental clinic for evaluation and treatment of a dentigerous cyst surrounding the crown of an impacted tooth 48. The lesion was asymptomatic and was found by a routine panoramic radiographic examination (Fig. 1A). The clinical diagnosis was a dentigerous cyst associated with an impacted right mandibular third molar. After discussing with the patient and obtaining the signed informed consent, the cystic lesion was totally enucleated and the impacted right mandibular third molar was extracted under local anesthesia. The removed soft tissue specimen was sent for histopathological examination. Microscopically, it showed a cystic lesion lined by the nonkeratinized stratified squamous epithelium of various thickness. Cholesterol clefts with some of them surrounded by multinucleated foreign body giant cells were noted in the fibrous cystic wall (Fig. 1B and C). The superficial layer of the lining epithelium revealed ciliated columnar or eosinophilic cuboidal cells (so-called hobnail cells) (Fig. 1C, D, E and F). Pseudomicrocysts (Fig. 1F), mucin secreting cells (Fig. 1G), and epithelial spheres (Fig. 1H) were also identified in the stratified squamous lining epithelium. Because the histological features were so characteristic that a final histopathological diagnosis of a GOC was confirmed.¹

The GOC is now a relatively well-known entity. The recent reviews indicate over 150 GOC cases reported in the English literature.¹ In a large series of 46 GOC cases reported by Fowler et al.,¹ the patients' mean age at diagnosis was 51 years with 71% of cases in the 5th-7th decades. No gender predilection was noted. Moreover, 80% of GOCs occurred in the mandible, and 60% of the lesions involved the anterior regions of the jaws. GOCs have two important clinicopathological features. First, the recurrent rate of GOC is similar to that of odontogenic keratocyst. Second, it may be confused microscopically with central mucoepidermoid carcinoma.¹ Several histopathological features are characteristic for GOCs. These include (1) the presence of eosinophilic cuboidal (hobnail) cells on the surface of the stratified squamous lining epithelium, (2) variable thickness of the cystic lining epithelium, the presence of (3) microcysts or duct-like spaces, (4) epithelial spheres (whorls) or plaque-like thickenings, (5) clear or vacuolated cells, and (6) mucous goblet cells in the cystic lining epithelium, (7) papillary projections of the lining epithelium into the cystic lumen, (8) apocrine snouting of hobnail cells, (9) cilia on the surface of hobnail cells, and (10) multiple compartments. Fowler et al.¹ suggested that the presence of 7 or more microscopic parameters was highly predictive of a diagnosis of GOC and the presence of 5 or less microscopic parameters was highly predictive of a diagnosis of non-GOC. Although the immunohistochemical stain is useful for identification of tumor cell origin,^{2–5} the histopathological diagnosis of GOC does not need the immunostain. Most cases of GOC are treated by conservative enucleation. Because GOC is a locally aggressive odontogenic cyst with a

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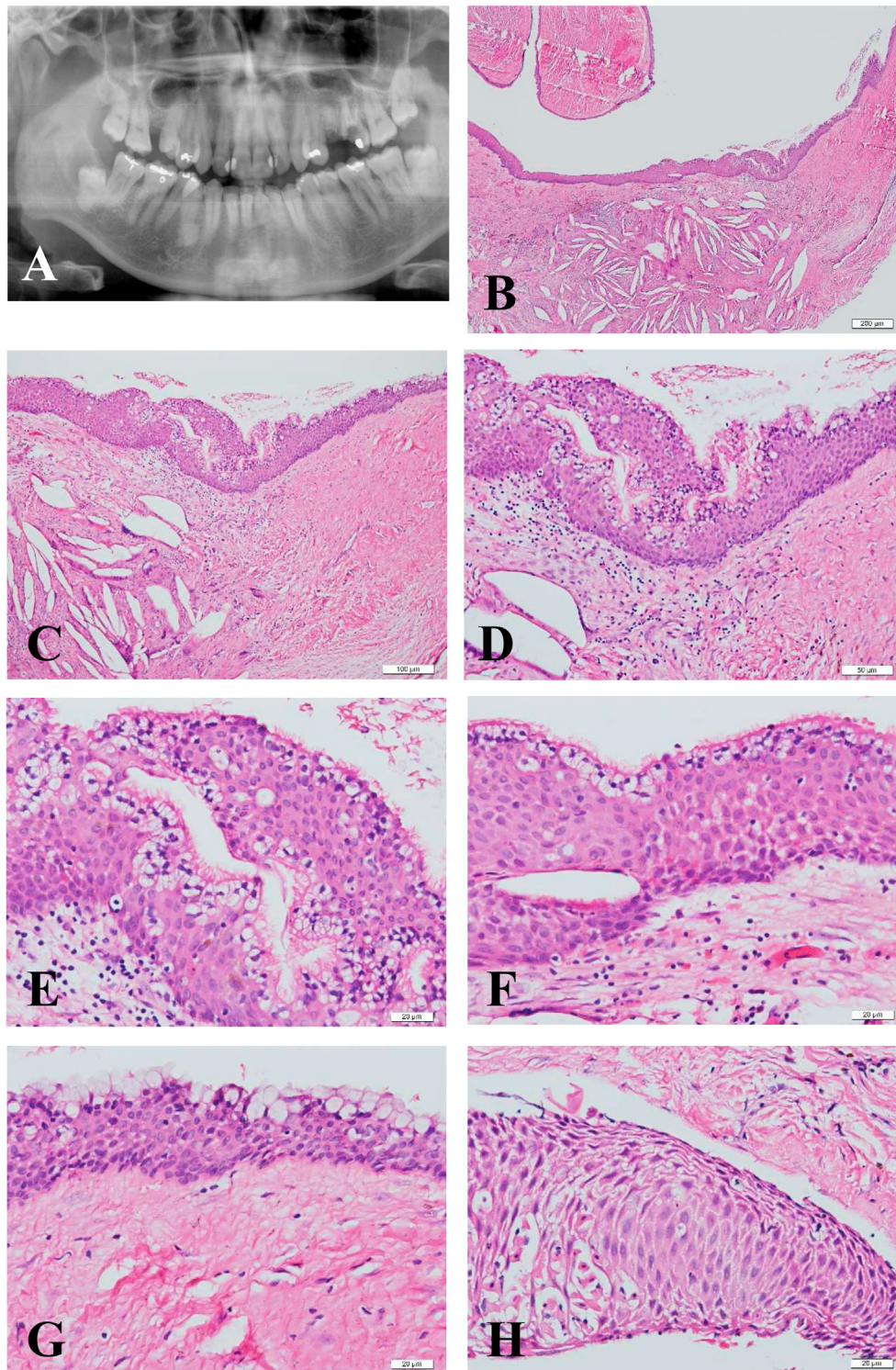


Figure 1 Radiographic and histopathological photographs of our case of glandular odontogenic cyst. (A) A panoramic radiograph revealing a dentigerous cyst-like lesion surrounding the crown of an impacted tooth 48. (B) A low-power microphotograph showing a cystic lesion lined by the nonkeratinized stratified squamous epithelium of various thickness. Cholesterol clefts with some of them surrounded by multinucleated foreign body giant cells were noted in the fibrous cystic wall. (C, D, E and F) Medium- and high-power microphotographs demonstrating ciliated columnar or eosinophilic cuboidal cells (so-called hobnail cells) on the surface of the stratified squamous lining epithelium. Pseudomicrocysts (F), mucin secreting cells (G), and epithelial spheres (H) were also identified in the stratified squamous lining epithelium. (Hematoxylin and eosin stain; original magnification; B, 4 × ; C, 10 × ; D, 20 × ; and E, F, G, and H, 40 ×).

high recurrence rate, a close long-term follow-up is absolutely necessary for the GOC patients after surgery.¹

Declaration of competing interest

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

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