Case Report

Dentigerous Cyst Associated with an Erupted Tooth – An Unusual Presentation

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Abstract

Dentigerous cysts are the most common developmental cysts in the jaw region. They are usually associated with the crown of unerupted teeth, odontomas or supernumerary teeth. Dentigerous cysts generally have a chronic, asymptomatic growth phase and are discovered frequently on routine radiographic examination. Occurrence of a dentigerous cyst with an erupted anterior tooth is exceptionally rare and seldom reported in literature. We report an unusual presentation of a dentigerous cyst associated with an erupted mandibular canine. A detailed clinical and radiographic examination augmented its accurate histopathological diagnosis.

Keywords: Cysts, Dental Radiography, Dentigerous Cyst, Mandible, Tooth Eruption

INTRODUCTION

Dentigerous cyst is the most common developmental odontogenic cyst.[1] The exact histogenesis of this cyst remains indefinite, but the most probable etiology is its developmental origin from a tooth follicle.[2] Dentigerous cysts are almost always associated with the crowns of unerupted teeth and are seen attached to the cementoenamel junction.[3] Less frequently, they can be found in relation with supernumerary teeth,[4] odontomas[5] or unerupted deciduous teeth.[6] Their association with erupted teeth is an extremely rare finding. Herein we report a case of dentigerous cyst associated with an erupted mandibular canine. Detailed clinical and radiographic examination in correlation with the histopathological features aided in diagnosis of this unusual entity.

CASE REPORT

A 55 year old lady presented with a chief complaint of swelling in the right posterior region of the lower jaw since one year. There were no associated complaints of bleeding, discharge, numbness, paresthesia or loose teeth in the same region. The previous medical and dental history were noncontributory. Extraoral examination revealed a 2 x 3 cm swelling in the right posterior region of the mandible. The overlying skin appeared normal with no evidence of sinus opening or purulent discharge. The intraoral examination showed a diffuse swelling of the same size in 41, 42 & 43 region. The patient was partially edentulous with only 13, 31, 32, 33, 34, 35, 41, 42 and 43 present. The teeth in the region of swelling, 42 and 43 were decayed, with 43 having arrested caries. Based on the above features, radicular cyst, residual cyst, dentigerous cyst, odontogenickeratocyst and unicysticameloblastoma were considered under provisional diagnosis.

Tooth vitality tests were performed and all the teeth responded positively. These findings ruled out the possibility of Radicular cyst in the same region. A detailed radiographic examination was carried out to determine the extent of the lesion. Orthopantomogram revealed a well-defined multilocularradiolucency in the right body of the mandible extending from 41 to 47 region. The radiolucency had sclerotic borders and extended from alveolar crest to the lower border of the mandible (Figure 1). In addition, the occlusal radiograph displayed expansion of the buccal cortex and perforation in the region of 46 and 47 (Figure 2).

Based on the clinicoradiographic correlation, dentigerous cyst, odontogenickeratocyst and unicysticameloblastoma were considered under differential diagnoses. The cystic lesion was surgically enucleated under general anaesthesia and the surgical specimen was sent for histopathological investigation. The postoperative healing was uneventful with no signs of recurrence.

Gross examination of the cystic specimen demonstrated 3 surgical bits brown in color, firm in consistency, the greatest bit measuring 3.5 x 3 cm attached to 43 at the cemento-enamel junction on the distal aspect (Figure 3). Histopathological examination revealed a cystic lumen lined by 2-3 layered non-keratinized stratified squamous epithelium exhibiting flat to low columnar cells resembling reduced enamel epithelium (Figure 4). Certain areas of superficial epithelium exhibited presence of mucous prosoplasia (Figure 5). The cystic wall exhibited loose fibrous connective tissue, vascular spaces, occasional inflammatory cells, few areas of hemorrhage and abundant cholesterol clefts (Figure 6). Correlating with the clinical and radiographic findings, a diagnosis of Dentigerous cyst associated with right mandibular canine was made.

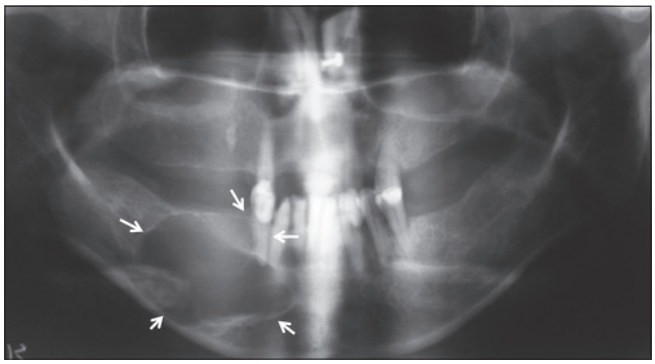

Figure 1: Orthopantomogram revealing a multilocular radiolucency attached to 43 at CEJ

Figure 2: Occlusal radiograph showing radiolucency with perforation of buccal cortex

DISCUSSION

Dentigerous cysts are true developmental cysts which are usually found in association with impacted teeth.[3] Their attachment with the cemento-enamel junction of the involved teeth forms the prime basis for their diagnosis. In order of decreasing frequency, they are associated with mandibular third molars, maxillary canines, mandibular second premolars, maxillary third molars, mandibular first premolar, maxillary second premolar and mandibular canine.[7] Association with an erupted mandibular canine is an extremely rare entity which has been reported here.

Radiographically, three variants of dentigerous cysts namely central, lateral and circumferential have been described. These variants invariably demonstrate a unilocular radiolucency with sclerotic borders surrounding the crown of the tooth but as a rule of thumb, non- eruption or partial eruption of the tooth is considered mandatory for diagnosis of dentigerous cyst. A large dentigerous cyst may appear multilocular radiographically owing to the

Figure 3: Gross specimen showing cystic tissue attached to the neck of mandibular canine

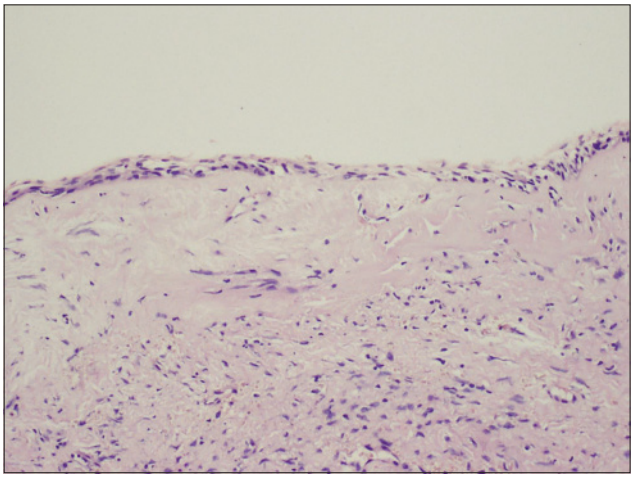

Figure 4: Photomicrograph showing presence of 2-3 layered cystic lining (H& E, 10X)

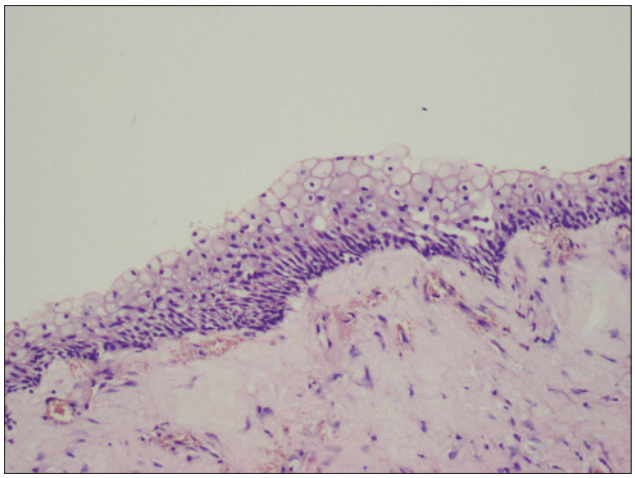

Figure 5: Cystic lining showing mucous producing cells (H& E, 20X)

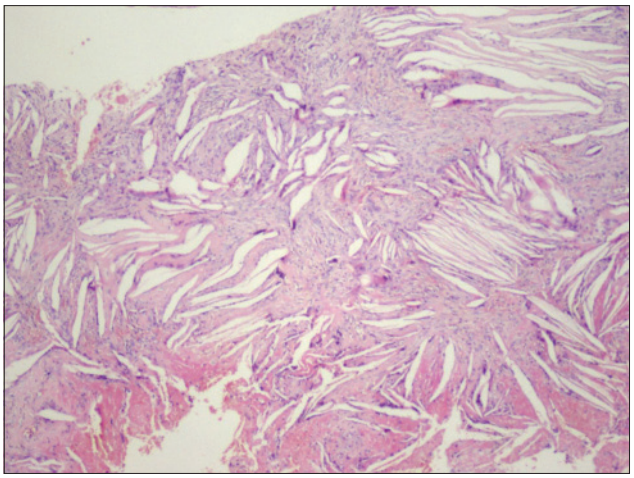

Figure 6: Presence of abundant cholesterol clefts in the cystic wall (H&E, 20X)

persistence of bone trabeculae within the radiolucency.[8] In our case, the cyst was large, multilocular and associated with the neck of mandibular canine. The growth of the cyst in the present case cyst had occurred predominantly in the apical direction allowing the crown to erupt normally. This demonstrates a novel radiographic variant of lateral type of dentigerous cyst. The above finding is extremely rare.

Histologically, dentigerous cyst classically demonstrates a thin cystic wall comprising of non-keratinized epithelium made up of flattened to low cuboidal or low columnar cells resembling reduced enamel epithelium. Localized proliferation of the cystic wall may occur in the presence of secondary infection.[8] The cystic wall demonstrates a myxomatous appearance with abundant ground substance and delicate collagen fibers. Nests, islands or strands of odontogenic epithelium may be evident. In some dentigerous cysts, the epithelial lining may show presence of mucous producing cells as was seen in our case. Additional findings include presence of cholesterol clefts and Rushton bodies in the cystic wall. Abundant cholesterol clefts were found in the cystic wall in our case.

CONCLUSION

The present case demonstrates an extremely rare yet a new variant of lateral dentigerous cyst. Detection of an intrabony lesion in the jaws requires a thorough clinical, radiographic and histopathological workup. Dentigerous cyst usually follows a chronic protracted course and its detection in the presence of carious teeth becomes a challenge to both the surgeons and pathologists. Secondary infection of the developmental lesions masks the typical features which makes the diagnosis even more difficult. Use of various clinical tests and accurate imaging techniques helps the pathologists to appropriately analyze the histopathological picture. Reporting of similar cases in future can increase awareness of this particular entity and help in precise diagnosis and treatment.

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