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DENTIGEROUS CYST IN CHILDREN: A RARE CASE REPORT

(*KISTA DENTIGEROUS PADA ANAK: SEBUAH KASUS LANGKA)*

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ABSTRACT

Dentigerous cysts are growths of the jaw's epithelial lining that develop from the dental follicle of unerupted teeth. These cysts are usually found during routine radiography exams, associated with immature teeth. Dentigerous cysts typically don't cause symptoms unless they get big enough to swell. Third, molars and maxillary canines are frequently associated with most dentigerous cysts. A diagnosis is made based on histopathological, radiological, and clinical findings. We describe an instance of a dentigerous cyst that was connected to two immature mandibular premolar teeth. This rare case report discusses the treatment of a dentigerous cyst in the lower premolar region of the left mandible. Under local anesthesia, the patient had surgical treatment that included the removal of two primary teeth and enucleation of the cyst. The evaluation revealed that one week after surgery, the recovery was complete.

Keywords: dentigerous cyst; enucleation; primary teeth

ABSTRAK

Kista dentigerous adalah pertumbuhan lapisan epitel rahang yang

berkembang dari folikel gigi pada gigi yang belum erupsi. Selama pemeriksaan radiografi rutin, kista ini biasanya ditemukan, berhubungan dengan gigi yang belum matang. Kista dentigerous biasanya tidak menimbulkan gejala apa pun kecuali ukurannya cukup besar hingga membengkak. Gigi geraham ketiga dan gigi taring rahang atas sering dikaitkan dengan sebagian besar kista dentigerous. Diagnosis dibuat berdasarkan temuan histopatologis, radiologis, dan klinis. Kami menggambarkan contoh kista dentigerous yang terhubung ke dua gigi premolar mandibula yang belum matang. Dalam laporan kasus yang jarang terjadi ini, pengobatan kista dentigerous di daerah premolar bawah mandibula kiri dibahas. Di bawah anestesi lokal, pasien menjalani perawatan bedah yang mencakup pencabutan dua gigi sulung dan enukleasi kista. Evaluasi menunjukkan bahwa satu minggu setelah operasi, pemulihan telah selesai.

***Kata kunci**: enukleasi; gigi sulung; kista dentigerous*

INTRODUCTION

The most frequent type of odontogenic cyst after radicular cysts are dentigerous cysts, which are developing cysts of the jaws[1]. Dentigerous cysts develop when the follicle surrounding the crown of an unerupted tooth separates, which results in fluid accumulating between the enamel surface of a formed tooth and diminished enamel epithelium[2]. It frequently occurs in conjunction with impacted or immature teeth. The most usually affected teeth are the mandibular third molars, maxillary canines, and mandibular premolars. Rarely a dentigerous cyst is associated with primary teeth and supernumerary teeth.[2,3] On radiographs, it is commonly identified as an accidental finding because most of this cyst is asymptomatic.

The cyst is covered by a decreased enamel epithelium, as seen by the cyst wall's histological characteristics. Uninfected cysts have a thick layer of 2-4 layers of primitive ectomesenchyme-containing epithelium. Its cell layer resembles a rete peg and is slightly more cuboid than columnar. The stroma of the loose connective tissue is a source of several acid mucopolysaccharides. Hyperplastic

rete ridge and inflammatory infiltration on the cyst wall are signs of inflamed dentigerous cysts.[4]

We present a case of a 7-year-old boy with a dentigerous cyst in the left mandible's posterior region connected to primary teeth—diagnosis based on histopathological, radiographic, and clinical examination findings. Clinicians will also receive information about the surgical removal of two deciduous teeth and cysts.

CASE REPORT

A 7-year-old boy and his father came to the Department of Oral and Maxillofacial Surgery with a chief complaint cyst in the left mandible by accident radiograph. Deciduous teeth are caries. The patient had no systemic disease. There was no history of trauma to the left mandible region.

Intraoral clinical examination revealed a posterior mandible region on the left side of the midline. The labial mucosa were normal (figure 1).

Figure 1. Intraoral view.

The panoramic radiograph of existing primary teeth and erupted permanent teeth within normal limits. A radiolucent picture of enlarged follicle on the tooth germ 34,35,43 resembles a dentigerous cyst (figure 2).

Figure 2. Panoramic view.

CBCT confirmed the size of the radiolucent lesion with clear and firm boundaries extending from the cervical crowns of teeth 33, 34, and 35 towards the alveolar crest with a diameter of about 3.97 mm-4.59 mm (yellow arrow). There is still a cortical border and furcation of the primary teeth in the alveolar crest area (figure 3). A rounded radiolucency (yellow arrow) is seen in the area of teeth 33, 34 and 35. The lingual cortical thickness is around 1.16-1.93 mm and the buccal cortical thickness is around 0.82-0.92 mm (figure 4).

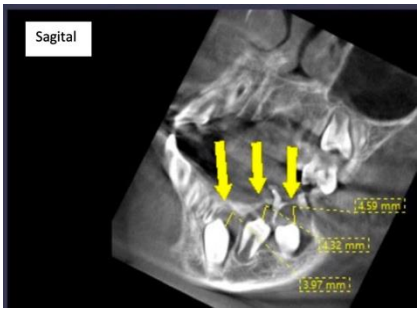

Figure 3. CBCT view.

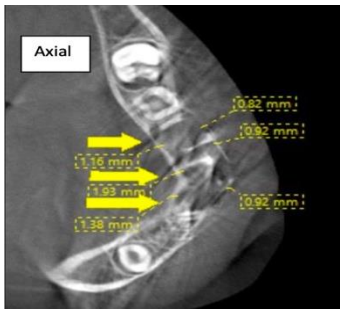

Figure 4. CBCT view.

Figure 5. CBCT view.

A round radiolucent lesion appeared on the crown of tooth 34, extending to the buccal lingual about 11.46 mm and a height of about 12.62 mm from the cervical part of the crown of tooth 34 (figure 5).

The clinical presentation and subsequent investigations led to the final diagnosis of dentigerous cyst associated with two immature mandibular premolar teeth. The lesion was enucleated together with two primary teeth under local anaesthesia. After local anesthesia, asepsis and antiseptic procedures were performed in the extra-oral and intra-oral areas, followed by injection of pehacain solution in the vestibule of the tooth area 74-75. Teeth extraction was carried out 74-75, cyst fluid was aspirated using suction, and all capsules were removed (figure 6-8). Irrigation was carried out with 0.9% NaCl saline solution; then, the operating area was filled with gauze containing antibiotics, which was helpful in preventing death space in the post-operative area.

Figure 6. Cyst cavity after extraction teeth 74-75.

Figure 7. Two immature mandibular premolar teeth.

Figure 8. Teeth 74-75 and cyst capsule.

The mass is immersed in a 10% formalin solution and then sent to the Anatomical Pathology section. From the results of the microscopic examination of the specimen, it was concluded that the dentigerous cyst with a non-specific chronic inflammatory process with a microscopic appearance of the presence of connective tissue covered with odontogenic epithelium, the stroma consists of connective tissue with a layer of lymphocytic inflammatory cells, islands of odontogenic epithelium are visible, and no signs are found—malignancy in this preparation. Seven days later, printing was done to make an obturator, which helps prevent debris from entering the cavity (figure 9).

Figure 9. Obturator.

DISCUSSION

Dentigerous cysts are odontogenic cysts that develop around the crowns of impacted permanent teeth. Routine radiography or swelling of the affected jaw region is the most common way to find these cysts. The primary reason for their diagnosis is their attachment to the cemento-enamel junction of the affected teeth. They are linked to mandibular third molars, maxillary canines, mandibular second premolars, maxillary third molars, mandibular first premolar, maxillary second premolar, and mandibular canines in decreasing order of frequency.[5] Dentigerous cysts, approximately 16.6% of all jaw cysts. About 95% of these cysts involve permanent dentition; only 5% are associated with supernumerary teeth. Dentigerous cysts can be seen as a well-defined unilocular or multilocular radiolucency enclosing the crown of an unerupted tooth on radiographs.[4] The cemento-enamel junction of the tooth is where the radiolucency normally appears. Radicular cysts, odontogenic keratocyst, and odontogenic tumors such as ameloblastoma, Pindborg, odontoma, and cementomas are different diagnoses for such radiolucency.[6]

The dentigerous cyst's exact histogenesis is unknown. The dentigerous cyst forms around the crown of an

unerupted tooth due to the buildup of fluid between the decreased enamel epithelium and enamel or between the layers of the enamel organ, according to the theory. The pressure imposed by an emerging tooth on an impacted follicle obstructs the venous outflow, causing fast transudation of serum across the capillary wall, resulting in fluid buildup.[7] The breakdown of proliferative cells of the follicle after a delayed eruption, according to Roller[8], is the most likely cause of the dentigerous cyst. The increased osmotic tension caused by these breakdown products leads to cyst development.

Enucleation and extraction of the related supernumerary tooth are the typical treatments for a dentigerous cyst.[9] Marsupialization is advised When a single draining is ineffective and total removal of the surrounding structure is not desirable.[10] Scolozzi et al. [11] advocated enucleation followed by an immediate bone grafting operation for a giant cyst. In this case, the impacted tooth was surgically removed, and the associated cyst was enucleated without needing bone grafting.

CONCLUSION

In such infrequent circumstances, early identification and adequate treatment planning are required to minimize future complications. An uncommon incidence of dentigerous cysts with two immature premolar teeth was reported in this instance. In a dentigerous cyst, treatment consists of cyst enucleation and intraoral extraction of the primary teeth implicated. The patient was satisfactorily handled, with no post-operative problems.

CONFLICT OF INTEREST

We declare no potential conflict of interest in the scientific articles we write.

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