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CRYPTIC CYSTIC PRESENTATION: A CASE REPORT

Dr. Asha M. L.[1], Dr. Laboni Ghorai[2]*, Dr. Basetty Neelakantam Rajarathnam[3], Dr. Mahesh Kumar H. M.[4], Dr. Lekshmy J.[5] and Dr. Reenu Jose[6]

[1]MDS, Professor and Head of the Department; Department of Oral Medicine & Radiology, Dr. Syamala Reddy Dental College, Hospital & Research Centre, Bangalore.
[2]PG Student, Department of Oral Medicine & Radiology, Dr. Syamala Reddy Dental College, Hospital & Research Centre, #111/1, SGR College Main Road, Munnekolala, Marathahalli (Post), Bangalore- 560037.
[3]MDS, Senior Lecturer; Department of Oral Medicine & Radiology, Dr. Syamala Reddy Dental College, Hospital & Research Centre, Bangalore.
[4]MDS, Senior Lecturer; Department of Oral Medicine & Radiology, Dr. Syamala Reddy Dental College, Hospital & Research Centre, Bangalore.
[5]MDS, Senior Lecturer; Department of Oral Medicine & Radiology, Dr. Syamala Reddy Dental College, Hospital & Research Centre, Bangalore.
[6]PG Student, Department of Oral Medicine and Radiology, Dr. Syamala Reddy Dental College, Hospital and Research Centre, Bangalore.

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***Correspondence for Author**
Dr. Laboni Ghorai
(MDS), Department of Oral Medicine & Radiology, Dr. Syamala Reddy Dental College, Hospital & Research Centre, #111/1, SGR College Main Road, Munnekolala, Marathahalli (Post), Bangalore- 560037.

ABSTRACT

Dentigerous cyst is the second most common odontogenic cyst, caused by alteration of reduced enamel epithelium. It shows a male predominance and is reported predominantly associated with unerupted third molars. The most common clinical feature is painless swelling. Radiographic examination reveals a unilocular radiolucent lesion in association with the crown of an unerupted tooth. Treatment of dentigerous cyst often includes enucleation of the cyst. Presentation of dentigerous cyst with pain only is unusual as in our case. Presented here is a case report of 31-years-old male patient who complained of pain in the left lower back tooth region. A detailed clinical, radiographic and histopathological analysis aided in the diagnosis of infected dentigerous cyst.

KEYWORDS: Dentigerous cyst, odontogenic cyst, Enucleation.

INTRODUCTION

Dentigerous cyst can be defined as an odontogenic cyst that surrounds the crown of an impacted tooth; caused by fluid accumulation between

the reduced enamel epithelium and the enamel surface, resulting in a cyst in which crown is located within the lumen.[1] Dentigerous cyst is the most common developmental cyst.[2] The exact cystogenesis of this cyst remains indefinite, but the most probable aetiology is its developmental origin from a tooth follicle.[3] Dentigerous cysts are almost always associated with the crowns of unerupted teeth and are seen attached to the cemento-enamel junction.[4] Less frequently, they can be found in relation with supernumerary teeth,[5] odontomas[6] or unerupted deciduous teeth.[7] Dentigerous cyst is usually painless and delayed eruption of tooth may be first or only clinical sign. The most common clinical feature is painless swelling. Here, we have reported a case of dentigerous cyst where pain was the chief complaint. Careful clinical, radiological and histological findings led to the diagnosis of an occult dentigerous cyst.

CASE REPORT

A 31-years-old male patient reported to the Department of Oral Medicine and Radiology, Dr. Syamala Reddy Dental College, Hospital and Research Centre, Bangalore with the chief complaint of pain in the left lower back teeth region since four days. Pain was sudden in onset, sharp, severe in intensity, continuous in nature with postural variation. Pain aggravated on mastication and relieved on taking medication. The patient also gave the history of associated swelling three days back, which subsided on taking medication. The past dental, medical and surgical history was not contributory.

On extra-oral examination, nothing significant was found. Intra-oral examination revealed partially erupted tooth with inflamed, soft, oedematous pericoronal flap in relation to 38 and there was discharge of pus in relation to the pericoronal flap. The regional lymph node was tender and palpable. With the above findings, it was provisionally diagnosed as acute pericoronal abscess.

Routine radiographic examinations were carried out. Intra-Oral Periapical Radiograph in relation to 38 revealed a well-defined radiolucency along the mesial aspect of the coronal portion extending approximately 2mm below the cemento-enamel junction up to the mesial cusp tip in relation to horizontally impacted 38. The radiolucency was singular, unilocular with roughly oval shape and a corticated boundary. The internal structure was totally radiolucent. Narrowing of inferior dental canal was noted below the radiolucency. However, no root resorption of the adjacent tooth was noted. A mandibular lateral occlusal radiograph

confirmed no cortical expansion in relation to 38 region and orthopantomograph was advised to rule out multiple similar lesions of the jaws.

Extraction of the impacted tooth followed by the surgical enucleation of the cyst, was done under antibiotic coverage and the cystic lining was sent for histopathological evaluation. Histology revealed an odontogenic cystic lining which confirmed the diagnosis of a dentigerous cyst.

Figure 1 &2: Extra-Oral photograph of the patient.

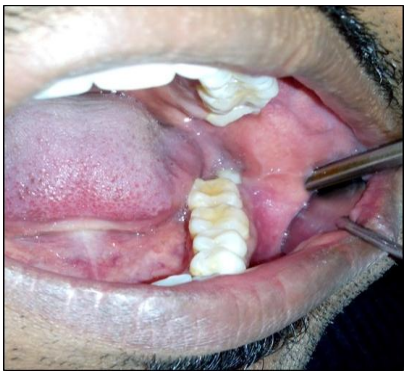

Figure 3: Intra-Oral Photograph showing partially erupted 38 with inflamed pericoronal flap.

Figure 4: Intra-Oral Periapical Radiograph showing dentigerous cyst of lateral variety in relation to horizontally impacted 38.

Figure 5: Mandibular Lateral Occlusal Radiograph showing no cortical expansion.

Figure 6: OPG showing the impacted third molar with the cyst.

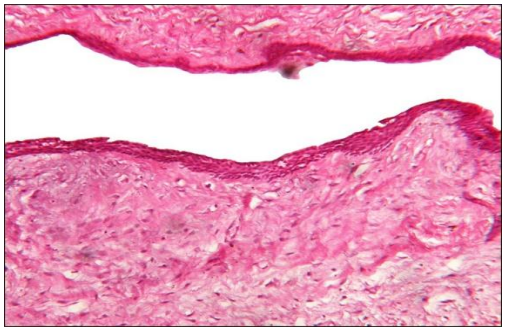

Figure 7: Photomicrograph showing the cystic lesion lined by non-keratinised squamous epithelium.

Figure 8: 1 month post-operative intra-oral clinical photograph.

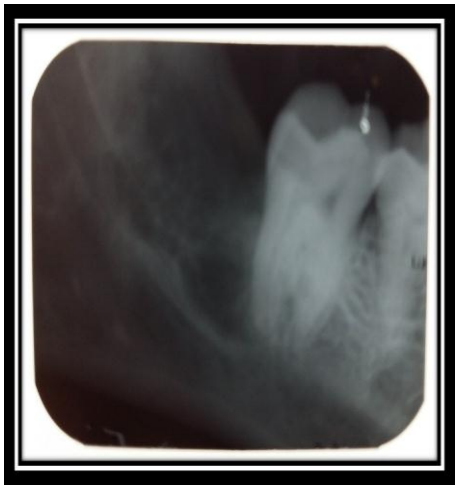

Figure 9: 1 month post-operative Intra-Oral Periapical Radiograph.

DISCUSSION

Dentigerous cyst is the most common pathologic pericoronal radiolucency in the jaws.[8] They are mostly discovered by routine radiographic examinations or by enlargement of the affected region of the jaw.

The pathogenesis of dentigerous cyst is still controversial. Three feasible mechanisms have been proposed for histogenesis of the cyst by Benn and Altini. They proposed that developmental dentigerous cyst might form a dental follicle and might become secondarily inflamed, the source of inflammation being a non-vital tooth. The second mechanism they proposed was formation of a radicular cyst at an apex of a non-vital deciduous tooth followed by eruption of its permanent successor into the radicular cyst resulting in a dentigerous cyst of extrafollicular origin. They also suggested that follicle of permanent successor may get secondarily infected from either periapical inflammation of a non-vital predecessor or other source leading to a dentigerous cyst formation.[3]

Dentigerous cyst accounts for 20% of all the jaw cysts. 10% of impacted teeth form dentigerous cyst and they occur in 8.1% of impacted third molar tooth.[9] They are reported to be significantly more common in males than in females.[10] Shear (1985) reported that dentigerous cyst is more common in whites than black people in Africa and Cabini and colleagues found a male to female ratio of 2:1.[8] The lesion occurs most often in second and third decades of life. Regarding the site, the teeth most frequently affected are mandibular third molars, maxillary canine, mandibular premolar and maxillary third molar in that order.[9] Our case seems to support the age, sex and site predilection given by most of the authors.

This case shows a solitary cyst which is a usual finding. Bilateral and multiple cysts are usually found in association with a number of syndromes such as Maroteaux-Lamy syndrome and Cleidocranial dysplasia.

The cysts vary greatly in size, from less than 2cm to massive expansion of the jaws. Cysts which extend from one angle of the jaw to the other, there may be one tooth in the cavity or there may be two or more, usually greatly displaced from their normal position and often lying on the floor of the cavity, in the site (as in our case) or even the roof of the cyst. It is common for the tooth to be horizontal,[11] as in our case.

Sapphire (2009) reported that dentigerous cyst with large extension may have the potential for expansion of the cortical bone, which can lead to paraesthesia of the inferior alveolar nerve, when present in the mandibular region.[8] Costal et al. stated that development of dentigerous cyst has serious complications such as tooth impaction, ectopic eruption, facial asymmetry, displacement and root resorption of teeth[12] and even facial oedema due to cortical expansion by large cyst.[13]

Clinically, dentigerous cyst occurs most often as painless alveolar swelling.[3] Sometimes, the cyst is associated with pain.[14] Pain usually indicates presence of infection. It rarely expands rapidly to produce pain by pressure on sensory nerve. Our case also presented with pain due to infection.

Radiologically, dentigerous cyst classically consists of a well corticated pericoronal radiolucency, which exceeds 3 mm when measured from the edge of the crown to the periphery of the lesion on panoramic radiograph and 2.5 mm on periapical radiograph. The cystic cavity often originates from the cervical region of the tooth.[8] There are three radiologic variants of Dentigerous cyst: Central, Lateral and Circumferential. The dentigerous cysts that are eccentric and develop from the lateral aspect of the follicle, occupy an area beside crown instead of above the crown,[15] as in our case.

Histologically, dentigerous cyst consists of a fibrous wall that may contain young fibroblasts widely separated by stroma and ground substance rich in mucopolysaccharides. The cyst lining is non-keratinized stratified squamous epithelium.[16,17] The histology of our case corroborates the same findings.

Treatment option of dentigerous cyst includes enucleation via Caldwell-Luc procedure under local or general anaesthesia which has been the standard treatment, along with extraction of the associated tooth. In large cysts, an initial marsupialization to diminish the size of the osseous defect, followed by enucleation and tooth extraction, has been advocated. Marsupialization might also offer an opportunity for the permanent tooth to erupt in the oral cavity. Endoscopic approach for management of dentigerous cyst of the maxilla is also described in the literature.[18] Our case was treated by enucleation of the cyst with removal of the impacted tooth under antibiotic coverage, as it was hopelessly malposed and had no chance to erupt into the oral cavity.

CONCLUSION

Dentigerous cysts are benign odontogenic cysts associated with the crowns of unerupted permanent teeth and have more affinity for mandibular third molar region. Despite their benign nature, it must be kept in mind that some untreated dentigerous cyst may grow large and may have the potential to develop into an odontogenic tumour like ameloblastoma or become malignant as oral squamous cell carcinoma and mucoepidermoid carcinoma.[19] Thus, early recognition of the entity and removal of the occult cyst is important to reduce morbidity.

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