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# Dentigerous Cysts Associated with Impacted Third Molar: A Case Report

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## I. INTRODUCTION

Dentigerous cyst or Follicular Cyst is a developmental 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 the crown is located within the lumen.[1] This is one of the most common developmental odontogenic cyst, accounting for around 14-20% of all jaw cysts.[1-3] This is mainly seen in relation to maxillary and mandibular third molars followed by maxillary cuspids as these are the most commonly impacted teeth in the oral cavity.[1] Generally discovered on routine radiographs or when radiographs are taken to determine the cause of failure of eruption of a particular tooth, its frequency remains 1.44 per 100 unerupted teeth.

Most dentigerous cysts are initially asymptomatic, but within the jaw may attain significant sizes with thinning of the inferior border of the mandible , resorption of roots of adjacent teeth till it becomes evident clinically. Treatment involves extraction of the teeth , alongwith the associated cystic lining. Prognosis is excellent and recurrence is seldom seen if completely removed.

## II. DISCUSSION

Dentigerous cysts(DC) are the second most common cysts of the oral cavity(next to Radicular cysts) and the most common developmental odontogenic cyst in the jaws. It is estimated that about 10% of impacted teeth have formed a dentigerous cyst. The cyst nearly always involves or is associated with the crown of a normal permanent tooth and rarely is a deciduous tooth involved.[1]

As with other cysts, expansion of the dentigerous cyst is related to epithelial proliferation, release of bone-resorbing factors, and an increase in cyst fluid osmolality.[5] As the cysts continuously expand , it can have possible sequelae like expansion of bone with subsequent facial asymmetry, resorption and displacement of teeth, and less commonly pain.[1] The cells of the cyst can keep proliferating and may lead to serious complications like thinning of the inferior border of the mandible leading to pathological fractures, development of Ameloblastoma , Epidermoid carcinoma (from the lining epithelium or rests of odontogenic epithelium in the wall of the cyst), Mucoepidermoid carcinoma(inclusion of normal salivary gland in posterior portion of body of the mandible)[1]

In majority of the cases , the radiographic presentation may be of a unilocular radiolucent cyst of varying size. A clear cut distinction is difficult between the size of an enlarged follicle and a dentigerous cyst. While a normal follicle space is 3-4mm , dentigerous cyst can be suspected when the space is more than 5mm.[1]

Three radiological variations of the dentigerous cyst may be seen namely Central, Lateral or Circumferential. Central variety envelopes the crown symmetrically and may push the crown away from its path of eruption. Lateral variety involves dilatation of the follicle on one aspect of the crown (case 1). Lastly, circumferential type exists when the follicle expands in a manner in which the entire tooth appears to be enveloped by the cyst.

In the present cases, the cysts had a unilocular radiolucency as seen in the Orthopantomogram. The differential diagnosis of DC includes Keratocystic odontogenic tumor( KCOT), Adenomatoid odontogenic tumor(AOT) , Calcifying epithelial odontogenic tumor(CEOT), and unicystic ameloblastoma.[6]

Although DC presents itself as single and unilateral lesion, multiple and bilateral cysts are not uncommon but majority of them are seen associated with syndromes such as basal cell nevus syndrome, mucopolysaccharidosis and cleidocranial dysplasia , Maroteaux-Lamy syndrome.

There are no characteristic microscopic features which can be reliably used to differentiate Dentigerous from other types of odontogenic cysts. It is usually composed of a thin connective tissue wall with a thin layer of stratified squamous epithelium lining the lumen with absence of retepegs(usually unless secondarily infected). The pleuripotentiality of the epithelium has been emphasized beautifully by Gorlin in mandibular cysts , who described cells secreting mucus in the stratified squamous lining, respiratory epithelial lining, sebaceous and lymphoid cells in the connective tissue wall.[1] Sometimes, Rushton bodies(not specific to

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DC but seen in inflammatory cysts) maybe seen which are linear or curved hyaline bodies with variable stainability, uncertain in origin and significance is unknown.

Treatment for a cyst is determined by its etiology and localization, which, on the one hand, means that the causal tooth must be treated or removed and on the other that the cystic lining, which secretes the cystic content, must be excised.[7] This statement fits well with the treatment characteristics of a dentigerous cyst.

Among various surgical treatment modalities to treat a dentigerous cyst, enucleation of the cyst is the most widely accepted procedure. Marsupialization is another treatment modality, which is usually employed for large dentigerous cysts due to its significant size, possibility of destruction of the surrounding tissue and concern for the potential of a pathologic fracture.[12]

Although the well-considered modality, marsupialization satisfies certain therapeutic requirements in such large lesions, it has significant drawbacks such as slow healing and cicatrization.[12] Moreover, this procedure is hard to rely on when treating a dentigerous cyst because it is difficult to maintain patency in a bony lesion. Also, a lateral window could drive the developing permanent dentition toward ectopic eruption, resulting in malocclusion and creating a potential need for further interceptive orthodontics.[7-9] However, the treatment, prognosis and cure rates in such large dentigerous cysts are all dependent upon the various factors such as growth characteristics, anatomic site, clinical extent size, age, gender, etc. Various studies have shown predictable spontaneous bone regeneration in young patients after enucleation of such large cysts. Many authors believe that bone grafting in young patients should be considered carefully and in most of the instances it is unnecessary.[11]

## III. CONCLUSION

We have observed in our present cases , enucleation may be necessary in such patients provided the proper preoperative diagnosis and meticulous surgery is carried out. Conversely, the technique chosen largely depends on the surgeon, as even the best technique will not be satisfactory if incorrectly carried out and our case is not an exception. As with any lesion, early recognition and prompt treatment go a long way in helping the patients live a disease free life, recognize potential hazards and treating them on the spot before this disease could progress and cause life threatening complications and create unnecessary havoc for the patient and his relatives.

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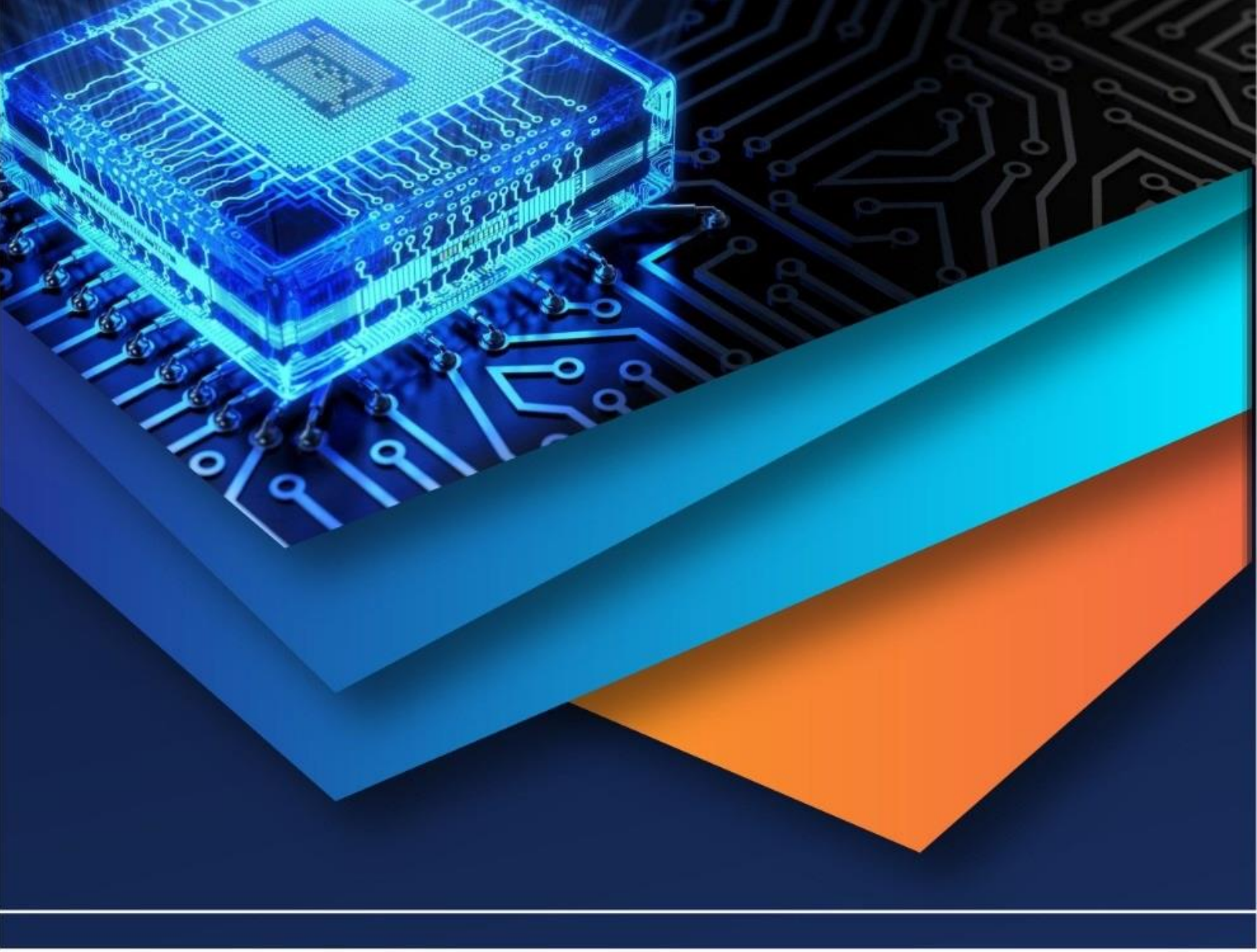

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