Journal of Population Therapeutics & Clinical Pharmacology

RESEARCH ARTICLE
DOI: 10.53555/jptcp.v30i5.4310

DENTIGEROUS CYST: A CLINICAL CASE REPORT

Dr.Ilayanila.C[1*], Dr.Sarah Samsu Nisha K[2], Dr.Santhosh Kumar.N[3], Dr.Sathya.D[4], Dr.Karthika P. Mds[5], Dr.Sathishkumar M. Mds[6]

[1*]Postgraduate, Oral And Maxillofacial Pathology And Oralmicrobiology, Karpaga Vinayaga Institute Of Dental Sciences
[2]Cri Oral And Maxillofacial Pathology And Oralmicrobiology, Karpaga Vinayaga Institute Of Dental Sciences
[3]Cri, Oral And Maxillofacial Pathology And Oralmicrobiology, Karpaga Vinayaga Institute Of Dental Sciences
[4]Cri, Oral And Maxillofacial Pathology And Oralmicrobiology, Karpaga Vinayaga Institute Of Dental Sciences
[5]Professor, Oral And Maxillofacial Pathology And Oralmicrobiology, Karpaga Vinayaga Institute Of Dental Sciences
[6]Head Of The Department, Oral And Maxillofacial Pathology And Oralmicrobiology, Karpaga Vinayaga Institute Of Dental Sciences

***Corresponding Author: Dr.** Ilayanila.C
*Karpaga Vinayaga institute of dental sciences, Chengalpet , Tamilnadu-603308.

ABSTRACT
Dentigerous cyst is the most common type of non-inflammatory odontogenic cyst involves the crown of impacted teeth and causes fluid accumulation between the follicular epithelium and crown of the tooth. Large dentigerous cysts may occasionally be a sign of more severe diseases. Here we present an interesting case of a dentigerous cyst in 22 years old male patient involving unerupted permanent left mandibular third molar with an insight into differential diagnostic entities of dentigerous cyst. Upon thorough investigation dentigerous cyst was confirmed.

Keywords: Impacted tooth, cyst, Eruption, Dental follicle

INTRODUCTION:
Dentigerous cyst is the most common form of developmental odontogenic cyst most commonly associated with the ectopic tooth eruption,"is a condition in which the malposition of permanent teeth occurs due to the deficiency in growth of jaw or a jaw segment that intercepts a eruption of primary teeth and causes premature loss. Dentigerous cyst is most commonly presented with the mandibular wisdom tooth, also known as the impacted tooth followed by the maxillary canine which is second most prevalent. But it can also be linked to ectopic or supernumerary teeth[1,2,3]. Radiographs show a unilocular, radiolucent lesion characterized by well-defined sclerotic margins and associated with the unerupted tooth While a normal follicular space is 3-4 mm, a dentigerous cyst can be suspected when the follicular space is more than 5 mm[4,5]. Here we present a case of dentigerous cyst in 22 years old male patient which involves impacted left mandibular third molar.

CASE REPORT:

A 22 years old male patient visited the department of oral and maxillofacial surgery with the chief complaint of pain and swelling in the left side of face for past 10 days. Patient was apparently normal before 10 days, later he developed pain in the left side of the face which is intermittent, dull throbbing, non radiating and nocturnal pain, aggrevated on mastication and relieved by medication and rest, also associated with swelling, which was gradual in onset, slowly increased in size to attain the current size. Patient also had a history of numbness over lower lip region. The medical and family history were non-significant and the patient was healthy. On Extraoral examination, facial asymmetry was present. On palpation, A diffuse swelling was present on the lower left mandibular region extending anteriorly from ala of the nose to tragus of ear posteriorly, superiorly from infra orbital rim and inferiorly to lower border of the mandible. On palpation, tenderness was present, soft in consistency, warmth in temperature and skin over the swelling was pinchable.

FIGURE 1

FIGURE 2

Intraorally, other than fractured tooth in upper right back tooth region no other significant findings were noted. Patient had a history of restricted mouth opening of 9mm for past 10 days. A panaromic radiograph displays a unilocular radiolucent spot on the left lower mandibular 38 region along with a thin sclerotic border.

FIGURE 3

Biopsy was then performed using excision, and the sample was sent for analysis to the department of oral and maxillofacial pathology.
Following radiological and clinical evaluation, the dentigerous cyst was tentatively diagnosed.
Differential diagnosis includes ameloblastoma, odontogenic keratocyst, and large periapical cyst.

Excisional Biopsy was performed and the collected tissue sample was preserved in neutral buffered formalin (10%). On examination, the tissue surface was irregular, soft and appears grey brown to grey white and measures about 1.5x0.8x0.3 cm approximately.

FIGURE 4: Tissue fragments with the involved tooth

On microscopic examination, sections studied shows tissue lined by variable squamous epithelium, attenuated to hyperplastic with interconnecting elongated rete ridges. Underlying dense fibroconnective tissue which appears myxoid, at places shows marked congestion along with diffuse infiltration by lymphocytes, plasma cells, eosinophils and neutrophils forming microabscesses. Admixed are seen areas hemorrhagic necrosis and calcified foci.

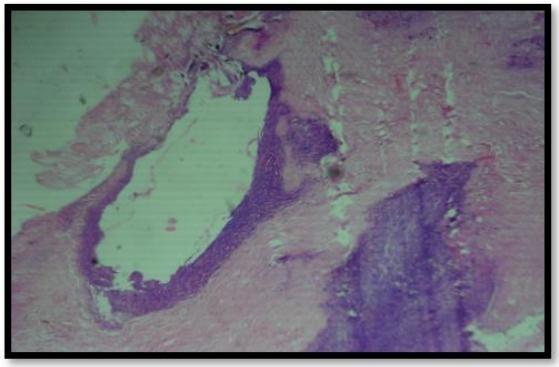

FIGURE 5 [4X]

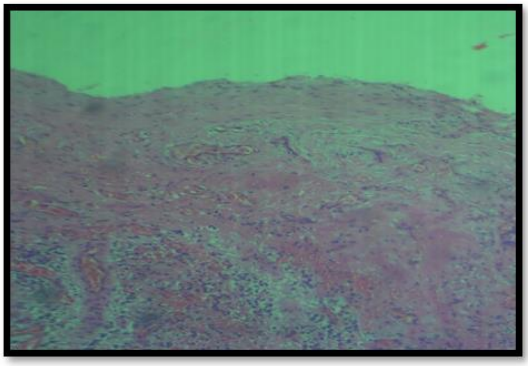

FIGURE 6[10X]

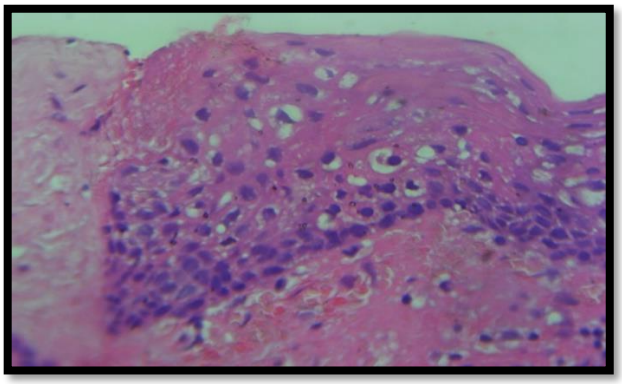

FIGURE 7[40X]

(**FIGURE 5:** Squamous epithelium, attenuated to hyperplastic with interconnecting elongated rete ridges.
FIGURE 6: Fibroconnective tissue which appears myxoid, at places shows marked congestion.
FIGURE 7: Diffuse infiltration by lymphocytes, plasma cells, eosinophils and neutrophils.
Admixed are seen areas hemorrhagic necrosis and calcified foci)

DISCUSSION:

Dentigerous cyst can be characterized by expansion of the follicle, adhesion to the cementoenamel junction of the impacted tooth and encloses the crown of an impacted tooth. Most commonly it occurs at second and third decades of life. Most common among children and adolescents and shows a male predilection[6]. Unilateral dentigerous cysts are a highly prevalent type of odontogenic cyst. Typically, standard radiography examinations are used to detect it. The mandibular third molars and maxillary permanent canine are involved in the vast majority of dentigerous cysts followed by maxillary third molars, mandibular premolars, and infrequently the maxillary premolars.

PATHOGENESIS:

When a tooth erupts, pressure builds up on an impacted follicle, preventing venous outflow and causing serum to transude across the capillary wall more quickly. This is the cause of the fluid accumulation in the dentigerous cyst. Nonkeratinized stratified squamous epithelium lines these cysts.

CLINICAL FEATURES:

Dentigerous cyst include painless, slowly developing swelling in the afflicted location and transient tooth persistence. Most dentigerous cyst are solitary. Bilateral and multiple cysts are usually found in association with a number of syndromes including cleidocranial dysplasia and Maroteaux-Lamy syndrome. Expansion of bone with subsequent facial asymmetry, extreme displacement of teeth, severe root resorption of adjacent teeth and pain are all possible sequelae brought about by continuous enlargement of the cyst. It causes inferior alveolar nerve parasthesia and further leads to lip numbness. On radiographic examination reveals a radiolucent area assosciated with an unerupted tooth crown. Follicular spaces greater than 5 mm are suspected of being dentigerous cysts. The lesion is connected to the crown of an unerupted tooth and appears to be radiolucent, unilocular, and with well-defined sclerotic margins. Dentigerous cysts have the potential to cause root resorption and displacement of the adjacent tooth.

Radiological variations of dentigerous cyst includes central, lateral and circumferential. In central variety, the crown is enveloped symmetrically. The lateral type of dentigerous cyst is a radiographic appearance which results from dilatation of the follicle on one aspect of crown. The circumferential dentigerous cyst results when the follicle expands in a manner in which the entire tooth appears to be enveloped by cyst.

In this instance, the patient was male and the cyst was observed in relation to an impacted 38, which is gradual, unilateral, and slow-growing. On palpation the cyst is soft and tenderness.

HISTOPATHOLOGIC FEATURES:

Dentigerous cyst composed of a thin connective tissue wall with a thin layer of stratified squamous epithelium lining the lumen. Rete peg formation is generally absent except in cases that are secondarily infected. The connective tissue wall is frequently quite thickened and composed of a very loose fibrous connective or of a sparsely collagenized myxomatous tissue along with inflammatory cell infiltration. Rushton bodies are present within the lining epithelium only in case which exhibits inflammation. The cyst lumen is usually a thin, watery yellow fluid, sporadically blood tinged. Ultimately, surgery is used to treat the cyst. Anesthesia is administered broadly for the enucleation of the cyst. Additionally, the 38 associated teeth are removed.

TREATMENT:

Most commonly used treatment options are complete enucleation and marsupilization with removal of the associated tooth. Enucleation of the cyst was the treatment plan of our case. Cystic lining was identified and removed. Involved impacted third molar was removed. Inferior alveolar nerve bundle preserved and the cystic wall checked for epithelial remnants. Saline irrigation done and AB gel placed. Wound closure done using 3-0 vicryl.

CONCLUSION:

Depending upon the lesion size, age, location and stage of root development, treatment plan may vary as enucleation, marsupialisation and decompression[7,8]. In the present case we reported a non-inflammatory dentigerous cyst assosciated with impacted mandibular third molar. The case was successfully treated with no complications post operatively. Early diagnosis and treatment should be done as untreated cases of dentigerous cyst can lead to complication such as, bone deformation, loss of permanent tooth and may also develop into odontogenic tumours and carcinoma.

REFERENCE:

1. Arici M, Bayar T, Tas-Ozyurtseven B, Gungormus M. Bilateral ectopic third molars in maxillary sinus associated with dentigerous cyst identified with ophthalmic, nasal and maxillary complication: Arare case report. Oral Maxillofac Pathol 2022;26:S84-7
2. Girish G, Mahesh Kumar R, Umashankar DN, Sharma R, Veeresh M, Bhandari A. Dentigerous cyst in maxillary sinus: A rare occurrence. Int J Oral Maxillofac Pathol 2011;2:20-3
3. AlKhudair B, AlKhatib A, AlAzzeh G, AlMomen A. Bilateral dentigerous cysts and ectopic teeth in the maxillary sinuses: A case report and literature review. Int J Surg Case Rep 2019;55:117-20
4. Avinash Tamgadge, Sandhya Tamgadge, Daivat Bhatt, Sudhir Bhalerao, Treville Pereira, Mukul Padhye. Bilateral dentigerous cyst in a non-syndromic patient: Report of an unusual case with review of the literature: Journal of Oral and Maxillofacial Pathology: Vol. 15 Issue 1 Jan - Apr 2011
5. Neville BW, Damm DD, Allen CM, Bonquot JE, Odontogenic cysts and tumors. Oral and Maxillofacial pathology. 2nd ed. Philadelphia. P.A.: W.B. Saunders; 2005. p. 591-2.
6. Rajendran R Sivapathasundharam B Shafer WG. Shafer's Textbook of Oral Pathology. 6th ed. Elsevier/Reed Elsevier; 2009.
7. K.K. Deepa, Anubhav Jannu, Mithun Kulambi, H.S. Shalini :A case of dentigerous cyst in a pediatric patient - With an insight into differential diagnostic entities,Advances in Oral and Maxillofacial Surgery,Volume 3,2021,100130,ISSN 2667-1476,https://doi.org/10.1016/j.adoms.2021.100130.
8. Reyes JMV, Bermúdez JAE, Ruisánchez YEG. Dentigerous cysts: Case report. J Adv Oral Res 2016;7(1):41-45.