Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies ***NLM ID:*** *101716117*

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr Indian Citation Index (ICI) Index Copernicus value = 100.00

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

CASE REPORT

Dentigerous Cyst Associated With An Impacted Third Molar: A Case Report

Pooja Nagpal[1], Akanksha Kumari[2], Vikas Patial[3], Deeksha Sharma[4]

[1]PG Student, Department of Oral Medicine and Radiology, HP Government Dental College, Shimla
[2]MDS (Private Consultant), Department of Oral Medicine and Radiology, Himachal Pradesh
[3]MDS (Private Consultant), Department of Oral Medicine and Radiology, Himachal Pradesh
[4]PG Student, Department of Oral Medicine and Radiology, HP Government Dental College, Shimla

ABSTRACT
A dentigerous cyst (DC) is a developmental odontogenic cyst involving the crown or a portion of the crown of an unerupted or impacted tooth. Mandibular third molars are the most commonly implicated teeth with dentigerous cyst. These cysts are discovered unexpectedly on routine radiographic examination since DCs are asymptomatic unless after an infection. Decompression by simple marsupialization and extended follow-up are important roles in bone deposition and reduction of the cyst. Furthermore, surgical extraction can be performed non-traumatically for the cyst-associated tooth. One such case has been described in this report in which the treatment of choice of was marsupialisation along with extraction of the involved tooth.
Keywords: Dentigerous cyst, Developmental Odontogenic cyst, Marsupialisation

Received: 14, April 2023 Accepted: 18 June, 2023

Corresponding Author: Dr. Akanksha Kumari,

This article may be cited as:. Nagpal P, Kumari A, Patial V, Sharma D. Dentigerous Cyst Associated With An Impacted Third Molar: A Case Report. A. J Adv Med Dent Scie Res 2023;11(7):44-50

INTRODUCTION

Dentigerous cysts (DC) are the second most common odontogenic cysts after radicular cysts, accounting for 37.9% - 84.5% of all odontogenic cysts. The crown or a portion of the crown of an unerupted or impacted tooth is surrounded by a Dentigerous cyst.[1] The incidence of DCs is highest in the second and third decades of life. This cyst is usually rare in the first decade. For this reason, when it comes to diagnosis in young patients, it is usually difficult to state a definitive diagnosis without a pathological and radiographic diagnosis. DC is caused by an alteration of the reduced enamel epithelium (after completion of amelogenesis) that results in fluid accumulation between it and the enamel of the crown.[2] Dentigerous cyst, because it is usually asymptomatic, is sometimes recognized after it has expanded into the alveolar bone and has led to destruction.[3]On radiographic examination, a dentigerous cyst usually appears as a well-demarcated unilocular radiolucency, surrounding the crown of an unerupted tooth.[2]The cyst lining has non-keratinize dstratifie dsquamous epithelium .Enucleation or Marsupialization can be used to treat Dentigerous cysts.[4]It is important to choose a safe treatment in young individuals and avoid surgical approaches that lead to esthetic, functional, and psychological problems if facial defects occur. The decompression of large cysts was outweighed when the cyst is large to avoid the previously mentioned drawbacks of enucleation. Whenever these cysts are detected in a late stage, they are usually treated by enucleation followed by the extraction of the involved tooth.[1]

CASE REPORT

A 24-year-old male patient visited the department of Oral Medicine and Radiology, H.P Government Dental College, Shimla with a chief complaint of pain and swelling in the lower left back region of jaw during chewing for 2 months. Patient gave the history

of swelling in the left mandibular 3rd molar and retromolar region. Swelling was insidious in onset, small in size. Swelling was accompanied with pain after 1 month. Pain was dull and throbbing in nature causing inability to chew from left side and relieved on taking manalgesics. Extraorally, the face appeared bilaterally symmetrical with no facial expansion in the region of the left mandibular third molar with no signs of tenderness palpated. (FIG 1) An intraoral examination revealed a soft tissue swelling in left mandibular third molar region and left muco buccal fold extending anteriorly up to first molar. There was also expansion of buccal cortical plate evident. (FIG 2) On palpation, tenderness along with active pus discharge from the third molar region were present.There was no crepitus elicited.On the basis of patient's complaint and clinical examination, the provisional diagnosis was arrived as Infected dentigerous cyst.Differential diagnosis included Odontogenic keratocyst, ameloblastoma and radicular cyst.On IOPAR,(FIG 3) there was a radiolucency distal to second molar region in a homogenous pattern showing the absence of a trabeculae.There was resorption of the alveolar process and anterior border of the ramus aroundretromolar region. A well-definedradiopacity suggestive of the crown portion of third molar was also seen displaced inferiorly. The radiopacity of root of second molar was normal and did not indicate any resorption.The panoramic radiograph (FIG 4) showeda unilocular lesion with scalloped border of size 3.9x3.7 cm extending anteriorly from the distal root of left mandibular second molar and extending posteriorly 1cm ahead of the posterior border of the ramus, superiorly 2 cm below the depth of sigmoid notch and inferiorly extending 1 cm above the angle of mandible. There was displacement of third molar to the inferior border of the mandible. There was also resorption of the lingual cortical plate of left mandibular third molar region.The mandibular canal also seemed to be displaced inferiorly when compared to the contralateral side. There was no evidence of root resorption.Axial CBCT section(FIG 5) of the mandible had a radiolucent lesion in the left mandibular body and ramus region. It presented expansion of the Bucco-lingual cortical plate.The crown portion of third molar seemed to be circumscribed within the radiolucent lesion.Coronal section (FIG 6) of the mandible also showed a break in the continuity of the lingual cortical plate.Reformatted Cone-beam computed tomography image(FIG 7) of the lesion showed a through and through perforation in the mandibular left ramus region.Biopsy analysis (FIG 8a and 8b) confirmed a typical dentigerous cyst lined by non-keratinized squamous epithelium with mild inflammatory cellular infiltration in the connective tissue with no dysplastic changes.On the basis of clinical, radiographic and histopathological examination a final diagnosis of Dentigerous cyst was made. The choice of treatment in this case was marsupialization of the cyst along with the extraction of left side mandibular third molar due to its large size. Patient was referred to the department of Oro-Maxillofacial surgery for treatment. Figure 9 showed post operative Orthopantomogram of patient.

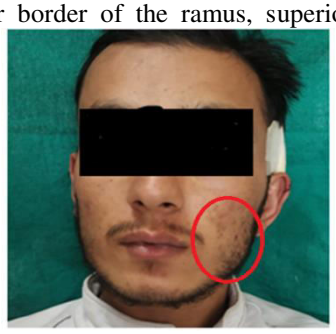

FIG 1

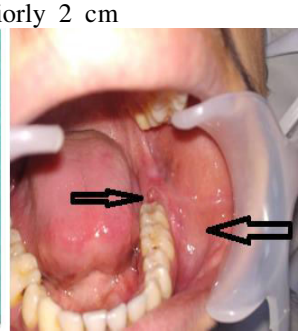

FIG 2

FIG 3

FIG 4

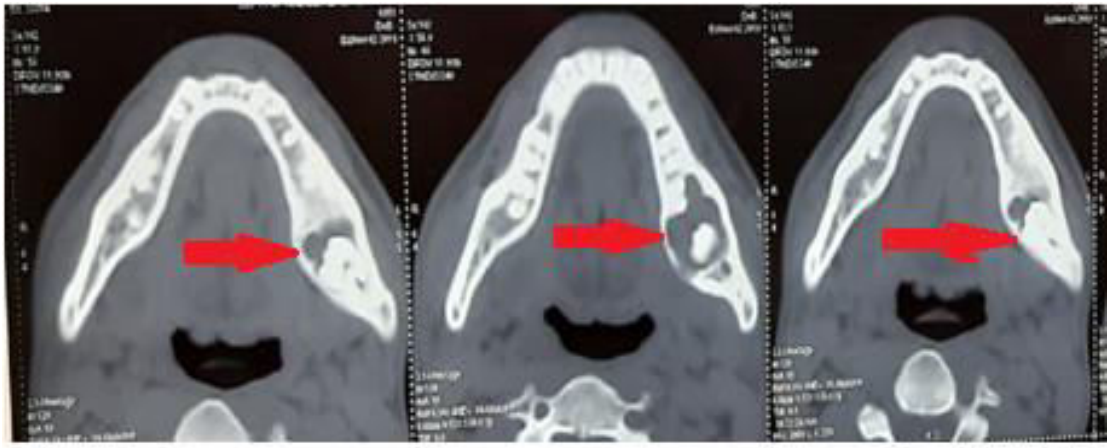

FIG 5

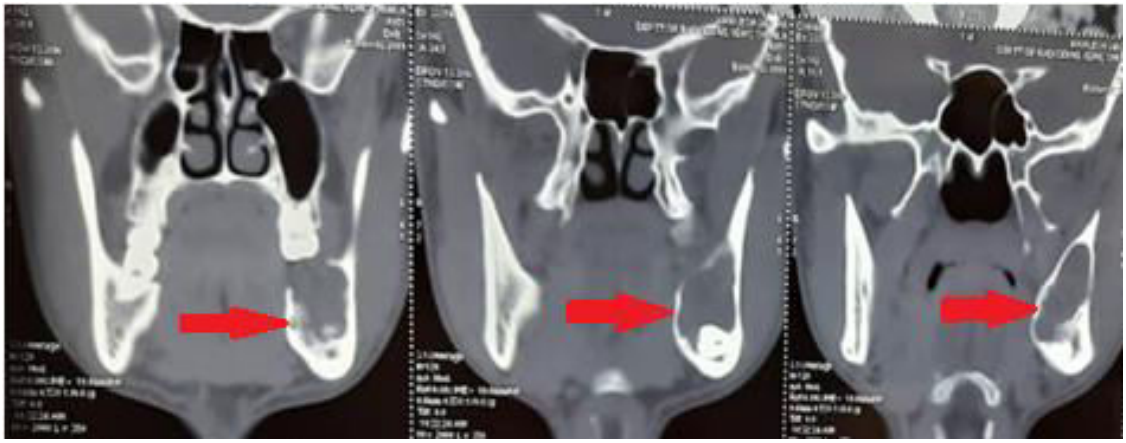

FIG 6

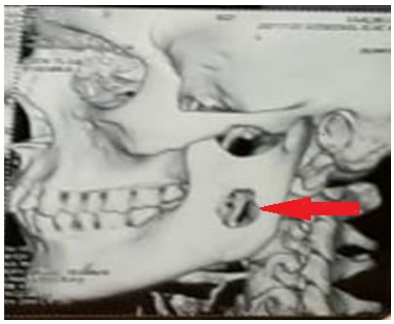

FIG 7

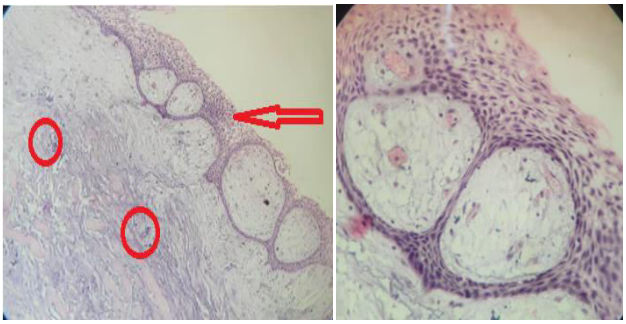

FIG 8a and 8b

FIG 9

DISCUSSION

The most common type of developmental odontogenic cyst is a dentigerous cyst. Benn A, Altini M. classified dentigerous cyst as an inflammatory cysts and developmental cysts.[6] Developmental Dentigerous cysts typically occur as a result of impaction in mature permanent teeth and occur most commonly in the mandibular third molars and more common in males and more common in 2nd and 3rd decades of life.[6] These findings are consistent with our case, as we ha e male patient aged 24 years with dentigerous cyst associated with mandibular 3rd molar. Patients with Dentigerous cyst does not experience any pain unless it becomes infected or inflamed anit can result in cortical expansion which causes facial asymmetry. According to the study done by Koca*et al*. which suggested that 70% of the patients with a dentigerous cyst complained about a swelling and, 5% experienced pain whereas 25% of the patients had no symptoms.[7]In this case pain during chewing and swelling with pus discharge with buccal cortical expansion was clear.Dentigerous cyst usually presents as a well-defined, unilocular radiolucent lesion without any marked clinical symptoms. One should include the radicular cyst, odontogenic keratocyst, ameloblastomaand odontoma as a differential diagnosis.[7] Marsupialization and complete enucleation are treatment of choice for dentigerous cyst. Complete enucleation of the cyst along with extraction of the tooth may be the first choice of treatment. Marsupialization which is a more conservative option, may be considered, if preservation of displaced teeth is desired. The procedure of marsupialization can be performed under local anaesthesia. A window is formed on the cystic wall, the cyst fluid is evacuated then the cystic lining should be sutured to the oral mucosa. These steps cause decompression that lowers intra-cystic pressure and encourages the bone formation and decreases the size of the cystic cavity.[5] Marsupialization is the preferred therapy for large cysts adjacent to vital structures such as the maxillary sinus and inferior alveolar nerve.[1] However, the disadvantages of marsupialization are the long postoperative duration of treatment and the discomfort of leaving the wound open.[2]

CONCLUSION

This case report shows the necessity for early diagnosis and treatment of a dentigerous cyst associated with an impacted tooth.Marsupialization is an effective surgical technique, even for an infected cyst. The patient must understand the importance of good oral hygiene in such cases for a satisfactory treatment.

REFERENCES

1. Abu-Mostafa N. Marsupialization of Dentigerous Cysts Followed by Enucleation and Extraction of Deeply Impacted Third Molars: A Report of Two Cases. Cureus. 2022 Apr 2;14(4):e23772. doi: 10.7759/cureus.23772. PMID: 35530855; PMCID: PMC9067614.
2. Aoki, N., Ise, K., Inoue, A. *et al.* Multidisciplinary approach for treatment of a dentigerous cyst – marsupialization, orthodontic treatment, and implant placement: a case report. *J Med Case Reports* **12**, 305 (2018). https://doi.org/10.1186/s13256-018-1829-2
3. Layal Ghandour, Hisham F. Bahmad, Samar Bou-Assi, "Conservative Treatment of Dentigerous Cyst by Marsupialization in a Young Female Patient: A Case Report and Review of the Literature", *Case Reports in Dentistry*, vol. 2018, Article ID 7621363, 6 pages, 2018. https://doi.org/10.1155/2018/7621363
4. L. T. Friedlander, H. Hussani, M. P. Cullinan et al., "VEGF and VEGFR2 in dentigerous cysts associated with impacted third molars," *Pathology*, vol. 47, no. 5, pp. 446–451, 2015
5. R. Fujii, M. Kawakami, M. Hyomoto, J. Ishida, and T. Kirita, "Panoramic findings for predicting eruption of mandibular premolars associated with dentigerous cyst after marsupialization," *Journal of Oral and Maxillofacial Surgery*, vol. 66, no. 2, pp. 272–276, 2008.
6. Arakeri G, Rai KK, Shivakumar HR, Khaji SI. A massive dentigerous cyst of the mandible in a young patient: a case report. PlastAesthet Res 2015;2:294-8.
7. Koca H, Esin A, Aycan K. Outcome of dentigerous cysts treated with marsupialization. J Clin Pediatr Dent. 2009 Winter;34(2):165-8. doi: 10.17796/jcpd.34.2.9041w23282627207. PMID: 20297710.