

## CASE REPORT



## Dentigerous cyst associated with an ectopically erupted mandibular third molar: A case report

Sunil Vasudev, G. R. Maneeshashree, M. S. Sahana, Partha Pratim Debnath

Department of Oral and Maxillofacial Surgery, DAPM RV Dental College, Bengaluru, Karnataka, India

**Keywords:**

Dentigerous cyst, Enucleation, Ramus, Third molar

**Correspondence:**

Sunil Vasudev, Department of Oral and Maxillofacial Surgery, DAPM RV Dental College, Bengaluru, Karnataka, India.  
E-mail: sunilvasudevomfs@gmail.com

Received: 27 May 2020;

Accepted: 29 June 2020

doi: 10.15713/ins.jcri.301

**Abstract**

Dentigerous cyst contributes around 20–24% of all the odontogenic cysts of jaw and is the second most common odontogenic cyst affecting the jaw bone. The prevalence of dentigerous cysts involving the permanent ramus is just 1.5%. Radiologic evaluation of the cystic lesion is compulsory to decide the duration of decompression for large lesion, the time of enucleation, and also to evaluate the time required for the new bone formation. In this case report, we present a case of a dentigerous cyst associated with ectopically erupted mandibular third molar in close proximity to the posterior border of the mandibular ramus which was treated by enucleation procedure under general anesthesia.

**Introduction**

Dentigerous cyst contributes around 20–24% of all the odontogenic cysts occurring in jaws and is the second most common odontogenic cyst affecting the jaw bone.<sup>[1]</sup> The dentigerous cyst encloses the cement enamel junction crown of an unerupted tooth. The cyst can grow up to a significant size, and large cyst may cause a painless expansion of the involved bone. Radiographic appearance of the cyst can be presented as a unilocular radiolucent area associated with the crown of an impacted tooth with well-defined margin.<sup>[2]</sup> Radiologic evaluation of the cystic lesion is compulsory to decide the duration of decompression for large lesion, the time of enucleation, and also to evaluate the time required for the new bone formation. In this paper, we present a case of a dentigerous cyst associated with ectopically erupted mandibular third molar close to the posterior border of the ramus.

**Case Report**

A 39-year-old male patient reported to department of oral and maxillofacial surgery with the complaint of pain and swelling on the right side of face. Pain was sudden in onset, continuous in nature, aggravated on eating food, relieved on medication. On clinical examination, the patient was medically fit with no relevant medical history or any history of drug allergy. Extraoral

examination no significant changes noted [Figure 1]. On intraoral examination, it revealed restricted mouth opening of two finger breadths and clinically missing tooth 48. The buccal vestibule was obliterated and overlying mucosa distal to 47 was erythematous in nature; palpation revealed expansion and bulging of the lingual cortical plate with tenderness on the same region [Figure 2]. Radiographically, it showed a large unilocular radiolucency with well-defined margins measuring about 3 cm



Figure 1: Pre-operative profile

× 3 cm encircling the crown of ectopically placed third molar close to the posterior border of the ramus, with regions of lingual cortical plate perforation, extending from the cystic cavity up to the anterior border of the ramus distal to second molar making it susceptible to pathologic fracture of the mandibular ramus. The long axis of 48 is perpendicular to the long axis of 47 suggestive of horizontal impaction [Figure 3]. The total length of the tooth is 18.2 mm. The roots are completely formed and are fused at the apical region. The apex of roots is seen dilacerated toward the posterior aspect of the ramus. No ankylosis or root resorption noted. Cone-beam computed tomography (CBCT) revealed presence of a large osteolytic lesion involving the right side of mandible, extending from the distal region from the alveolar crest of 47 involving the body, angle, and ramus, and was around 3 cm × 3 cm in dimensions, 48 was ectopically impacted and approximating the posterior border of mandibular ramus. Expansion of the lingual cortical plate was evident on the CBCT. Considering the clinical and various radiographical examinations, a provisional diagnosis was made as dentigerous cyst wrt. 48. General anesthesia achieved with the left nasal intubation, lidocaine with 2% adrenaline administered locally. Extended Ward's incision placed from mesial to 46 extended posterolaterally into ascending ramus to mucosa of subperiosteum. Incised and reflected laterally bony lesion noted

and felt 1 cm lingual side of mandibular ramus. Marking made approximately 5 mm above the occlusal level of 47 and extended to anterior margin of bony bulge approximately 2 cm anterior to the vertical line join the lingual to the angle of mandible, following the same path horizontal line made 1 cm move the inferior line osteoplasty done between the superior and inferior line, impacted 48 encapsulated with cystic epithelium exposed, punch made using round bur, and cystic lining detached from bony wall [Figures 4 and 5]. Gutting done surrounding the teeth under copious saline irrigation. Cyst was enucleated in toto along with extraction of the impacted tooth. The excised specimen was sent for a histopathologic examination, which revealed a thin, fibromatous wall lined by three layers of flat epithelial cells resembling to reduced enamel epithelium. Slight inflammatory infiltrate noted in the connective tissue. After comparing the clinical, radiographic, and histopathologic features of the lesion, a final diagnosis of dentigerous cyst was made.

### Discussion

Cystic lesion associated with impacted third molar due to pressure exertion by the lesion can result in "hollowing-out" of the entire ramus.<sup>[3]</sup> This reaction is related with displacement



Figure 2: Pre-operative intraoral picture



Figure 3: Pre-operative orthopantomography



Figure 4: Intraoperative picture showing ectopically impacted third molar



Figure 5: Intraoperative picture after enucleation

of the impacted third molars to such an extent that sometime come to lie compressed against the inferior border of mandible. Dentigerous cyst can be demarcated as the cyst enclosing the crown of an unerupted tooth, increases the follicle, and is attached to the cemento-enamel junction.<sup>[4]</sup> Although the dentigerous cysts account for more than 24% of the jaw cysts, the prevalence rate of dentigerous cysts involving the permanent ramus is just 1.5%. Radiographic and clinical appearance of odontogenic keratocyst, ameloblastic fibroma, and adenomatoid odontogenic tumor can mimic a dentigerous cyst.<sup>[5]</sup> A suspicion of any pathology can arise when the follicular space is larger than 5 mm in diameter. However, in our case, a positive aspirate ruled out the possibility of a tumor. Several dentigerous cysts associated with ectopically impacted tooth attain great dimensions before being diagnosed. Furthermore, displacement of the teeth is relatively common. In the present case, there was a thinning out of the lingual cortical plate and the lesion had involved more than half of the anteroposterior width of the mandibular ramus which made it susceptible for pathological fracture of the jaw. Untreated dentigerous cysts rarely develop into an odontogenic tumor-like ameloblastoma or any other malignancy like the squamous cell carcinoma so earliest intervention should be made to prevent the further complication.<sup>[6]</sup>

## Conclusion

In our case report, we report the dentigerous cyst enclosing an impacted third molar. Before planning the definitive procedure, it must always be kept in mind that radiographic findings cannot be considered as the diagnostic for a dentigerous cyst, as similar appearance noted for odontogenic keratocyst, unilocular ameloblastomas. Pre-operative fine-needle aspiration cytology should be done to evaluate the cystic content, protein content, and physical appearance of the fluid which can help

in differentiating the dentigerous cyst from other lesions. Histopathological examination is an important tool in diagnosis and treatment planning. The choice of treatment depends on many factors such as size, location, proximity to vital structures, and immediate interventions should be made in case where the lesion is involving more than half of the anteroposterior width of the mandibular ramus to avoid pathological fracture of the jaw. Hence, the surgeon should be aware of them and be able to assess the level of difficulty posed by each case to facilitate the planning of treatment and proper patient management.

## References

1. Goel A, Patil P, Bansal R, Sabharwal R. Dentigerous cyst involving mandibular third molar: Conservative treatment with radiologic follow-up and review of literature. *Clin Cancer Invest J* 2013;2:233-6.
2. Zakirulla M, Yavagal CM, Jayashankar DN, Meer A. Dentigerous cyst in children: A case report and outline of clinical management for pediatric and general dentists. *J Orofac Res* 2012;2:238-42.
3. Arakeri G, Rai KK, Shivakumar HR, Khaji SI. A massive dentigerous cyst of the mandible in a young patient: A case report. *Plast Aesthet Res* 2015;2:294-8.
4. Kalaskar RR, Tiku A, Damle SG. Dentigerous cysts of anterior maxilla in a young child: A case report. *J Indian Soc Pedod Prev Dent* 2007;25:187-90.
5. Rajendran R, Sivapathasundharam B. Shafer's Textbook of Oral Pathology. 6<sup>th</sup> ed. Noida, India: Elsevier; 2009. p. 254-8.
6. Daley TD, Wysocki GP, Pringle GA. Relative incidence of odontogenic tumors and oral and jaw cysts in a Canadian population. *Oral Surg Oral Med Oral Pathol* 1994;77:276-80.

**How to cite this article:** Vasudev S, Maneeshashree GR, Sahana MS, Debnath PP. Dentigerous cyst associated with an ectopically erupted mandibular third molar: A case report. *J Adv Clin Res Insights* 2020;7(3): 61-63.

This work is licensed under a Creative Commons Attribution 4.0 International License. The images or other third party material in this article are included in the article's Creative Commons license, unless indicated otherwise in the credit line; if the material is not included under the Creative Commons license, users will need to obtain permission from the license holder to reproduce the material. To view a copy of this license, visit <http://creativecommons.org/licenses/by/4.0/> © Vasudev S, Maneeshashree GR, Sahana MS, Debnath PP. 2020