

A Case of Residual Cyst: Diagnosis, Management, and Outcome

¹Dr. Tulsi Lodhi Bahetwar, Professor and HOD, Department of Dentistry, Indira Gandhi Government Medical College, Nagpur

²Dr. Aparna Sharma, Associate Professor, Department of Dentistry, Indira Gandhi Government Medical College, Nagpur

³Dr. Prajakta Zade, Assistant Professor, Department of Dentistry, Indira Gandhi Government Medical College, Nagpur

⁴Dr. Priyanka Bhaje, Senior Resident, Department of Dentistry, Indira Gandhi Government Medical College, Nagpur

⁵Dr. Rajat Bajaj, Senior Resident, Department of Dentistry, Indira Gandhi Government Medical College, Nagpur

⁶Dr. Dhanashree Minase, Senior Resident, Department of Dentistry, Indira Gandhi Government Medical College, Nagpur

Corresponding Author: Dr. Tulsi Lodhi Bahetwar, Professor and HOD, Department of Dentistry, Indira Gandhi Government Medical College, Nagpur

Citation of this Article: Dr. Tulsi Lodhi Bahetwar, Dr. Aparna Sharma, Dr. Prajakta Zade, Dr. Priyanka Bhaje, Dr. Rajat Bajaj, Dr. Dhanashree Minase, “A Case of Residual Cyst: Diagnosis, Management, and Outcome”, IJDSIR- January – 2025, Volume – 8, Issue – 1, P. No. 92 – 95.

Copyright: © 2025, Dr. Tulsi Lodhi Bahetwar, et al. This is an open access journal and article distributed under the terms of the creative common’s attribution non-commercial License. Which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given, and the new creations are licensed under the identical terms.

Type of Publication: Case Report

Conflicts of Interest: Nil

Abstract

A residual cyst is a type of odontogenic cyst that grows slowly and is typically discovered by accident, they can grow to enormous sizes, displace nearby structures, and develop into both benign and malignant tumors. They may arise from the jaw's remaining odontogenic epithelium after tooth extraction. In this case report, a female patient having a painless swelling on the face was examined clinically, and verified radiologically and histopathologically for the residual cyst. The treatment done was surgical enucleation and the patient was scheduled on regular follow-up to avoid the recurrence.

Keywords: Cyst, Enucleation, Orthopantomogram, Odontogenic Epithelium, Curettage.

Introduction

In the maxillofacial region, odontogenic cysts (OCs) are commonly encountered lesions, typically arising from the remaining odontogenic epithelium within the jaws. Depending on their pathophysiological mechanisms, OCs are classified as either inflammatory or developmental cysts.^[1] Residual cysts typically develop when remnants of a tooth root or fragments of the dental follicle persist following incomplete tooth extractions or inadequate enucleation of an odontogenic cyst.^[2] It occurs from 2.2% to 18% of odontogenic cysts in the jaws. The maxilla is the most frequently affected site, and males are more commonly affected than females, its primary effect is in the 3rd decade of life and is seen in

both, the maxilla and mandible. Mostly it is painless swelling, but pain may occur in cases with secondary inflammation. It is surgically treated by enucleation, marsupialization, or decompression to decrease the intraluminal pressure within the cyst.^[3]

Case Report

A 30-year-old female patient reported to the Department of Dentistry, Indira Gandhi Government Medical College with the primary complaint of swelling and pus discharge from the back region of the upper jaw on the left side for two to three months. No medical history was revealed and past dental history showed extraction of the maxillary right first molar and root canal treatment of the maxillary right second premolar.

Upon assessment, the patient appeared to be a healthy-looking woman with an average build. No significant abnormalities were found during a general examination of the patient. On extraoral examination, the face appeared asymmetrical due to the swelling on the right side of the face. The colour and texture of the skin on the affected side appeared the same as on the normal side. Mesiodistally the swelling was diffused in nature extending from the left ala of the nose to the line joining the right lateral canthus. Super inferiorly, the swelling extends from the infraorbital rim to the level of the right corner of the mouth. It measured about 3.5×3.5 cm (Figure 1). The swelling had a soft to firm consistency, tender and the local temperature remained constant.

Upon intraoral inspection, the intraosseous swelling was seen in the maxillary region obliterating the vestibule. Anteroposteriorly, the swelling extended from the distal of the first premolar to the distal of the second molar, and superoinferiorly, 0.5 cm from the gingival margin of the premolars and first two molars to the upper buccal vestibule. It was fluctuant, dome-shaped, and tender. The mucosa on top was smooth, raised, and showed no

symptoms of irritation. It was the same color as the mucosa next to it. The maxillary right first molar was absent and the extraction socket was healed, and the alveolar mucosa covering it was normal. Grade I mobility along with tenderness was observed with maxillary right second premolar. An orthopantomogram was advised to the patient.

On radiographic examination, a single large well defined radiolucent lesion was seen in the right maxilla involving the tip of the right maxillary second premolar to the right maxillary second molar, roughly oval in shape, displacing the antrum floor upwards (Figure 2).

So, the treatment done for the patient was surgical enucleation and curettage along with the extraction of the right maxillary second premolar under 2 % local anesthesia (Lignocaine Hydrochloride & Adrenaline Injection). After enucleation, proper haemostasis was achieved and the surgical site was closed by using 3/0 vicryl (Figure 3 a and b).

The obtained specimen was sent for histopathological examination (Figure 4). The report revealed the presence of stratified squamous epithelial lining with nonuniform thickness. The connective tissue wall showed fibroblasts, collagen fibers, blood vessels, inflammatory cells, and cholesterol clefts together with multinucleated cells, which confirmed the diagnosis of the residual dental cyst.

All the postoperative instructions, along with maintaining oral hygiene were explained to the patient. After one week, suture removal was done and the patient was scheduled for follow-up after one month. After one month, intraorally, no pathological finding was seen and the patient was scheduled for follow-up every month for up to 6 months. The Figure 5 shows an Orthopantomogram of the patient after six months which revealed.

Discussion

Residual cysts are often asymptomatic but can cause swelling, pain, tooth displacement, and discomfort. Depending on the precise anatomical location of cyst formation, the type and severity of clinical symptoms vary.^[3,4]

If the radicular cyst is surgically removed completely, it does not return. A residual cyst may form in the edentulous area months or even years later if the cystic sac is severely fractured, leaving epithelial remnants, or if a periapical granuloma is partially excised, leaving epithelial vestiges. The residual cyst is frequently found during routine radiography examination of an edentulous area and is typically asymptomatic.

On the other hand, they may cause the jaw's cortical plates to enlarge, invade the maxillary antrum, or compress the inferior alveolar canal. When a secondary infection occurs, it can occasionally become painful. It appears as a distinct round-to-oval radiolucency with a corticated edge on radiography. Usually, the cyst's internal appearance is radiolucent. Long-standing cysts, usually regressing, may exhibit dystrophic calcification.^[5, 6] On the other hand, an infection obscures the cortex.^[7]

The failure of the pre-existing inflammation to go away after extraction or endodontic treatment is one of the causes of the residual cyst. Furthermore, a novel inflammatory irritant that promotes further epithelial growth may be restored. About 8% of RRCs have Rushton bodies, found during the histologic study. They most likely form when odontogenic epithelial secretory products land on cyst wall particles like cell debris or cholesterol crystals.^[8]

Except for the location of the extracted teeth, the histological and clinical characteristics of the radicular cyst and the residual cyst are extremely similar. Residual

dental cysts are typically found as accidental findings on routine radiography and have an innocuous pathosis. Remaining dental cysts that cause clinical indications or symptoms that would cause the patient to seek treatment are uncommon unless they are infected.^[8,9,10]

Conclusion

As residual cyst is asymptomatic unless infectious so it is overlooked. This case report highlights the importance of early detection of residual cyst by taking thorough case history, clinical examination, an accurate radiological and histopathological evaluation with regular follow-up.

References

1. Tamiolakis, P., Thermos, G., Tosios, K. I., & Sklavounou-Andrikopoulou, A. (2019). Demographic and clinical characteristics of 5294 jaw cysts: a retrospective study of 38 years. *Head and neck pathology*, 13(4), 587-596.
2. Lis, E., Gontarz, M., Marecik, T., Wszyńska-Pawełec, G., & Bargiel, J. (2024). Residual Cyst Mimicking an Aggressive Neoplasm—A Life-Threatening Condition. *Oral*, 4(3), 354-361.
3. Titinchi, F., & Morkel, J. (2020). Residual cyst of the jaws: A clinico-pathologic study of this seemingly inconspicuous lesion. *Plos one*, 15(12), e0244250.
4. Tsvetanov, T. S. (2016). Residual cysts: A brief literature review.
5. White, S. C., & Pharoah, M. J. (2013). *Oral radiology: principles and interpretation*. Elsevier Health Sciences.
6. High, A. S., & Hirschmann, P. N. (1986). Age changes in residual radicular cysts. *Journal of Oral Pathology & Medicine*, 15(10), 524-528.
7. Mortensen, H., Winther, J. E., & Birn, H. (1970). Periapical granulomas and cysts: An investigation of

1,600 cases. European Journal of Oral Sciences, 78(1-4), 241-250.

8. Dimitroulis, G., & Curtin, J. (1998). Massive residual dental cyst: case report. Australian dental journal, 43(4), 2-4.
9. Limbhore, M. V., Patil, V. S., & Ramanojam, S. (2018). SURGICAL MANAGEMENT OF RESIDUAL CYST: A CASE REPORT. Era's Journal of Medical Research, 5(1).
10. Manoj kumar, Sandeepa, Selvamani M, Bastian TS .(2017) Bilateral Residual cysts of Mandibular Permanent. Oral and Maxillofacial Pathology Journal 8(1), 32-34

Legend Figures



Figure 1: Intraoral image showing Intraosseous swelling



Figure 2: Orthopantamograph showing single well defined, oval shaped radiolucency in right side of maxilla



Figure 3 a: Surgical Enucleation site



Figure 3 b: Sutured flap



Figure 4: Extracted second premolar and specimen obtained after enucleation



Figure 5: Postsurgical orthopantamograph after six months