

## RADICULAR CYST: A CASE REPORT

Supriya L.Vaidya<sup>1</sup>, Komal Dipke<sup>1</sup>, Namrata Patil<sup>2</sup>, Vinita Murgod<sup>3</sup>, Pallavi Dashatwar<sup>4</sup>

PG Student<sup>1</sup>, Professor & HOD<sup>2</sup>, Professor<sup>3</sup>, Sr.lecturer<sup>4</sup>.

<sup>1-4</sup>Dept. of Oral Pathology and Microbiology, SaraswatiDhanwantariDental College and Hospital and Post Graduate Institute, Parbhani, Maharashtra, India.

### Introduction

WHO classifies cysts of jaw bone into developmental, neoplastic, and inflammatory origin. Radicular cyst comes under inflammatory origin category and believed to be formed by inflammatory proliferation of epithelial rests of malassez in the area of apical periodontitis of tooth with necrotic pulp [1]. Radicular cysts are most common cystic lesions of the jaw comprising 52.3% of jaw cysts and 62% of odontogenic cysts [2]. The exact diagnosis is based on clinical, radiologic and histological evaluation. Radicular cysts are usually asymptomatic and are detected during routine radiographic examination and in some longstanding cases it shows signs and symptoms such as swelling, mobility, displacement of an unerupted tooth [3].

### Case report

A 23 yr. old male patient reported to dept. of orthodontics and wanted to align his teeth and also wanted to replace his missing tooth (11). The

patient was alert, conscious, moderately built, and well nourished. Extraorally his face appeared to be symmetrical and no swelling or tenderness was noted, he had history of Pericoronitis with respect to 38. Intraorally no obvious abnormality except missing 11 was found. On radiographic investigation, his orthopantomograph revealed a small round well defined unilocular non corticated radiolucency around the roots of 38 (figure.1)

CBCT was also advised CBCT reports gave diagnosis of chronic periapical abscess (figure 2,3,4,5,6).

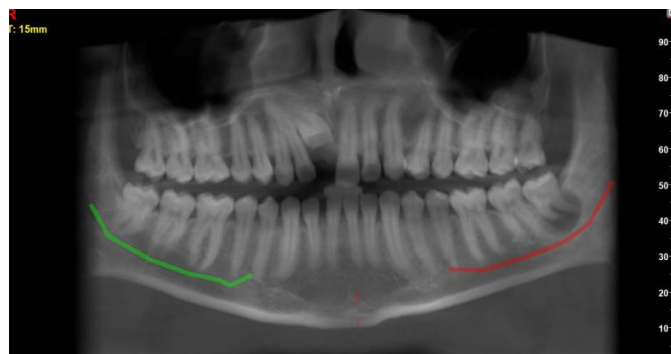


Figure. 1 (showing unilocular radiolucency periapically with 38)

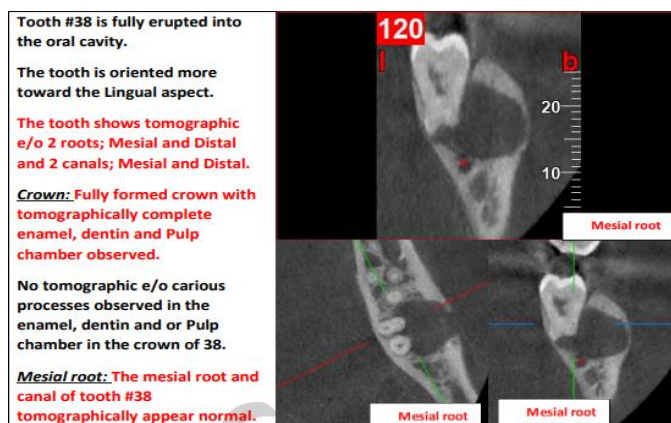


Figure. 2 (showing crown and mesial root)

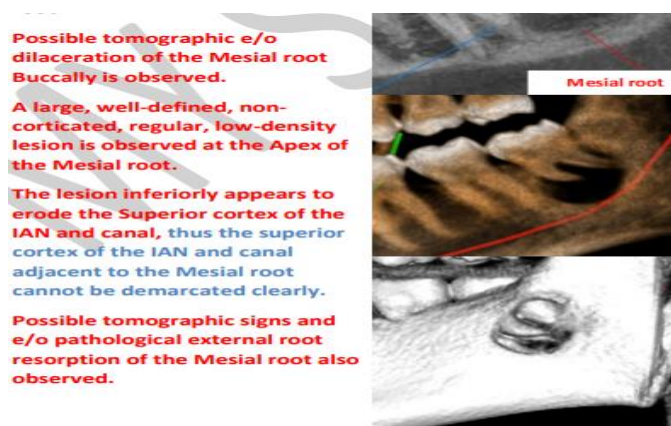


Figure.3 (Showing large, well defined, non-corticated lesion at apex of mesial root)

**Distal root:** The Distal root and canal of tooth #38 tomographically appear normal.

No tomographic e/o Secondary/accessory/lateral canals observed in the Distal root.

Possible tomographic e/o dilaceration of the Distal root Buccally is observed.

A large, well-defined, non-corticated, regular, low-density lesion is observed at the Apex of the Distal root.

The low-density lesion around the Distal root apex is about 1.2mm away from the superior cortex of the IAN and canal.

No tomographic signs and e/o pathological external root resorption of the Distal root is observed.

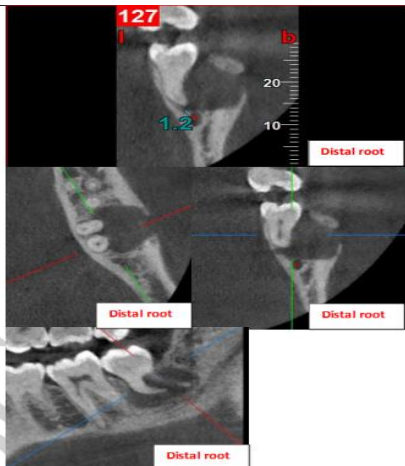


Figure. 4(Showing dilacerated distal root with well defined radiolucency)

**Abscess Description:** A large, well-defined, non-corticated, regular, low-density lesion is observed at the apex of tooth #38; S/o a Chronic periapical Abscess.

The lesion measures 15.2mm in the B-L dimensions and 10.9mm in the M-D dimensions.

The lesion distally extends till the junction between the body and the ramus of the Mandible.

Medially the lesion appears to involve the apical one-third of the root of the adjacent 37. Vitality testing of 37 is recommended and advised.

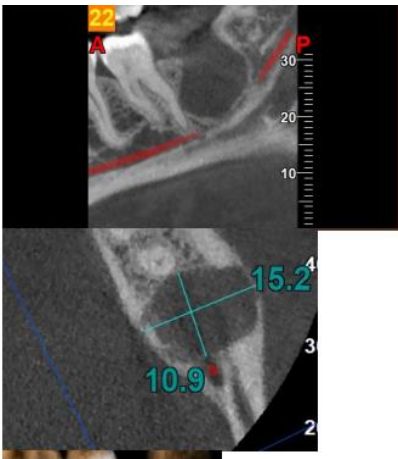


Figure.5(Showing chronic periapical abscess)

**Inferiorly:** The lesion extends from the Superior cortex of the IAN and canal, where adjacent to the apex of the Mesial root, an erosion of the Superior cortex of the IAN and canal is observed.

**Superiorly:** It exits into the oral cavity through the alveolar crest and the Gingival sulcus on the Distal aspect of the tooth.

**Laterally:** the lesion exits into the Fascia surrounding the tooth through a perforation/erosion of the Buccal cortical plate.

**Medially:** the lesion exits into the fascia around the tooth through a perforation/erosion of the Lingual cortical plate.

Both Buccally and Lingually an erosion of the Cortical plates is observed due to the "Hydraulic effect" exerted by the contents of the low-density abscess.

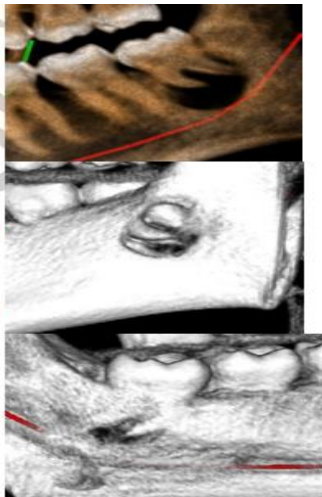


Figure 6. (Showing extent of lesion)

Excisional biopsy of lesion was done and the specimen was sent to dept of oral pathology for histopathological evaluation.

## Gross examination

On grossing examination the given tissue was whitish brown in colour, 1x0.5 cm in dimension nodular and elastic in consistency (figure7).



Figure 7 (Gross specimen)

## HISTOPATHOLOGY

Tissue processing was done. Microscopically it showed typical arcading pattern of the epithelium with connective tissue entrapped within it (figure8,9). Connective tissue stroma showing numerous collagen fibres with spindle shaped fibroblast and inflammatory infiltrate composed of chronic inflammatory cells like lymphocytes, plasma cells. At places numerous small round eosinophilic structures resembling Russel bodies are seen (figure.9). At one place pale eosinophilic cystic fluid seen these overall histopathological features were suggestive of Radicular Cyst

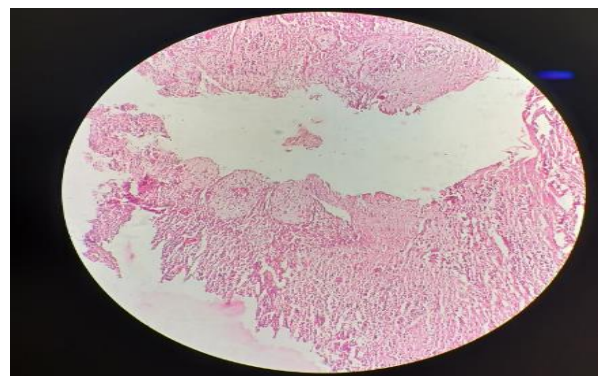
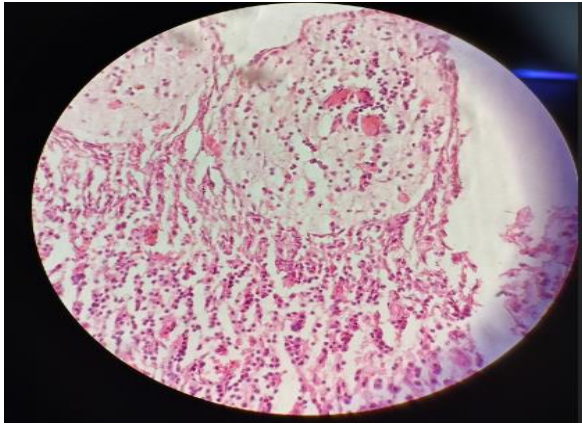


Figure. 8(10x) Figure.9 (Showing arcading pattern)



(40x) Figure.10(Showing Russel bodies)

### **Discussion**

The term, 'cyst' is derived from the Greek word, 'Kystis', meaning, 'sac or bladder'. Cyst is defined as a pathological cavity that is usually lined by epithelium and which has a centrifugal, expansive mode of growth [4].

Radicular cyst is also known as periapical cyst and is associated with carious, nonvital, discoloured or traumatic or fractured tooth.[5] The infectious source causes inflammation and also necrosis of pulp which spreads to periapical area which may cause pain, swelling, abscess, and fistulae. In some cases sign and symptoms are resolved by endodontic treatment but in some cases it fails to resolved in such cases cystic enucleation and curettage implemented[6].Mandibular molars are most commonly impacted teeth and main reasons for that is failure of tooth rotation and insufficient space for eruption.Impacted molars can cause various pathological conditions such as pericoronitis, bone loss, root resorption, distal caries, periodontitis odontogenic cysts and tumours etc.Radicular cyst is symptomless and usually detected during routine radiographic examination incidentally while investigation of other disease[5,7].In this case patient is asymptomatic and the associated tooth is sound, vital and non-carious which considered to be rare.

### **Conclusion**

Radicular cyst is the most common entity encountered during dental practice. The pathogenesis of it is a complex process which involves broad range of biologically active

molecules and their interactions. There is chance of neoplastic transformation of radicular cyst hence it should be treated properly and long term follow up is recommended[8]. Residual cysts occur due to incomplete removal of radicular cyst and are histologically similar to radicular cysts are treated by marsupialisation or enucleation depending upon size of the cyst[9].

### **REFERENCES**

1. Lin LM, Ricucci D, Kahler B. Radicular cysts review. *JSM Dent Surg*2017;2(2):1017.1-1017.3
2. Sevekar S, Subhadra HN, Das V. Radicular cyst associated with primary molar: surgical interventionand space management. *Indian J Dent Res* 2018;29:836-9.
3. Grover N, Tyagi A, Kumar A, Sharma V. Radicular cyst: A review and case report. *Journal Orofacial & Health Sciences*. 2014;5(3):163-5.
4. Joshi NS, Sujan SG, Rachappa MM. An unusual case report of bilateral mandibular radicular cysts. *Contemp Clin Dent*.2011;2(1):59-62.
- 5.Koju S, Chaurasia NK, Marla V, Niroula D, Poudel P. Radicular cyst of the anterior maxilla: An insight into the most common inflammatory cyst of the jaws. *J Dent Res Rev*.2019;6:26-9.
- 6.Chen JH, Tseng CH, Wang WC, Chen CY, Chuang FH, Chen YK. Clinicopathological analysis of 232 radicular cysts of the jawbone in a population of southern Taiwanese patients. *The Kaohsiung J Med Sci*.2018 Apr 1;34(4):249-254.
7. Haddad Z, Khorasani M, Bakhshi M, Tofangchiha M. Radiographic position of impacted mandibular third molars and their association with pathological conditions. *Int J Dent*. 2021 Mar 24;2021:8841297.
8. Krishnamurthy V, Haridas S, Garud M, Vahanwala S, Nayak CD, Pagare SS. Radicular cyst masquerading as a multilocular radiolucency. *Quintessence Int*. 2013Jan; 44(1):71-3

9. Tsvetanov TS. Residual cysts: A brief literature review. *Int J Med Dent Sci* 2016;5(2):1341-1346.

Corresponding author:

Dr. Supriya L. Vaidya

PG Student

Dept. of Oral Maxillofacial Pathology

Email id: supriyalvaidya263@gmail.com

How to cite this Article:

Vaidya SL, Dipke KB, Patil NN, Murgod VV,

Dashatwar P. Radicular Cyst: A Case Report.

*Journal of Interdisciplinary Dental Sciences.*

2022; Jan- June 11(1):19-22