

Deceptive appearance of a large radicular cyst.

¹Dr.Apurva Mohite Khator, B.D.S., M.D.S., Assistant Professor, Department of Oral Medicine and Radiology, Vidhya Shikshan Prasark Mandal's Dental College and Research Centre, Digdoh Hills Hingna Road, Nagpur. 440019.

²Dr. Mukta Bhagwandas Motwani , B.D.S., M.D.S., Professor and Head, Department of Oral Medicine and Radiology, Vidhya Shikshan Prasark Mandal's Dental College and Research Centre, Digdoh Hills Hingna Road, Nagpur. 440019.

Corresponding Author: Dr.Apurva Mohite Khator, B.D.S., M.D.S., Assistant Professor, Department of Oral Medicine and Radiology, Vidhya Shikshan Prasark Mandal's Dental College and Research Centre, Digdoh Hills Hingna Road, Nagpur. 440019.

Citation of this Article: Apurva Mohite Khator, Mukta Motwani, "Deceptive appearance of a large radicular cyst.", IJDSIR- December - 2020, Vol. – 3, Issue - 6, P. No. 327 – 332.

Copyright: © 2020, Dr. Apurva Mohite Khator, et al. This is an open access journal and article distributed under the terms of the creative commons attribution noncommercial 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

Introduction

Cysts are fluid-filled, epithelium- lined cavities in the jaw bones and soft tissues of the face, floor of the mouth, and neck that may cause either intraoral or extraoral swellings. The majority of cysts are small, do not distend surface tissues, and are often first recognized in routine dental radiographic examinations although, large cysts may cause significant facial asymmetry and pain.

Radicular cysts are the most frequent type of jaw cyst and make up as much as 55% of jaw cysts.[1] They are true cysts that occur in association with the roots of non-vital teeth. They are inflammatory odontogenic cysts derived from the remnants of Hertwig epithelial root sheath called as cell rest of Malassez . They are a sequelae of apical periodontitis resulting from dental caries or periodontitis or from nonvital teeth due to trauma.[2] Clinically, most

radicular cysts are asymptomatic unless secondarily infected. Radiographically, they appear as well circumscribed radiolucencies at the apex or lateral to a tooth root. Histologically, they appear as a squamous epithelium lined cyst lumen surrounded by inflamed fibrous connective tissue.[3]

Radicular cyst causes buccal and palatal expansion in maxilla while in mandible it causes only buccal expansion and very rarely lingual expansion. It also causes teeth displacement and bone resorption extending into the soft tissues and rarely causes tooth resorption and nerve paraesthesia.[2]

In this case report we describe an unusual case of a large radicular cyst crossing the mandibular midline showing marked buccal and lingual expansion along with root resorption and paraesthesia.

Case report

A 64 year old male patient reported with a complaint of swelling in the lower front region of jaw since 6 months and pain in the same region since 3-4 days. Swelling was initially small in size and gradually increased to attain the present size of approx. 2.5 X 1cm. Pain was gradual in onset, dull aching and intermittent in nature and mild in intensity. He gave history of taking medications for pain 1 day back given by a pharmacist. There was no history of previous consultations or medications taken during the 6 months period. There was no history of any trauma to the same region. There was no history of any discharge from the swelling intraorally or extraorally. No history of fever. No history of balm application or hot fomentation over the swelling. On extraoral examination, a diffuse swelling was seen over the left parasymphiseal region which was firm in consistency and slightly tender on palpation. Skin over the swelling and surrounding it was normal. Single, submandibular lymph node was palpable on the left side, approx. 1cm X 1cm in size, round in shape, firm in consistency, mobile and non-tender on palpation. Intraoral examination revealed cervical abrasion with 17, 15, 14, 34, 35, 36 and severe abrasion with 23, 24, 34. Tenderness on vertical percussion was negative with all the abraded teeth. Root pieces were seen with 18, 16, 24, 25, 26, 38, 47. Proximal caries were seen with 36, 46. Buccal vestibule was obliterated in the region of 31, 32, 33, 34 and 35. A single swelling was seen involving the marginal and attached gingiva and the buccal vestibule in the region of 31 to 35 of size approx. 2.5cm X 1.5cm. Colour of the swelling was pink, similar to adjacent mucosa and surface was smooth and lobulated. Surrounding mucosa was normal and no visible discharge was seen from the swelling. The consistency was soft and fluctuant. It was slightly tender on applying pressure but there was no discharge. Buccal and lingual cortical expansion was

present in the region of 31 to 35. A provisional diagnosis of a radicular cyst was given.

Investigations done were an intraoral periapical radiograph (IOPA) with 31, 32, 33, 34 and 35, mandibular occlusal anterior topographic view, Orthopantomogram (OPG), aspiration of the swelling, vitality testing with 31 to 35 and complete haemogram of the patient. IOPA's revealed a well circumscribed, unilocular radiolucency with corticated borders in association with the roots of 31 to 35 and the mesial root of 36. Mild root resorption was seen with 34 and 35. Occlusal radiograph showed a large radiolucency extending from 31 to 36. Marked buccal and lingual cortical expansion was observed. OPG examination revealed a large radiolucent lesion crossing the midline and extending from mandibular right canine to mandibular left first molar. The size of the lesion was approximately 4cm X 3cm with well corticated and well circumscribed borders. Scalloping of the margins was seen in some areas of the lesion. Internal structure was completely radiolucent. The lesion was unusually large and impinging on the mandibular canal. Aspiration of the swelling yielded a thin, straw coloured aspirate. The teeth 31, 32, 33, 34, 35, 41, 42, 43 were non-vital. PAP stained FNAC smear showed the presence of inflammatory cells along with few pus cells, squamous epithelial cells and cholesterol clefts. Hence, a clinicopathologic diagnosis of a radicular cyst was established. The patient underwent root canal treatment with all the teeth, that is, 31, 32, 33, 34, 35, 36, 41, 42, 43. 15 days follow up after all the treatment showed a little reduction in the size of the lesion on the OPG. Clinically, both intraoral and extraoral swellings disappeared.

Discussion

The periapical (radicular) cyst is the most common type of odontogenic cyst. These lesions have a slight male

predominance and peak incidence between the ages of 30 and 50 years.[4] These cysts can occur in periapical region of any teeth, at any period but infrequently seen linked with primary dentition. Studies have shown that these cysts are more common in maxilla than mandible.[5]

They may be slow growing bony swellings and also asymptomatic, and these lesions can be determined unpredictably on periapical radiographs in contrast to the present case where the patient presented with pain and swelling.

The pathogenesis of radicular cysts comprises three distinct phases: the phase of initiation, the phase of cyst formation, and the phase of enlargement. The teeth associated with the cyst are always nonvital and may be discolored too. It is clinically exhibited as buccal or palatal swelling in the maxilla and buccal in the mandible. Initially, it tends to be a bony hard enlargement, but as the cyst develops in size, the bone gets resorbed and becomes thin, and a characteristic springiness or egg shell crackling is perceived on the swelling and becomes fluctuant.[6]

Most radicular cysts are small, ranging in size from 0.5 to 1.5 cm but in the present case the cyst measured as big as 4cm which is uncommon.

In the present case, the first differential diagnosis considered was central giant cell granuloma(CGCG) as it is the most common lesion occurring in the mandibular midline (anterior to second molars).[7] The lesions radiographic appearance is very similar to the one in the present case. Although, CGCG is more commonly seen in female patients under 30 years of age and the aspirate from CGCG is usually blood hence, CGCG was ruled out.

The second differential diagnosis considered was keratocystic odontogenic tumor (KCOT) as the lesion also appears as a unilocular cystic radiolucency more commonly in the mandible.[7] However, it is more frequently seen in younger individuals, is more

aggressive and causes perforation of cortical plates and the aspirate yields thick, cheesy material which are all in contrast to the present case.

The third differential diagnosis was unicystic ameloblastoma as its radiographic appearance is very similar to that in the present case and the aspirate is also straw coloured. However, it is most common in younger individuals and the site of occurrence is mandibular third molar region.

Paul et.al [8] described a case of a Dentigerous cyst in an 80-year-old man in the anterior aspect of the mandible enveloping an impacted canine and crossing the midline but with no clinical expansion or discomfort. However, that is a rarity and dentigerous cyst cannot be always included in the differential diagnosis of mandibular midline radiolucencies.

It can be inferred from the present case that, a radicular cyst can mimic radiographic appearance of various other lesions and hence meticulous clinico-radiographic correlation has to be made to give an appropriate diagnosis. It is also seen that a radicular cyst can grow as big as to cross the midline and also cause displacement of mandibular canal. The present case can be called unusual with regards to the site, size, appearance, presence of pain and paraesthesia and both buccal and lingual cortical expansion.

Such large radicular cysts in the mandible like in the present case are rare however, large cysts in the maxilla are common like the one reported by Kumar Nilesh et al.[9] wherein they have described a case of two large radicular cysts in the maxilla occupying the entire left half of the maxilla and the maxillary sinus.

Various treatment options can be followed like root canal treatment, extraction of tooth and marsupialization/enucleation depending on the clinical presentation of the lesion.[10] In the present case, root

canal treatment of all the involved nine teeth was done. As the lesion was very large, surgery was planned after the root canal treatment expecting some shrinkage in the size of the lesion but the patient was not willing for surgery.

Conclusion

Presence of unusually large periapical lesion may often lead to diagnostic dilemma.[11] The current case of an unusually large radicular cyst had a deceptive radiographic appearance and hence we considered a few differential diagnoses. Such cases need to be evaluated in a step wise manner to reach a definite diagnosis so that appropriate treatment can be done.

References

1. Michael Glick. Burket's Oral Medicine. 10th edition. 2015. Peoples medical publishing house-USA. Shelton, Connecticut. page number 156.
2. Kumar ND, Sherubin JE, Jose M, Swaminathan C (2017) Surgical Management of Large Radicular Cyst in Mandible. Int J Dent Oral Health 3(3):
3. Michael Glick. Burket's Oral Medicine. 12th edition. 2015. Peoples medical publishing house-USA. Shelton, Connecticut. page number 166.
4. Devenney-Cakir B, Subramaniam R, Reddy S, Imsande H, Gohel A, Sakai O. Cystic and Cystic-Appearing Lesions of the Mandible: Review .AJR:196, June 2011.
5. Bava FA, Umar D, Bahseer B, Baroudi K. Bilateral Radicular Cyst in Mandible: An Unusual Case Report Journal of International Oral Health 2015; 7(2):61-63.
6. Maxillary and mandibular unusually large radicular cyst: A rare case report Kolari V, Rao A, Thomas T. National Journal of Maxillofacial Surgery 2019 Jul-Dec; 10(2): 270-273.
7. Wood NK, Kuc IM. Pericoronal radiolucencies. In: Wood NK, Goaz PW, editors. Differential Diagnosis

of Oral and Maxillofacial Lesions. 5th ed. St. Louis: Mosby; 1997. p. 279-96.

8. Paul R, Paul G, Prasad R, Singh S, Agrawal N, Sinha A. Appearance can be deceptive: Dentigerous cyst crossing the Midline. National Journal of Maxillofacial Surgery | Vol 4 | Issue 1 | Jan-Jun 2013 |
9. Nilesh K, Dadhich A, Chandrappa P. Unusually large radicular cysts of maxilla : steps in diagnosis & Review of management. J.Bio.Innov4(1),pp:01-11,2015
10. Rai NP, Srivastava A, Srivastava A, Sharma A. Radiolucency of anterior mandible crossing midline. Int J Med Dent Case Rep 2015;1:1-3.
11. Konidena A, Shekhar S, Dixit A, Patil DJ. Unusual cystic lesion in mandibular midline: A diagnostic dilemma. Indian J Multidiscip Dent 2017;7:135-9.

Legend Figure



Figure 1: facial profile of the patient showing diffuse swelling over the mandibular front region.



Figure 2

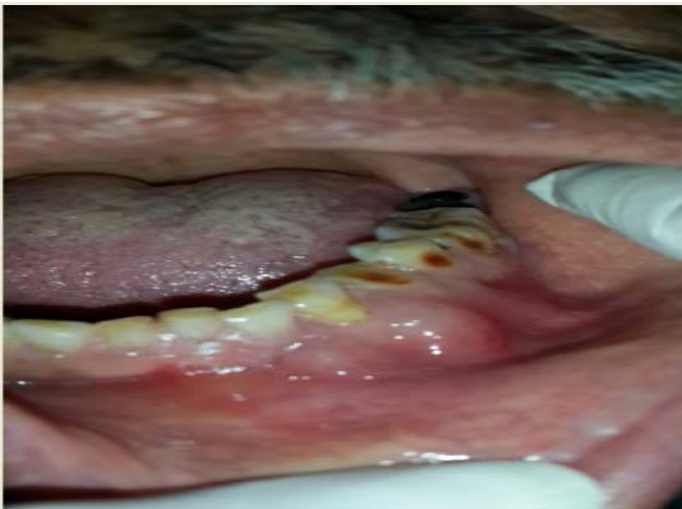


Figure 3

Figure 2 and 3: shows intraoral lobulated swelling over the gingiva and the buccal vestibule.



Figure 4



Figure 5

Figure 4 and 5: IOPA radiographs showing well defined cystic radiolucency from 31 to 36



Figure 6: anterior topographic occlusal view showing buccal and lingual cortical expansion



Figure 7: OPG showing a large cystic radiolucency in the mandible crossing the midline



Figure 8: Thin straw coloured aspirate from the swelling



Figure 9: Follow up OPG after root canal treatments of all the involved teeth.