

Massive radicular cyst involving multiple teeth in pediatric mandible- A case report

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ABSTRACT

Radicular or periapical cysts are one of the most commonly occurring odontogenic cysts of the jaws. The present article reported a case of a 12-year-old female with the chief complaint of swelling and pain on the right lower back tooth region. The radiographic examination revealed the presence of a well-defined radiolucency surrounded by a corticated border with respect to the right mandibular 1st, 2nd and 3rd molar. The case was managed by complete enucleation under general extraction with the extraction of right mandibular 1st, 2nd and 3rd molar. The success of the surgery was apparent by the uneventful healing during the follow-up period and evidence of complete healing after 1-month follow-up. Early diagnosis of the lesion would have lead to a less aggressive treatment plan.

Keywords: Enucleation, periapical cyst, radicular cyst

Introduction

A number of pathological lesions in the jaw are manifested by the children.^[1] The oral and maxillofacial pathologists are mostly fascinated by the odontogenic cysts because of the fact that they arise from the epithelium of the odontogenic apparatus. Among these inflammatory lesions, radicular cysts are the most common arising from the sequelae of dental caries [Figure 1].^[1,2] The radicular cysts are odontogenic cysts that originate from inflammatory activation of the cell rests

Malassez in the periodontal ligament which is generally a consequence of pulp necrosis. Radicular cysts are more in the permanent dentition i.e. 7-54% of the total number of cysts in primary and permanent dentition.^[3] The apex of the tooth is commonly involved in these cysts. Moreover, radicular cysts do not manifest any symptoms and are mostly encountered in the routine radiographic investigation. However, acute exacerbation can arise from the long-standing chronic cystic lesions and may present with pain, swelling, tooth resorption, displacement and mobility.^[4] It mostly occurs in the mandible and clinically manifests the enlargement of the buccal cortical plate enlargement seen in the case of the maxilla.^[5] In order to have a conservative approach, marsupialization can be preferred while enucleation with an extensive bone removal is done in case of the large radicular cysts.^[6]

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Case Report

A 12-year-old female patient reported with a chief complaint of swelling and pain on the right lower 3rd region of the face [Figure 2]. The patient was moderately built. No significant medical and family history. On extraoral examination, a diffuse swelling was present on right lower 3rd of the face, measuring approximately 3 * 4 cm, extending anteroposteriorly from right commissure to right angle of mandible and superoinferiorly from 1 cm below the right alar line to right inferior border of mandible which on palpation was firm in consistency and tender with slight rise in temperature. Intraoral soft tissue inspection revealed a diffuse swelling measuring approximately 2 * 3 cm on right buccal mucosa obliterating the buccal vestibule extending from the distal aspect of 45 to the mesial aspect of 48. On palpation, there was buccal



Figure 1: Preoperative picture showing extraoral swelling on the right lower third of the face

and lingual cortex expansion; the swelling was firm to hard in consistency and tender without pus or blood discharge when palpated apico-coronally. Intraoral hard tissue examination revealed root stumps in relation to 46. The provisional diagnosis of the radicular cyst was made and differential diagnosis as dentigerous cyst and ameloblastoma. OPG [Figure 3] revealed a well defined large unilocular radiolucency, measuring approximately 4 × 5 cm in size on the right body region of the mandible surrounded by a well defined sclerotic border, sparing 2 mm of the inferior border of the mandible. The lesion was extending mediolaterally from the distal aspect of 45 up to the mesial aspect of 48 and there was root resorption of 46 and 47. CBCT [Figure 3] revealed the measurement of the lesion in all three dimensions, that is, anteroposteriorly (AP), mediolaterally (ML) and superoinferiorly (SI) as about 32.1 mm, 18.2 mm and 19.1 mm respectively. It revealed bicortical expansion with a displacement of inferior alveolar nerve. Radiographic diagnosis of the radicular cyst and differential diagnosis as unicystic ameloblastoma was given. Complete cyst enucleation was done under general anesthesia [Figure 4] with aseptic precaution preserving the inferior alveolar nerve and keeping intact the right lower border of the mandible along with the extraction of 46, 47 and 48 followed by thorough curettage with betadine solution and wound closure done with 3-0 vicryl suture [Figure 5]. Postoperative medications were given for 7 days and Betadine gargles twice a day. The excised specimen measured approx × 5 cm [Figure 6] was sent for histopathological examination, which revealed a cystic cavity lined by a non-keratinized epithelial lining of varying thickness and arcading pattern of proliferation. The connective tissue was infiltrated by the chronic inflammatory cell [Figure 7]. The lesion was 7 days healing without any discomfort [Figure 8]. Follow up after 1 month revealed complete healing of lesion.

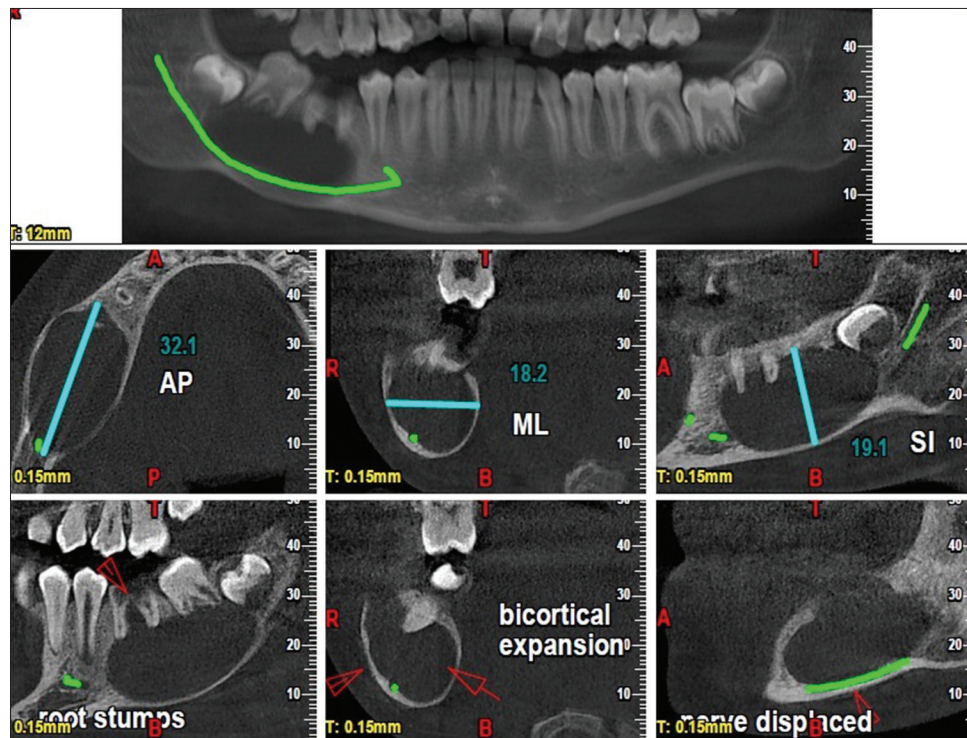


Figure 2: Showing OPG and CBCT showing dimensions of the cystic lesion

Discussion

'Cyst' is the term which had been derived from a Greek word, 'Kystis', which means 'sac or bladder'.^[1,7] The radicular cysts are the

most common cystic lesions affecting the jaws. In the present case report, patient-reported with a huge cystic lesion as the sequelae of the pulpitis following dental caries. The most common features



Figure 3: Intraoperative picture showing complete enucleation of the cystic lesion

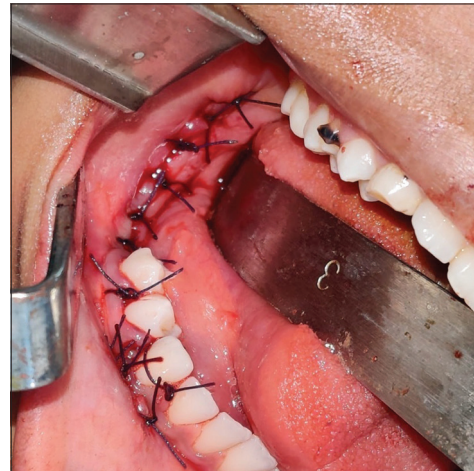


Figure 4: Postoperative picture showing suturing after the enucleation

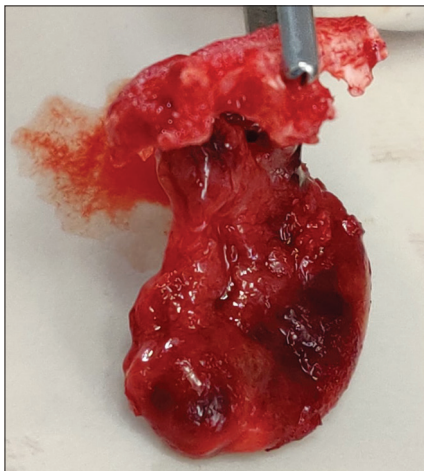


Figure 5: Showing specimen of the excised lesion

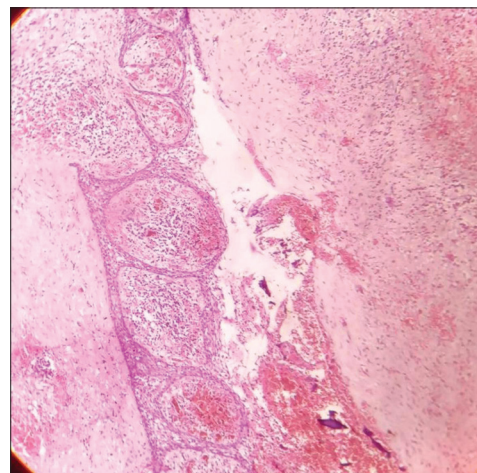


Figure 6: Histopathological picture showing cystic cavity and chronic inflammatory cell infiltration



Figure 7: Follow up after 7 days showing healing of the surgical site



Figure 8: Follow up after 1-month showing complete healing of the surgical site

exhibited by the radicular cysts are the expansion of the cortical plates as well as displacement and root resorption of the offending tooth/teeth which were also evident in the present case.^[8,9] The characteristics of the present case could be considered as interesting because of its massive architecture and unusual clinical presentation. The ideal treatment option for the chronic infected radicular cysts is the surgical enucleation with the extraction of offending tooth/teeth.^[10] More awareness campaigns especially at the primary healthcare centers in order to educate the population about the requirement for early presentation of the dentoalveolar pathologies are recommended. Early diagnosis followed by prompt treatment of any infection in the oral and maxillofacial region by the contemporary protocols in primary health care can help to impede the need for invasive surgical treatment and also to prevent the further complication in the jaw bone or in the craniofacial region which causes major health problems to the patient.

Conclusion

Practicing a non-surgical approach is the current concept for the management of periapical cysts. However, in accordance with the size and extent of the lesion, surgical management might be necessary in order to attain a successful outcome.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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