

Multiple radiolucencies in the mandible: A diagnostic dilemma

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ABSTRACT

Diagnosis and treatment planning of maxillofacial pathologies is an art. It requires careful evaluation and correlation of clinical presentation and radiologic investigations. When the pathology concerned is an intraosseous lesion, the radiographic findings assume a significantly more important role. While carrying out the radiographic assessment, we rely on typical findings regarding the number, location, and appearance of radiolucent areas which point towards certain types of pathologies. Whenever these findings are atypical or at variance with the clinical presentation, it creates a diagnostic dilemma for the clinician. We report a case of a 34-year-old man who presented with a simple clinical history but multiple radiolucencies on the radiograph.

Keywords: Dentigerous cyst, multiple radiolucencies, odontogenic cyst, radicular cyst

Introduction

The jaws are host to a wide variety of cysts and neoplasms, due in large part to the tissues involved in tooth formation.^[1,2] Establishing a diagnosis is especially challenging if the clinical presentation and radiographic appearance are unusual. Multiple cystic lesions in the jaws are usually considered as aggressive lesions.^[3] This report deals with a case of multiple cysts bilaterally in the mandible.

Case History

A 34-year-old male reported with a complaint of pain and pus discharge from a 5-month-old extraction site of the decayed left mandibular first molar. After the extraction, the pus discharge continued unabated and the patient was referred to us. There

was no relevant medical or family history. Extraoral examination showed no gross facial asymmetry or other significant findings. Intraorally a missing left mandibular 1st molar and partially erupted right mandibular canine was seen. No cortical expansion, displacement of adjacent teeth, or involvement of adjoining soft tissues was noted. History and clinical findings pointed towards a radicular cyst missed during extraction.

Orthopantomogram was advised and it showed two distinct radiolucencies. Large unilocular radiolucency with well-defined border extending from periapical region of the mesial root of the left mandibular second molar to canine with a radiopaque septum seen at the 1st molar. No interference with adjacent teeth or neurovascular bundle was seen. Unilocular radiolucency with a well-defined border on the right side associated with a partially erupted canine. No displacement or resorption of adjoining teeth seen. Computed tomography (CT) scan was used to confirm the extent and characteristics of these lesions [Figure 1]. Radiographically, there appeared to be two separate lesions with slightly more aggressive characteristics in the

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posterior mandible. Due to a large radiolucent lesion spreading along the marrow cavity without causing significant cortical expansion along with a separate radiolucent lesion on the other side, a diagnosis of an aggressive odontogenic lesion like OKC was made which may have been secondarily infected from the decayed tooth. Incisional biopsy was performed from the lesion in the left mandible and the histological report was suggestive of a residual cyst. Enucleation of both lesions was planned and all the teeth associated with them underwent root canal treatment. Under general anesthesia, an intraoral vestibular incision was used to approach and enucleate both the lesions. The surgically excised lesion of the left side was about 2 × 3 cm in size and of the right side was 1 × 3 cm in size [Figure 2]. Histopathological examination of the surgical specimen of left side showed nonkeratinized stratified squamous epithelial lining with inflammatory cell infiltration, suggestive of radicular cysts while specimen from the right side showed a cystic lumen, lining of 2–3 cell layered thickness resembling the reduced enamel epithelium, capsule, and connective tissue including few dentinoid like area and odontogenic cell rest, suggestive of dentigerous cyst [Figure 3].

Discussion

The cyst is defined as “a pathological cavity having a fluid, semifluid, or gaseous content and which is not created by the accumulation of pus.”^[3] The physical signs and symptoms of a jaw cyst depend on dimensions and biological characteristics of the lesion. Smaller cysts are usually incidental diagnoses upon radiographic examination and have no clinical manifestations.^[4] There are many variations to the classical presentation of a cyst depending on the type of cyst, its biological characteristics, location, and degree of bone destruction and expansion.^[5] In our case, the patient complained of decayed tooth and continuous discharge after extraction usually common in the radicular or residual cyst. Due to the discharge of cystic content pressure and pain were relieved. Oral swelling varies wildly depending on the amount and pattern of bone loss. Swelling may go from the hard bony expansion of buccal cortex leading to eggshell crackling followed by a soft fluctuant area of bone perforation due to progressive cortical thinning. But there is also a possibility of secondary infection of a preexisting lesion due to decayed tooth. This was a viable possibility because OPG showed secondary radiolucency in the anterior mandible. Another factor to consider is that radicular cyst is relatively uncommon in the posterior mandible but the lesion in our case appeared to have a more aggressive character than usually associated with radicular cysts. The posterior mandible is a common site for OKC which usually present as benign unilocular or multilocular radiolucency with smooth borders spreading along the marrow cavity with nil to the minimal expansion of buccal cortex. A significant number of OKC present as multiple jaw cyst without any associated syndrome. Sometimes these present a more aggressive pattern showing bicortical expansion and displacement of neurovascular bundle and tooth.^[6] Another unilocular radiolucency with sclerotic border associated with the tooth is seen in anterior

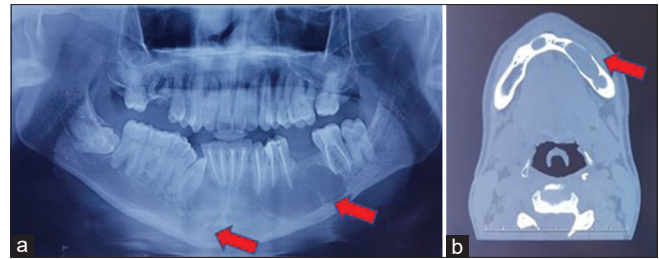


Figure 1: Showing the extending from the periapical region of the mesial root of the mandibular left first molar to mandibular left canine and another well-defined unilocular radiolucency with a well-defined border was seen on the right side of the mandible, which is associated with the periapical region of partially erupted mandibular right canine and lateral incisor. a) OPG b) Axial section of CT

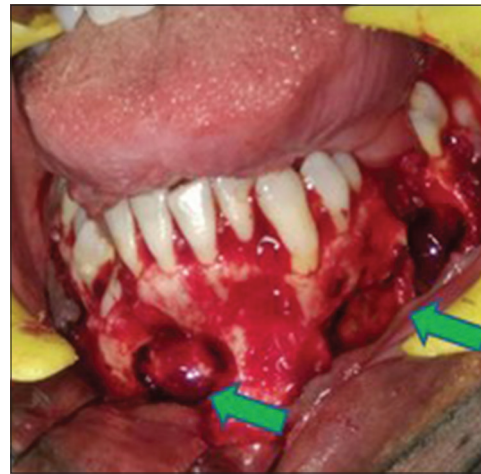


Figure 2: Intraoperative picture of cystic enucleation

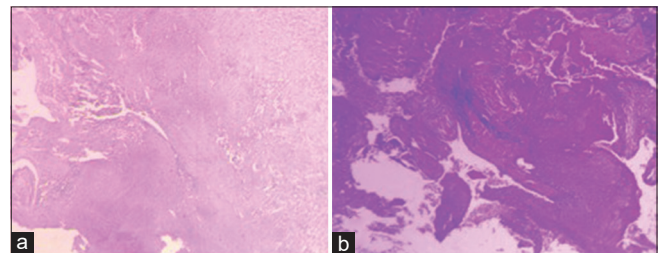


Figure 3: (a) Histopathological examination of the surgical specimen of the left side showed non-keratinized stratified squamous epithelial lining with inflammatory cell infiltration, suggested as radicular cysts on the left side. (b) The surgical specimen of the right side showed a cystic lumen, the lining of 2–3 cell layered thickness resembling the reduced enamel epithelium, capsule, and connective tissue showed few dentinoid like area and odontogenic cell rest, suggested as a dentigerous cyst on the right side

mandible usually indicative of dentigerous cyst.^[7] The diagnostic dilemma, in this case, arises from the presence of two atypical lesions simultaneously. Literature reviews that bilateral occurrence of jaw cysts is an uncommon phenomenon. Among the jaw cysts, OKC showed most common bilateral occurrence followed by the dentigerous cyst.^[8] An extensive search identified only 21 cases of bilateral dentigerous cysts in non-syndromic patients.^[4] Reported cases of bilateral radicular cyst in mandible at the posterior region are also present in literature.^[9,10] A rare case

of bilateral orthokeratinized odontogenic cyst in the mandible is also reported.^[8] An unusual case of multiple cysts in maxilla where the hereditary amelogenesis imperfecta caused the pulpal exposure and led to the formation of multiple radicular cysts was also reported.^[11] Any lesion related to the maxillofacial region requires prime intention and primary care as such lesions if undiagnosed or untreated properly can lead to various serious manifestations of the oral and maxillofacial region. In some circumstances, these can be fatal, so primary care is of utmost importance.

Conclusion

Many such reports are available documenting multiple benign odontogenic cysts in the same jaw. However, we have not yet come across non-syndromic cases having more than one type of cyst in the same jaw as in this patient. What also makes this case remarkable is that both the cysts are in areas which are not the most common ones for these respective lesions. Such atypical clinical and radiological finding can sometimes cause a great dilemma for the clinician in diagnosis and treatment planning of odontogenic lesions, which are already difficult to definitively diagnose without histopathological examination in a large number of cases. This case report aims to reinforce the importance of accurate radiographic analysis as well as clinical correlation to arrive at an accurate diagnosis to allow optimal treatment planning of apparently benign lesions of jaw.

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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