

Odontogenic Keratocyst of Anterior Mandible - A Rare Case Report

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ABSTRACT

Odontogenic cysts comprise a diverse group of developmental and inflammatory lesions arising within the jaws, often presenting diagnostic challenges because of overlapping clinical and radiographic features. odontogenic keratocyst is regarded as a distinct pathological entity because of its characteristic growth patterns and increased likelihood of recurrence rates compared with other jaw cysts. We report a 23-year-old female with a slowly progressive swelling involving the right lower anterior mandibular region for two years. Clinical examination revealed a well-defined vestibular swelling measuring approximately 2 × 2.5 cm extending from 42 to 44, associated with tenderness. Radiographic evaluation demonstrated a cystic lesion involving the anterior mandible in association with an impacted 43 raising differential diagnosis of dentigerous cyst, infected radicular cyst, lateral periodontal cyst. This case underscores the importance of including odontogenic keratocyst in the differential diagnosis of persistent anterior mandibular lesions, as atypical clinical presentation may obscure diagnosis and delay appropriate intervention.

Keywords: Odontogenic Keratocyst, Anterior Mandible, Case Report.

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INTRODUCTION:

Odontogenic keratocyst (OKC) is a developmental odontogenic cyst arising from remnants of the dental lamina and is recognized for its aggressive biological behaviour, local bone infiltration, and relatively high recurrence potential compared with other odontogenic cysts.¹

The lesion commonly affects individuals in the second and third decades of life and demonstrates a strong predilection for the posterior mandible, particularly the angle and ramus region. In a retrospective analysis, it has been reported posterior mandibular involvement in the majority of cases, with anterior mandibular presentation being relatively uncommon.²

When occurring in atypical anterior locations, OKCs may clinically and radiographically mimic inflammatory odontogenic lesions, often creating diagnostic

uncertainty. Furthermore, association with impacted teeth may resemble dentigerous cystic pathologies and further complicate diagnosis.^{3,4}

The present report describes a rare presentation of odontogenic keratocyst involving the anterior mandible, expanding the spectrum of atypical presentations reported in current literature.

CASE REPORT:

A 23-year-old patient presented to the Department of Oral and Maxillofacial Surgery, Sri Sai College of Dental Surgery with a chief complaint of swelling in the lower right front tooth region for approximately two years. The patient reported gradual enlargement of the swelling over time. History revealed occasional salty discharge from the region, when patient tried to puncture the lesion with a bobby pin.

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Extraoral examination revealed no obvious facial asymmetry. No palpable cervical lymphadenopathy was present and the overlying skin appeared normal.

Intraoral examination demonstrated a localized swelling measuring approximately 2×2.5 cm in the right mandibular vestibular region extending mesiodistally from 42 to 44 and supero-inferiorly from the marginal gingiva to the lower vestibule. The overlying mucosa was clinically intact without evidence of ulceration. On palpation, tenderness was elicited over the right lower vestibular region.

Based on clinical findings, provisional diagnosis of odontogenic cystic pathology was considered. Differential diagnoses included radicular cyst, residual cyst, lateral periodontal cyst, adeonomatoid odontogenic tumour and odontogenic keratocyst.

Radiographic evaluation demonstrated a well-defined radiolucent lesion involving the anterior mandibular alveolar process extending in relation to 42 to 44.

Under local anaesthesia, first FNAC was done revealing a curdy cheesy aspirate, following which crevicular incision was given a full-thickness mucoperiosteal trapezoidal flap was raised to expose the lesion. Careful identification, dissection and preservation of the mental nerve were performed, and the nerve was preserved throughout the procedure to prevent neurosensory

deficit. Complete enucleation of the cystic lining was carried out, followed by thorough curettage of the residual bony cavity. The impacted mandibular right canine (43) was surgically extracted because of its close association with the lesion. Modified Carnoy's solution was then applied to the bony cavity for the recommended duration as an adjunctive chemical cauterizing agent to eliminate residual epithelial remnants and satellite cysts, thereby reducing the risk of recurrence. The cavity was subsequently irrigated copiously with normal saline, and primary wound closure was achieved using 3-0 BBS interrupted sutures.

The excised specimen was submitted for histopathological examination, which demonstrated a cystic lesion lined by para-keratinized stratified squamous epithelium with a corrugated keratin surface, hyperchromatic palisaded basal cell layer, and focal epithelial-connective tissue separation consistent with odontogenic keratocyst.

The immediate postoperative period was uneventful. At the one-week follow-up visit, the patient presented with localized wound dehiscence accompanied by a small reactive fibrous tissue overgrowth (traumatic fibroma/granulation tissue) at the surgical site. The area was managed conservatively with local wound care, irrigation, maintenance of oral hygiene, and regular follow-up. Progressive secondary healing was observed over subsequent visits, without evidence of infection.

PRE OP



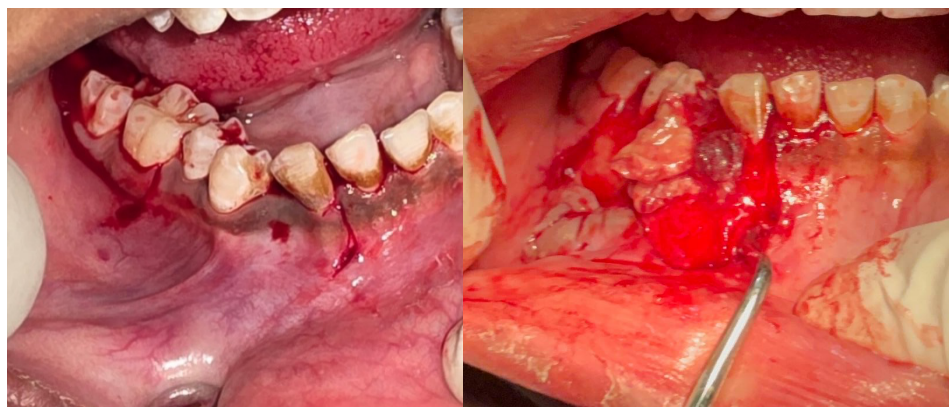
OPG



CBCT (axial view)

CBCT 3D

INTRA OP



a) crevicular incision

b) expose the lesion



c) curdy cheesy aspirate

d) impacted mandibular right canine



e) chemical cauterizing agent

f) excised specimen



POST OP (1 WEEK)
Localized wound dehiscence

POST OP (1 MONTH)

DISCUSSION:

Odontogenic keratocyst is biologically distinct from conventional odontogenic cysts because of increased epithelial proliferative potential, satellite cyst formation, epithelial budding, and infiltration into adjacent cancellous bone spaces. These biological characteristics largely account for its aggressive growth pattern and recurrence tendency. Browne demonstrated that intrinsic epithelial activity contributes significantly to persistent recurrence even after apparently complete surgical removal.⁵

The present case demonstrated an unusual anterior mandibular location. Most published literature consistently reports a posterior mandibular predominance. In a clinicopathologic review of 255 patients, Zhao et al. found that approximately 70% of lesions occurred within the posterior mandible, with anterior mandibular involvement representing only a small minority of cases.⁶ This makes the present case clinically significant because lesions occurring in atypical anterior sites are less frequently suspected during initial diagnosis.

The lesion in our case was associated with an impacted mandibular right canine (43). Although association of OKC with impacted teeth is recognized, these lesions are commonly mistaken for dentigerous cysts radiographically. Brannon, in one of the earliest comprehensive analyses of odontogenic keratocysts, reported tooth association in nearly one-fourth of lesions, frequently leading to diagnostic confusion during initial evaluation.⁷

An unusual feature in the present case was chronic purulent discharge elicited on palpation. Secondary infection in OKC is relatively uncommon but may obscure the underlying pathology by mimicking inflammatory odontogenic lesions such as infected radicular cysts or chronic dentoalveolar abscesses. Sikkerimath et al. described a similar atypical presentation of OKC associated with sinus tract formation in which inflammatory signs delayed definitive diagnosis.⁸

Because recurrence remains the greatest challenge in management of OKC, several adjunctive treatment strategies have been investigated. Stoelinga reported significantly lower recurrence rates when simple enucleation was supplemented with adjunctive procedures aimed at eliminating residual epithelial remnants and daughter cysts.⁹ Similarly, a systematic review by Al-Moraissi et al. concluded that adjunctive management strategies provide superior long-term outcomes compared with conservative surgery alone.¹⁰

In the present case, the lesion was managed by complete cyst enucleation followed by extraction of the impacted mandibular canine, with additional adjunctive management to minimize recurrence risk. The atypical anterior location, association with impacted tooth, and presence of secondary infection collectively make this case a clinically unusual presentation of OKC.

CONCLUSION:

Although uncommon in the anterior mandible, odontogenic keratocyst may mimic inflammatory odontogenic pathology when associated with impacted teeth and secondary infection. Early diagnosis and careful long-term surveillance remain essential because of its recurrence tendency.

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