CASE REPORT

Mandibular Teratoid Cyst Rare Manifestation: A Case Report

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Abstract

Teratoid cysts are rare developmental anomalies of the maxillofacial skeleton that pose significant diagnostic challenges, particularly when extensive and located in the edentulous mandible. Their radiological resemblance to more common cystic lesions can lead to misdiagnosis and suboptimal surgical outcomes.

This report presents a 60-year-old female with a 1-year history of pain and swelling in the left mandibular angle. Clinical examination revealed a soft, fluctuant, compressible swelling without purulence. Orthopantomography showed a radiolucent lesion spanning from the mental foramen to the condylar neck, with cortical thinning across the mandibular base. Cone beam computed tomography (CBCT) confirmed a unilocular cystic lesion with buccolingual expansion and a paper-thin cortex. Aspiration yielded white fluid preoperatively and serosanguinous fluid (≈30 mL) on the day of surgery. Under local anesthesia, enucleation was performed following biopsy, and histopathology confirmed a teratoid cyst.

The lesion's aggressive radiographic profile in an edentulous mandible underscores the importance of a broad differential diagnosis and meticulous preoperative planning. Conservative surgical management, tailored to the patient's age and bone integrity, resulted in successful healing without pathological fracture. This case highlights the critical need for diagnostic vigilance and individualized treatment strategies in managing rare mandibular cysts.

Keywords: Biopsy, Case report, Jaw disease, Teratoma, Tomography.

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Introduction

Clinical and radiological diagnostic dilemmas sometimes lead to a surgical disaster and failure of successful outcome. Radiolucencies involving the mandibular body and ramus, unilocular in nature, are a rare entity for which differential diagnoses such as retention cyst secondary to dentigerous, unicystic ameloblastoma, and traumatic bone cyst are often sought. In the attempt to provide a final diagnosis, aspiration and advanced radiological tools like cone beam computed tomography (CBCT) or computed tomography (CT), along with histopathological features, are essential. This paper presents a rare occurrence of a teratoid cyst within the mandibular body and ramus region of an elderly (60 years) female, emphasizing the importance of clinical evaluation, imaging findings, and histological analysis in achieving accurate diagnosis and optimal management without any morbidity.

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Case Description

A 60-year-old female presented with a primary complaint of dull aching pain for 1 year, localized to the left cheek region with no aggravating or relieving factors and nonradiating in nature. Pain was associated with swelling in the same region for 1 year, which gradually increased to the present size (Figs 1A to C). There was a past history of exfoliation of a tooth in the posterior mandible 1 year ago, which was not related to the present pain or swelling. Additionally, the patient reported no history of fever or pus discharge.

Facial asymmetry was observed because of the fullness on the left side. The swelling extended from the zygomatic arch to the lower border of the mandible supero-inferiorly and anteroposteriorly from the corner of the mouth to the posterior border of the ramus. Intraoral examination showed a well-demarcated, oval enlargement from the premolar region at the left posterior alveolar ridge extending to the retromolar trigone, obliterating the buccal vestibule; measuring roughly 4 × 3 cm in size, with normal overlying mucosa (Fig 2). On palpation, the swelling was soft in consistency, fluctuant, and tender. There were no signs of inflammation or lymphadenopathy associated with the swelling. Auscultation of the lesion showed no crepitus, indicating the lesion was nonvascular in nature.

The radiographic assessment included CBCT and an orthopantomogram (OPG), which displayed a significant radiolucent lesion accompanied by bony resorption on the left side of the posterior mandible, extending from distal to the mental foramen to the coronoid and neck of the condyle supero-inferiorly and posteriorly to the posterior border of the ramus, with a thinned-out base of the mandible (Figs 3A and B).

Initial aspiration of the content showed creamy white thick fluid of approximately 30 mL (Fig. 4A). The swelling was reduced completely after aspiration. Aspiration cytology showed red blood cells (RBCs), numerous cholesterol crystals, and inflammatory cells.

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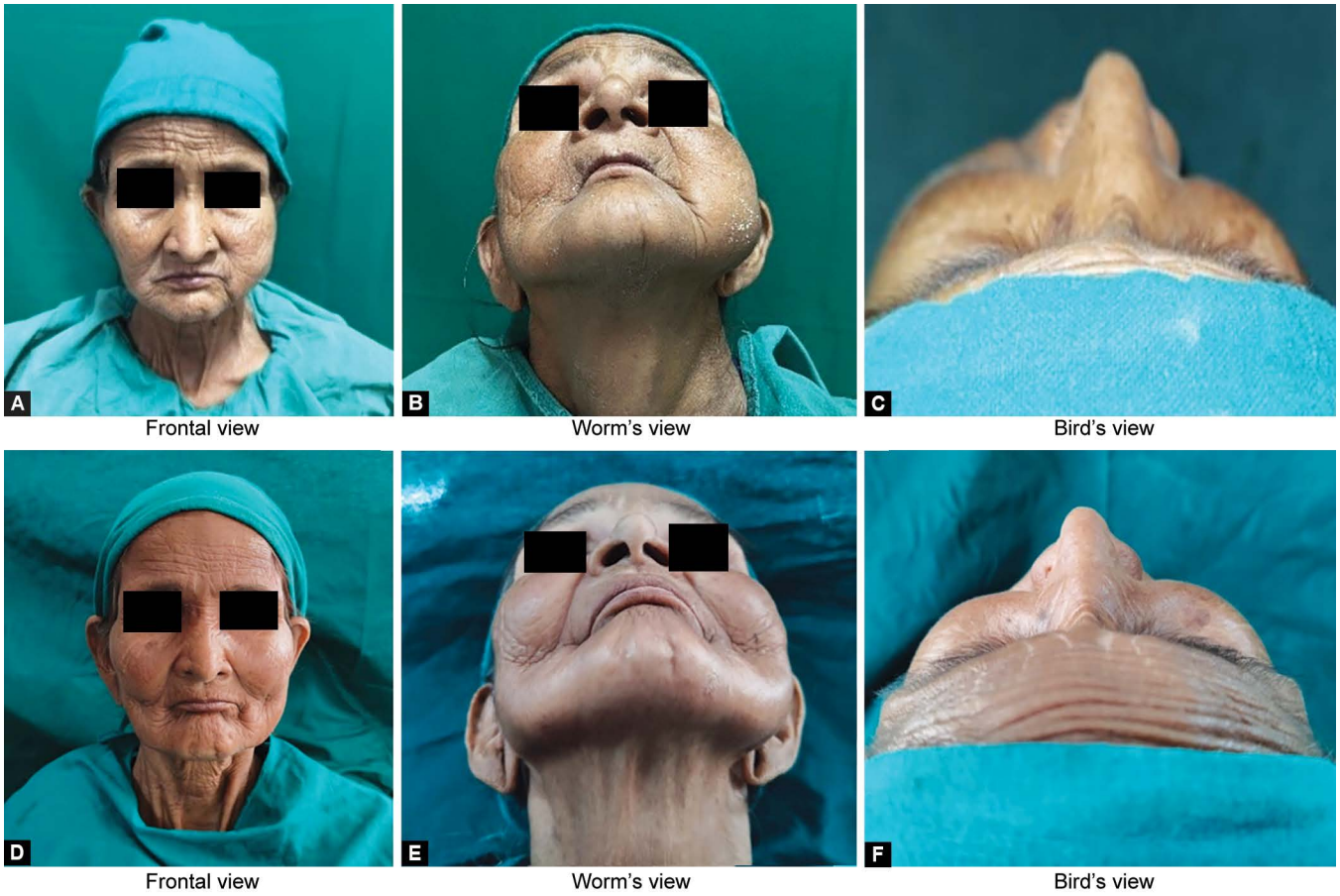


Figs 1A to F: Preoperative extraoral clinical photograph showing unilateral facial swelling localized to the left buccal region and postoperative extraoral clinical photograph

Fig. 2: An intraoral photograph illustrating a localized enlargement, approximately 4 × 3 cm in dimension, situated on the posterior segment of the left alveolar ridge

Based on the clinical, radiological, and aspiration cytology findings, differential diagnoses of residual dentigerous cyst, unicystic ameloblastoma, and odontogenic keratocyst (OKC) were considered.

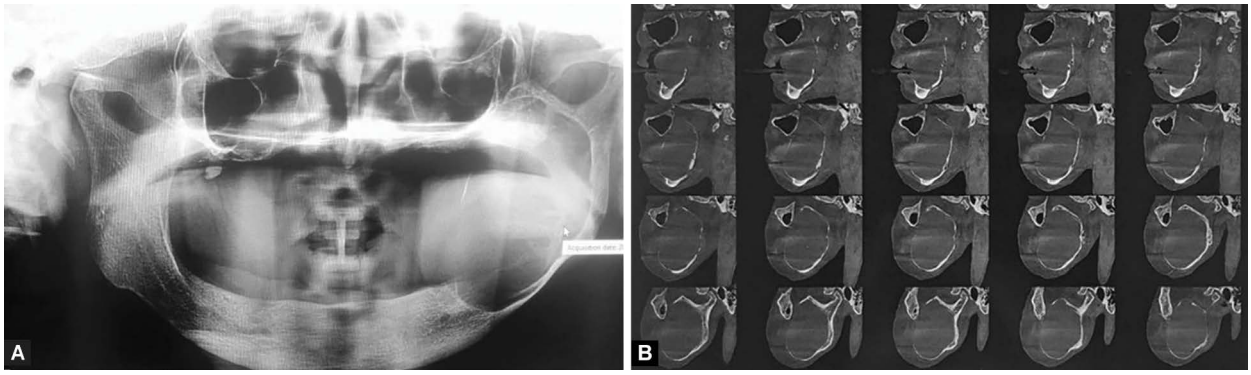
The patient was posted for surgery under local anesthesia. Before incision, aspiration was performed, which showed approximately 30 mL of serosanguinous fluid (Fig. 4B). Because of the serosanguinous-colored fluid indicative of a developmental cyst, most likely a residual cyst, OKC was ruled out due to the absence of white cheesy material, and ameloblastoma was unlikely due to limited bony expansion.

An intraoral crestal incision of approximately 35 mm was made using a diode laser to access the lesion (Fig. 5A). The intervention was initially to perform a biopsy, but considering the age and clinical scenario, it was decided to completely enucleate in the first instance. The area was exposed and enucleated (Fig. 5B). The lining was removed in pieces (Fig. 6A), leaving behind the remaining paper-thin cortical bone without any pathological fracture. The wound was irrigated with betadine and saline; hemostasis was achieved without exposing the neurovascular bundle, which was pushed to the posterior and inferior border. A betadine-soaked gauze piece was placed to prevent dead space, and the wound was subsequently closed using nonabsorbable black braided silk sutures (Fig. 6B). The enucleated cystic lining was sent for histopathological evaluation. The patient was followed up at 3 months and 6 months (Fig. 7). Routine antibiotic and analgesic drugs were given for the first week.

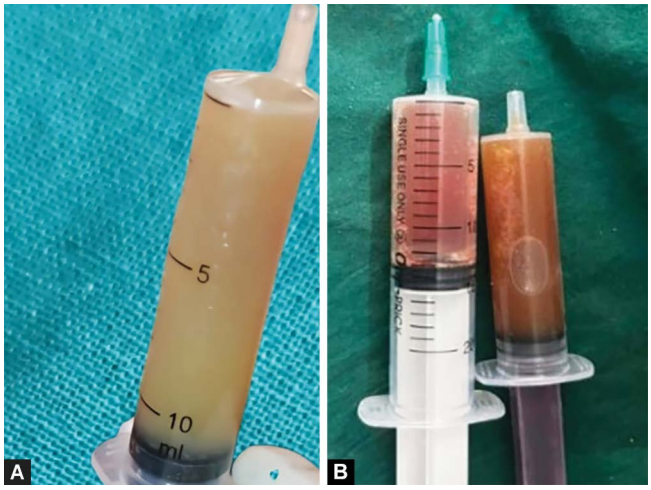
Microscopic analysis using hematoxylin and eosin (H&E) staining showed an interrupted cystic lining surrounded by a fibrous capsule. The capsule consisted of stratified squamous epithelium with variable thickness, featuring cuboidal to squamous cells. Several areas displayed microvilli-like structures, ciliated cells in the superficial layer, and single to multiple goblet cells with mucous pooling, which were positive for periodic acid–

Table 1: Histological types of cyst Meyer (1955)[1]

Category of cystic lesion	*Epithelial lining*	*Composition of the cyst lining*	*Contents*	*Origin/germ layers*
Epidermoid cyst	Simple squamous epithelium	Fibrous structure; devoid of dermal appendages	Lacks both sebaceous material and hair components	Upper section of pilosebaceous unit
True dermoid cyst	Keratinizing stratified squamous epithelium	Contains dermal appendages (e.g., hair follicles)	Keratin, sebum, hair, fat	Ectodermal origin
Teratoid cyst	The epithelial lining may range from keratinized squamous cells to respiratory-type pseudostratified columnar cells	Dermal appendages along with components from all three germ layers	The variable may encompass tissues from all germ layers	Ectoderm, mesoderm, and endoderm



Figs 3A and B: Imaging studies revealed an extensive radiolucent area within the left mandibular region, accompanied by evidence of bone resorption. Preoperative radiograph (A and B)



Figs 4A and B: (A) Aspiration yielded a straw-colored fluid; (B) Aspiration yielded a serosanguineous discharge preoperatively, indicating the presence of both serum and blood components

Schiff (PAS) staining (Figs 8A to E). Bony trabeculae with broad osteoid osteocytes and osteoblastic rimming were observed, along with glandular structures noted in focal areas. All these findings were indicative of a teratoid cyst.

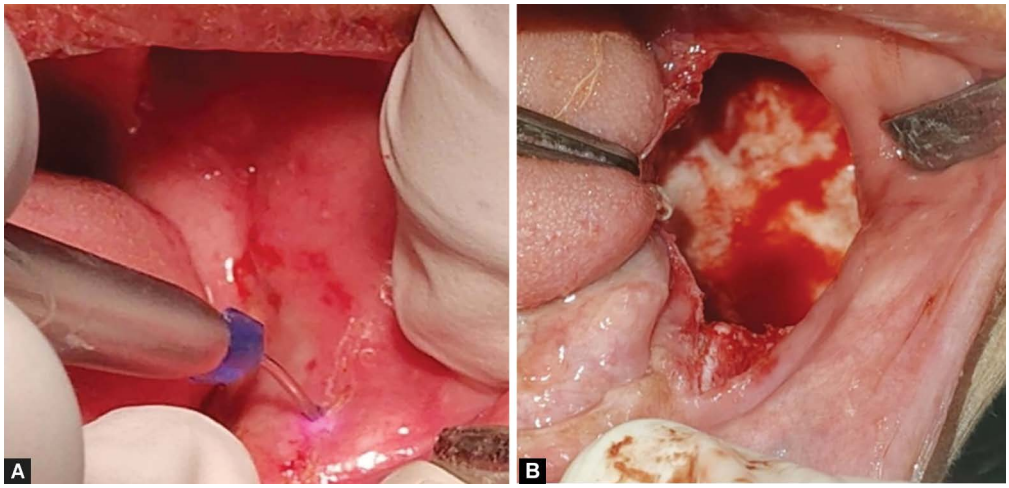
The patient was followed up over a period of 6 months, showing good bone regeneration without any complications or mandibular fracture (Figs 9A and B). No paresthesia or dysesthesia was observed, indicating the neurovascular bundle remained intact.

Discussion

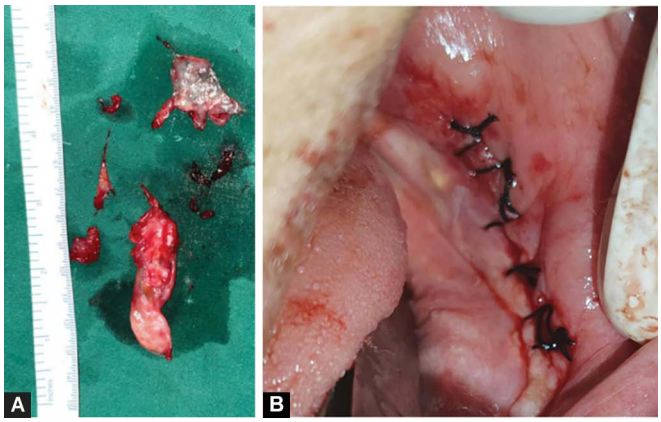
Teratoid cysts represent uncommon congenital anomalies originating from pluripotent cells, distinguished by the inclusion of tissue elements from the ectoderm, mesoderm, and endoderm. These cysts are viewed as a subtype of dermoid cysts and are categorized according to their microscopic tissue composition (Table 1).[1] Epidermoid and dermoid cysts are relatively rare in the neck and head area, comprising roughly 1.6% of all reported cases. Of these, nearly 23% are located in the floor of the mouth, where larger lesions can lead to functional disturbances including dysphagia, dysarthria, or even airway compromise.[2,3]

Teratoid cysts occurring in the floor of the mouth are exceptionally uncommon and frequently mistaken for more prevalent lesions such as ranulas, mucoceles, thyroglossal duct cysts, or lipomas due to their similar clinical presentation.[4] Due to their potential to enlarge and exert pressure on adjacent anatomical structures, prompt identification and complete surgical excision are essential to prevent adverse outcomes and recurrence. In this case, the presentation was different. The lesion was present in bone; hence, none of the features described earlier in the published literature were part of the present case. The signs and symptoms of the present case were typical, mimicking radiolucent lesions of the jaws. After opening the lesion for biopsy, considering the clinical and radiological findings, enucleation was performed, with follow-up planned for 2–3 years for further prognosis, as the lesion was in the mandible and the literature search yielded no similar entity (Supplementary Table S1).

Both epidermoid cysts and dermoid cysts have been observed to develop in areas of the head and neck other than the floor of the mouth.[5] In contrast, the presentation in our case was not in the soft tissue but in the mandibular bone. The term "teratoid



Figs 5A and B: Surgical enucleation under local anesthesia—intraoral photos: (A) Intraoral vestibular incision using diode laser; (B) Bony cavity after enucleation



Figs 6A and B: (A) Specimen showing excised cystic lining; (B) Closure of wound with nonresorbable suture

Fig. 7: Intraoral photograph of the site after 6 months

cyst" appears to be restricted to the oral cavity's sublingual location or floor of the mouth[5] in the published literature. Most researchers have agreed that development within a major intraosseous location is a relatively rare event, putting aside nomenclature issues and focusing on entities that can exhibit tri-lineage distinction. Moreover, it is rare for such entities to undergo malignant transformation.[5] Rarely do bones in the head and neck get involved.[6,7]

When diagnosing a teratoid cyst situated in the mandible, it is essential to distinguish it from several radiolucent lesions. These include OKC, unicystic ameloblastoma, central giant cell granuloma (CGCG), simple bone cyst, and multiple myeloma. In our case, the lesion was successfully enucleated with no postoperative complications, and histology showed an interrupted cystic lining and a fibrous capsule consisting of stratified squamous epithelium with variable thickness, featuring cells that ranged from cuboidal to squamous. Several areas displayed microvilli-like structures, ciliated cells in the superficial layer, and single to multiple goblet cells with mucous pooling, which were positive for PAS staining; bony trabeculae with broad osteoid, osteocytes, and osteoblastic rimming, along with glandular structures in focal areas, verified the diagnosis of a teratoid cyst.

The present case report adds to the limited literature on teratoid cysts in atypical locations and underscores the significance of considering this diagnosis in the differential diagnosis for slow-growing or congenital cystic lesions. Awareness of such rare presentations can aid in timely diagnosis and management, preventing potential complications.

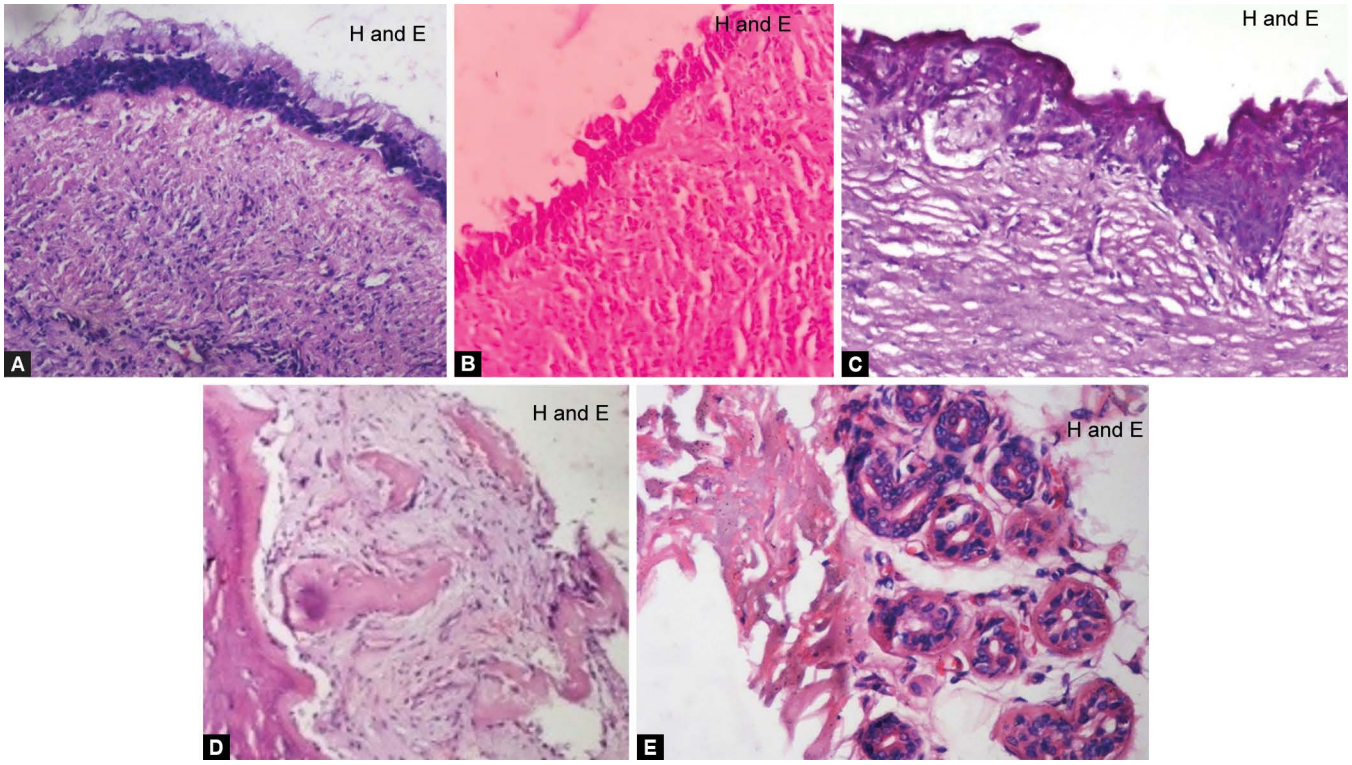
In this regard, a systematic literature search carried out in PubMed using the keyword "teratoid cyst" showed 41 search results from 1952 to 4/9/2025. None of the published cases were in the maxillofacial skeleton (Supplementary Table S1). In the Scopus database, 66 published articles were found, of which 51 were in English, and none occurred in bone except one in the maxillary sinus, which was a dermoid but not a teratoid (Supplementary Table S2).

Patient Perspective

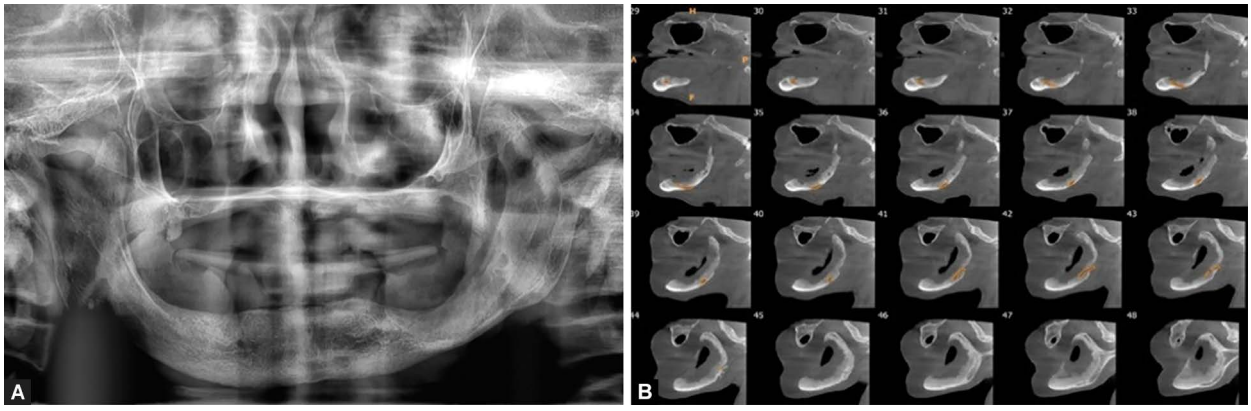
The patient showed improved clinical condition without any pathological fracture and was relieved of pain after treatment.

Conclusion

Being a typical extensive radiolucent lesion involving the body and ramus should prompt careful diagnosis and surgical intervention. In this particular case, a conservative approach without surgical morbidity, such as pathological fracture, is



Figs 8A to E: Histologic section (H&E staining, ×40): (A) H&E-stained section shows pseudostratified ciliated columnar epithelial lining with superficial ciliated cells, resembling features of gastrointestinal or respiratory epithelium; (B) H&E at ×40 shows pseudostratified ciliated columnar epithelial lining with microvilli-like structures; (C) PAS-positive stratified squamous epithelium with multiple goblet cells and mucous pooling; (D) Bony trabeculae with broad osteoid, osteocytes, and osteoblastic rimming; (E) Glandular structures resembling sweat glands with vesicular nuclei



Figs 9A and B: Postoperative radiographs shows radio-opacity indicating good bone regeneration

noteworthy, with no recurrence observed during the limited follow-up period at the time of submission. The teratoid cyst is benign in nature with good prognosis; however, regarding teratoid cysts in the mandible, no published literature is available to comment on prognostic factors.

Author Contributions

VSK, RO, PS operated and conceived the case report writing; KM, BA, SL, AM followed up the case; all authors read and finalized the manuscript for submission.

Informed Consent

The patient provided written consent for the use of clinical photographs.

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Supplementary Material

Supplementary Tables S1 and S2 are available online on the journal website.

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