



CHRONIC OSTEOMYELITIS OF THE MANDIBLE MIMICKING A FIBRO-OSSEOUS LESION IN A 7-YEAR-OLD CHILD: A CASE REPORT

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INTRODUCTION

Osteomyelitis is an inflammatory condition involving the medullary cavity, cortical bone, and periosteum that may arise secondary to odontogenic infection, trauma, or hematogenous spread. The mandible is more frequently affected than the maxilla owing to its relatively poor vascularity.^[1] Chronic osteomyelitis in children is relatively uncommon because of the rich blood supply of the developing jaws. Clinical manifestations range from pain, swelling, and sinus tract formation to asymptomatic cortical expansion.^[2]

Radiographically, chronic osteomyelitis may present as mixed radiolucent-radiopaque lesions, diffuse sclerosis, periosteal reaction, or sequestration. Occasionally, extensive reactive bone formation may resemble fibro-osseous lesions such as fibrous dysplasia, posing a diagnostic challenge.^[3] The present report describes an unusual case of chronic osteomyelitis in a pediatric patient presenting with a ground-glass radiographic appearance mimicking a fibro-osseous lesion.

CASE REPORT

A 7-year-old male patient reported to the Department of Oral and Maxillofacial Surgery with a chief complaint of painless swelling over the left cheek region for six months. The swelling had gradually increased in size without any associated pain, fever, pus discharge, or paraesthesia.

Extraoral examination revealed facial asymmetry due to a diffuse swelling involving the left mandibular body region. The overlying skin appeared normal.

Intraoral examination demonstrated

1. Grossly carious primary mandibular left second molar (75)
2. Buccal vestibular obliteration
3. Bony hard expansion of the left posterior mandibular cortex
4. Absence of sinus tract or purulent discharge

CBCT examination revealed diffuse expansion of the left posterior mandibular segment extending from the deciduous molar region toward the angle of the mandible. Increased trabecular density with a

characteristic ground-glass appearance was observed. Cortical thickening and remodeling were evident around the developing permanent tooth buds.

Based on the radiographic findings, differential diagnoses included

1. Fibrous dysplasia
2. Juvenile ossifying fibroma
3. Chronic diffuse sclerosing osteomyelitis
4. Chronic osteomyelitis

An incisional biopsy was performed under local anaesthesia. Histopathological examination revealed fibrovascular connective tissue stroma with chronic inflammatory cell infiltrate predominantly composed of lymphocytes and plasma cells along with reactive bone formation and sclerosis, consistent with chronic osteomyelitis.

Based on clinic radiological and histopathological correlation, a final diagnosis of chronic osteomyelitis of the left posterior mandible secondary to odontogenic infection associated with tooth 75 was established.

Considering the extent of involvement, surgical management was planned under general anesthesia. Extraction of tooth 75 was performed followed by decortication and saucerization of the affected mandibular segment. Thorough curettage and irrigation were carried out before closure.

Postoperative healing was satisfactory. Reduction in facial swelling and improvement in facial symmetry were observed during follow-up.



Figure 1: Preoperative extraoral photograph showing left facial swelling.

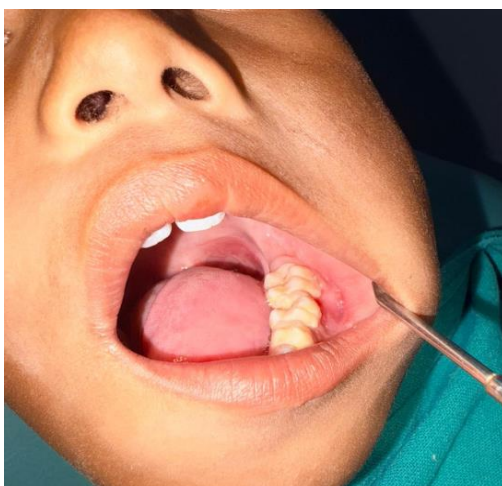


Figure 2: Intraoral photograph showing vestibular obliteration on left lower posterior region.

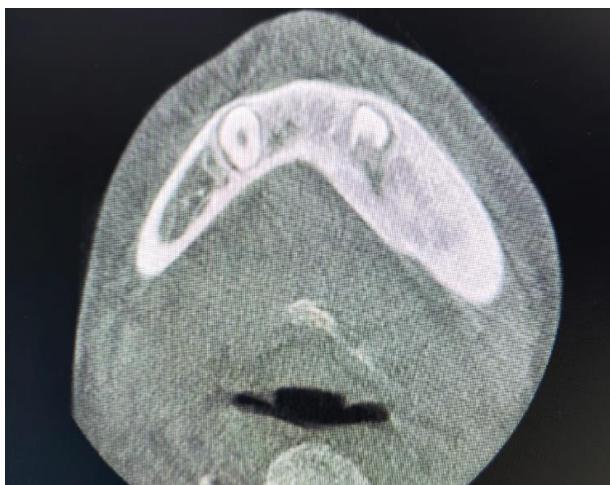


Figure 3: Axial view of CBCT showing ground glass appearance wrt left posterior lower region of mandible.

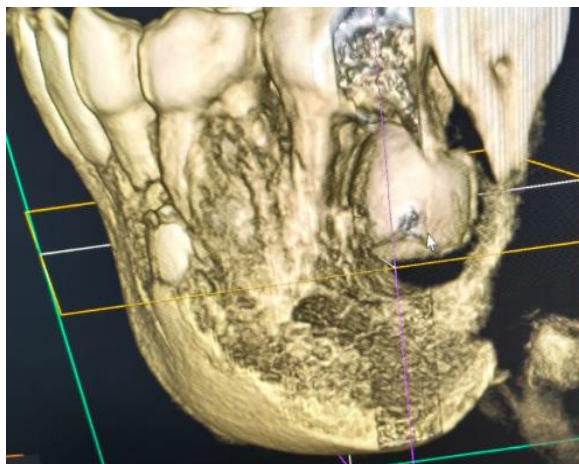


Figure 4: 3D view of CBCT showing erosion of buccal cortical plate along with decayed tooth wrt 75 and erupting tooth bud.

HISTOPATHOLOGY REPORT	
Registration No: 359473	Receipt No: 1675163
Name: Vedansh	Age/Sex: 08/male
Biopsy No: 35/26	Address: moradabad
Site:	Type of Biopsy: Incisional
Date of Biopsy: 01/05/26	Department: OMFS
Date of Receiving: 01/05/26	Referred by: Dr. Gaurav
Date of Reporting: 15/05/26	
CLINICAL FEATURES: swelling present on the lower left side of jaw RADIOGRAPHIC FINDINGS: CBCT reveals ground glass appearance in left side molar region. PROVISIONAL DIAGNOSIS: Chronic osteomyelitis GROSS SPECIMEN: Received small bit of specimen in 10% buffered formalin, grayish white in colour, hard in consistency. HISTOPATHOLOGIC FINDINGS: The submitted Haematoxylin & Eosin stained decalcified hard tissue sections shows bony trabeculae. The connective tissue stroma shows loosely arranged collagen fibers in association with fibroblasts and chronic inflammatory cells infiltrate predominantly consisting of lymphocytes. HISTOPATHOLOGIC DIAGNOSIS: Histopathologic features are suggestive of "Chronic osteomyelitis" Dr. Priyanka Rastogi Professor & HOD Dr. Sachin Kumar Professor Dr. Rudra Bhardwaj Reader ALL OR NO PART OF THE LAB REPORT SHOULD BE REPRODUCED OR DUPLICATED WITHOUT PRIOR INTIMATION TO THE LABORATORY. ALL THE TISSUE BLOCKS WILL BE MAINTAINED UPTO MAXIMUM PERIOD OF 30 DAYS FROM THE DATE OF REPORT. Biopsy No. 35/26 Note: Details in the report is as per the requisition form. 1 1	

Figure 5: Histopathology report of incisional biopsy showing chronic osteomyelitis.



Figure 6: Intraoral exposure showing exposed sequestrum.



Figure 7: Decortication lines were marked with rotatory handpiece with 702 bur following exposure by crevicular incision.

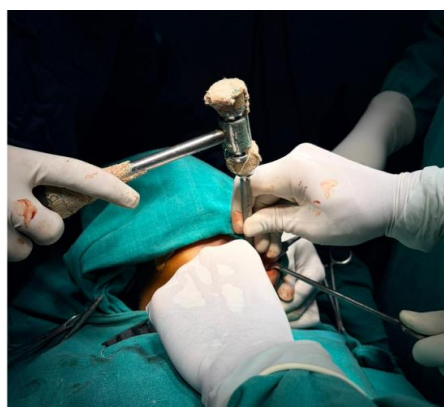


Figure 8: Decortication carried out with chisel and mallet following osteotomy cuts.



Figure 9: following decortication and extraction of 75.



Figure 10: Saucerization was done with rosehead bur.

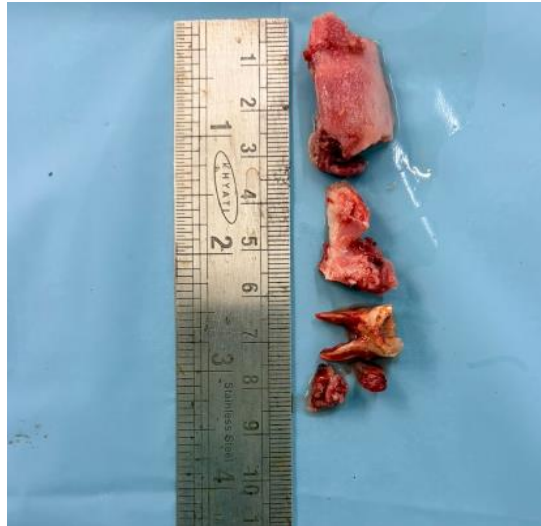


Figure 11: specimen for histopathological examination.

DISCUSSION

Chronic osteomyelitis of the jaws is uncommon in pediatric patients and is usually associated with odontogenic infections. Untreated dental caries may act as a persistent source of infection, resulting in chronic inflammation and reactive bone changes.^[4] The present case is noteworthy because of its unusual radiographic presentation. Ground-glass appearance is classically associated with fibrous dysplasia and other fibro-osseous lesions. However, reactive bone formation secondary to chronic inflammation may occasionally produce similar radiographic features.^[5] CBCT has become an indispensable imaging modality in maxillofacial diagnosis because of its ability to accurately demonstrate cortical expansion, trabecular architecture, and lesion extent. Nevertheless, radiographic findings alone may not be sufficient for definitive diagnosis.^[6]

Histopathological examination remains the gold standard for differentiating chronic osteomyelitis from fibro-osseous lesions. In the present case, biopsy findings demonstrated chronic inflammatory infiltrate and reactive osseous changes, confirming the diagnosis.^[7]

The cornerstone of treatment includes elimination of the infectious source, surgical debridement, and removal of necrotic or sclerotic bone. Decortication improves vascularity and promotes bone healing by exposing healthy cancellous bone.^[8] The favourable postoperative outcome observed in this patient supports the effectiveness of decortication and saucerization in managing chronic mandibular osteomyelitis in children.

CONCLUSION

Chronic osteomyelitis should be considered in the differential diagnosis of paediatric mandibular lesions presenting with diffuse sclerosis and ground-glass radiographic appearance. Histopathological confirmation is essential when imaging findings mimic fibro-osseous lesions. Early diagnosis and appropriate surgical management can result in successful resolution of

disease and preservation of mandibular growth and function.

Informed Consent

Written informed consent for treatment, clinical photography, and publication of this case report was obtained from the patient's parent/legal guardian.

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