ORIGINAL RESEARCH PAPER
Volume - 14 | Issue - 08 | August - 2025 | PRINT ISSN No. 2277 - 8179 | DOI : 10.36106/ijsr
INTERNATIONAL JOURNAL OF SCIENTIFIC RESEARCH

MULTI-QUADRANT FLORID CEMENTO-OSSEOUS DYSPLASIA: CLINICAL, RADIOGRAPHIC, AND THERAPEUTIC PERSPECTIVES

Maxillofacial Surgery

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ABSTRACT

jaws characterized by the replacement of normal bone with fibrous tissue and aberrant osseous deposits. Often asymptomatic, its diagnosis is usually incidental. This case report details the presentation, radiographic features, conservative surgical management, and follow-up of a symptomatic FPCOD case in a 38-year-old female.

KEYWORDS

Florid Cemento-Osseous Dysplasia, fibro-osseous lesion, jaw pathology, radiopaque lesions, conservative surgery.

INTRODUCTION

Florid Periapical Cemento-Osseous Dysplasia (FPCOD) represents a distinct clinical and radiographic entity within the spectrum of cemento-osseous dysplasias—a group of non-neoplastic fibro-osseous lesions affecting the jaws. FPCOD is predominantly observed in middle-aged women and is characterized by its bilateral and symmetrical involvement of multiple jaw quadrants, often encompassing both maxillary and mandibular periapical regions. Although the precise aetiology of the condition remains unclear, it is widely regarded as idiopathic and non-hereditary.

The condition typically progresses through three radiographic phases: an initial radiolucent stage where normal bone is replaced by fibrous tissue; a transitional mixed radiolucent-radiopaque stage reflecting early mineralization; and a mature radiopaque stage marked by dense sclerotic masses encased within a radiolucent margin. These evolving imaging features, coupled with the lesion's multifocal and symmetrical distribution, serve as valuable diagnostic clues distinguishing FPCOD from other sclerotic lesions such as idiopathic osteosclerosis, ossifying fibroma, chronic osteomyelitis, and Paget's disease of bone.

Importantly, most cases of FPCOD are asymptomatic and are often identified incidentally during routine dental radiographic assessments. However, failure to correctly diagnose the condition may result in unwarranted interventions—such as invasive biopsy or surgical debridement—that can compromise patient outcomes. The sclerotic bone involved in FPCOD often exhibits poor vascularity, rendering it vulnerable to secondary infection and complicating healing, thereby elevating the risk for osteomyelitis following unnecessary procedures [1,2].

Hence, timely recognition and accurate diagnosis are critical for guiding appropriate management strategies. A conservative approach focused on monitoring and preventive care is generally favored unless complications arise. Clinicians must maintain a high index of suspicion and be well-versed in the radiographic patterns and clinical behavior of FPCOD to provide effective care while mitigating the risk of iatrogenic harm.

CASE PRESENTATION

A 38-year-old Indian female presented to the Department of Oral and Maxillofacial Surgery with complaints of pain and numbness localized to the mandibular anterior region. The patient's medical history was non-contributory. On extraoral examination, there was no evidence of facial asymmetry or lymphadenopathy. Intraorally, the patient demonstrated good oral hygiene and was found to have prosthetic restorations on teeth 42, 41, 31, and 32. The patient was advised to undergo an OPG and CBCT.

RADIOGRAPHIC EVALUATION

OPG and CBCT revealed multiple, well-defined radiopaque masses with peripheral radiolucent rims in regions 44, 45, 33, and the mesial root of 46. Endodontic treatments were noted irt 32 and 42.

DIAGNOSIS

Based on clinical and imaging findings, a provisional diagnosis of Florid Periapical Cemento-Osseous Dysplasia was made.

DIFFERENTIAL DIAGNOSIS

The lesion was differentiated from:

- Chronic Sclerosing Osteomyelitis – symptomatic with non-vital teeth
- Paget's Disease – systemic involvement and biochemical changes
- Ossifying Fibroma – solitary, expansile neoplasm
- Idiopathic Osteosclerosis – non-expansile radiopacity without rim

Biopsy was deferred due to risks associated with poor vascularity and infection.

MANAGEMENT

PREVENTIVE APPROACH

Post-treatment preventive care focused on maintaining optimal oral hygiene to support healing and prevent secondary complications. The patient was advised to adhere to a stringent oral hygiene regimen, including mechanical plaque control and appropriate use of adjunctive aids. Periodic clinical evaluations were recommended at intervals

ranging from six to twelve months to monitor the stability of the lesion and detect any signs of recurrence or progression. To mitigate periodontal risk, chlorhexidine mouth rinses at a concentration of 0.12% were prescribed, particularly during periods of increased susceptibility to plaque accumulation or inflammation

SURGICAL INTERVENTION

Under local anaesthesia achieved using 2% lidocaine with 1:100,000 epinephrine, a full-thickness mucoperiosteal flap was reflected in the affected mandibular quadrant to access the lesion. The surgical approach involved a crestal incision complemented by vertical releasing incisions to ensure adequate exposure and minimize tissue trauma. Upon elevation of the flap, the underlying cortical bone was visualized, revealing dense, sclerotic, and avascular characteristics typical of Florid Periapical Cemento-Osseous Dysplasia.

Meticulous debridement was performed until healthy bleeding bone was reached at the base of the lesion to promote healing and vascularization. The surgical site was thoroughly irrigated using sterile normal saline and 0.12% chlorhexidine solution to ensure cleanliness and reduce microbial load. Finally, the flap was repositioned and secured using 3-0 resorbable sutures (chromic gut or Vicryl), achieving a tension-free closure through strategic flap advancement to support optimal healing and minimize postoperative complications.

POSTOPERATIVE CARE

Postoperatively, the patient was prescribed a course of amoxicillin-clavulanic acid 625 mg to be taken three times daily for seven days to prevent potential infection at the surgical site. For pain management, ibuprofen 400 mg was recommended thrice daily or as needed to alleviate discomfort. Antiseptic care was reinforced with the use of chlorhexidine gluconate 0.12% rinse administered twice daily to maintain local hygiene and reduce microbial colonization.

The patient was advised to follow a soft diet during the initial healing phase to avoid trauma to the surgical site. Scheduled follow-ups were arranged at one week, one month, and subsequently every three months to monitor clinical progress and radiographic healing.

DISCUSSION

Florid Periapical Cemento-Osseous Dysplasia (FPCOD) is most commonly identified incidentally during routine dental imaging, such as panoramic radiographs or cone-beam computed tomography scans. Because patients are often asymptomatic, these lesions are usually detected when radiographs are taken for unrelated dental concerns—such as prosthetic planning, endodontic evaluation, or routine check-ups.

Radiographically, FPCOD exhibits a well-documented progression that aids in its diagnosis. Initially, lesions appear as radiolucent areas in the periapical region. As the condition matures, it transitions into a mixed radiolucent-radiopaque stage, eventually becoming predominantly radiopaque with a narrow radiolucent peripheral halo. The symmetry and multifocal nature of these lesions, affecting multiple quadrants often bilaterally, are hallmark characteristics that distinguish FPCOD from other fibro-osseous pathologies like ossifying fibroma, chronic osteomyelitis, or idiopathic osteosclerosis. These features are critical for clinicians in making an accurate diagnosis and avoiding unnecessary surgical interventions.

While most cases do not require treatment, secondary complications such as infection, cortical bone exposure, or traumatic insult may necessitate surgical management. In these instances, careful surgical planning is essential to avoid further compromising the poorly vascularized sclerotic bone, which is prone to delayed healing and increased risk of postoperative osteomyelitis.

Historically, FPCOD has demonstrated a demographic predilection toward middle-aged African American and Asian women. However, emerging literature and clinical reports suggest that geographic and ethnic variability may be broader than previously assumed. Cases reported in the Indian population, though relatively infrequent, affirm the global prevalence and highlight the importance of clinician awareness regardless of regional patient demographics. Such insights reinforce the necessity for informed diagnostic protocols across diverse populations [3].

CONCLUSION

Florid Periapical Cemento-Osseous Dysplasia (FPCOD) is a non-neoplastic, fibro-osseous condition that replaces normal bone architecture with dense, sclerotic tissue and fibrous components in the periapical regions of the jaw. Its benign and self-limiting nature means that, in the absence of symptoms or secondary infection, it does not require surgical intervention or aggressive treatment. Conservative management—centering on preventive care, clinical observation, and radiographic surveillance—is therefore the gold standard.

Timely identification is critical because FPCOD can radiographically resemble other potentially aggressive or systemic bone pathologies, such as Paget's disease, chronic osteomyelitis, or neoplastic conditions like ossifying fibroma. Misdiagnosis may lead to unnecessary biopsies or surgical procedures, increasing the risk of complications such as infection, poor wound healing due to avascular sclerotic bone, or even osteomyelitis. Moreover, the condition's asymptomatic presentation—often discovered incidentally on routine imaging—demands a clinician's awareness and diagnostic confidence to distinguish it from similar jaw lesions.

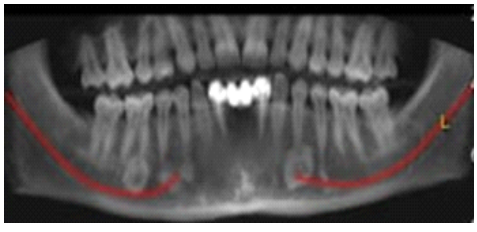
With proper monitoring and patient education, clinicians can minimize invasive interventions and tailor follow-up based on lesion activity or changes. Periodic radiographs help confirm lesion stability and ensure that any signs of progression, discomfort, or functional impairment are promptly addressed. Ultimately, clinical vigilance, coupled with informed decision-making, supports optimal outcomes for patients diagnosed with FPCOD.

ETHICAL STATEMENT

All procedures were conducted according to institutional standards and ethical guidelines. No experimental techniques were employed. Patient anonymity was maintained throughout.

PATIENT CONSENT

Written informed consent was obtained from the patient for participation and publication, including clinical and radiographic data.



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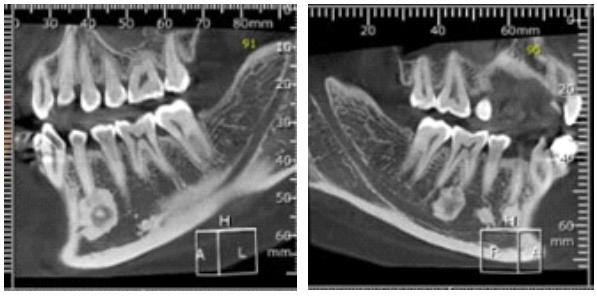

CBCT IMAGES OF THE PATIENT

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