



## Expansive Focal Cemento-Osseous Dysplasia

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### ABSTRACT

**Aim:** To present a case of expansive focal cemento-osseous dysplasia and emphasize the importance of differential diagnosis.

**Background:** Cemento-osseous dysplasia is categorized into three subtypes on the basis of the clinical and radiographic features: Periapical, focal and florid. The focal type exhibits a single site of involvement in any tooth-bearing or edentulous area of the jaws. These lesions are usually asymptomatic; therefore, they are frequently diagnosed incidentally during routine radiographic examinations. Lesions are usually benign, show limited growth, and do not require further surgical intervention, but periodic follow-up is recommended because occasionally, this type of dysplasia progresses into florid osseous dysplasia and simple bone cysts are formed.

**Case report:** A 24-year-old female patient was referred to our clinic for swelling in the left edentulous mandibular premolar-molar region and felt discomfort when she wore her prosthetics. She had no pain, tenderness or paresthesia. Clinical examination showed that the swelling in the posterior mandible that was firm, nonfluctuant and covered by normal mucosa. On panoramic radiography and computed tomography, a well-defined lesion of approximately 1.5 cm in diameter of mixed density was observed.

The swelling increased slightly in size over 2 years making it difficult to use prosthetics and, therefore, the lesion was totally excised under local anesthesia, and surgical specimens were submitted for histopathological examination. The histopathological diagnosis was focal cemento-osseous dysplasia.

**Conclusion:** In the present case, because of the increasing size of the swelling making it difficult to use prosthetics, young age of the patient and localization of the lesion, in the initial examination, cemento-ossifying fibroma was suspected, and the lesion was excised surgically; the histopathological diagnosis confirmed it as focal cemento-osseous dysplasia.

**Clinical significance:** We present a case of expansive focal cemento-osseous dysplasia. Differential diagnosis is essential because ossifying fibroma is a real neoplastic entity.

**Keywords:** Dysplasias, Odontogenic, Jaw, Case study.

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**Conflict of interest:** None declared

### BACKGROUND

Cemento-osseous dysplasia (COD) is a cementum and/or bone-producing nonneoplastic condition of the jaw. Although the etiology and pathogenesis of COD are unknown, these lesions are thought to occur in response to reactive or dysplastic changes in the periodontal ligament and/or the medullary bone.<sup>1,2</sup> Since, the publication of the second edition of the World Health Organization's (WHO) histological classification of tumors, focal cemento-osseous dysplasia (FocCOD) has been recognized as a form of COD.<sup>1</sup> Several clinicopathologic forms of cemento-osseous dysplasia share the same histological spectrum, which consists of admixtures of bone and cementum-like material in a fibrous stroma. This condition is categorized into three subtypes on the basis of the clinical and radiographic features: Periapical, focal and florid. The focal-type dysplasia exhibits a single-site involvement in any tooth-bearing or edentulous areas (areas that bore teeth at some time) of the jaw. Lesions show limited growth and rarely exceed a diameter of 2 cm.<sup>1,3</sup>

### CASE REPORT

A 24-year-old female patient was referred to our clinic for swelling in the left mandibular posterior region without complaints of pain, tenderness or paresthesia. Clinical examination showed that the swelling in the edentulous mandibular premolar-molar region was firm, well-circumscribed, nonfluctuant and covered by normal mucosa (Fig. 1). There was a buccolingual expansion of the cortical bone. The patient was in good health and had no history of previous trauma or contributory medical factors. A panoramic radiograph showed well-circumscribed radiolucency with several opacities in the left posterior mandibular region (Fig. 2). The lesion was irregularly shaped.

On axial and coronal computed tomography (CT) images, a lesion of approximately 1.5 cm diameter with well-defined borders and of mixed density was observed (Figs 3 and 4). Cortical expansion was noted and the lingual surface of the cortical bone was thin but intact.

Under local anesthesia, the lesion was enucleated by an intraoral approach (Figs 5 and 6). Curettage of the cavity was performed after enucleation, by using a curette and rotary instruments. During the procedure, the inferior alveolar nerve was identified and preserved. Postoperatively, the patient received systemic antibiotics, analgesics and mouthwash for 7 days. The following postoperative instructions were given to the patient regarding medication: Amoxicillin and clavulanate (Amoksilav BID, 1 gm, Sandoz, Turkey) twice a day for 7 days, flurbiprofen (Majezik film tablet, 100 mg, Sanovel, Turkey), and 0.2% chlorhexidine mouthwash [Klorhex (2%), Drogosan, Turkey] twice a day. One week after the operation, during the postoperative visit, the suture was removed; at this point, healing progressed normally and there were no postoperative complications.

The surgical specimens were submitted for histopathological examination. Microscopically, a cellular fibrous stroma containing an admixture of irregular trabeculae of bone and rounded globules of cementum-like material was observed. In some areas, fusion of bone and cementum was evident, with formation of dense sheets of relatively acellular calcified tissue (Fig. 7). A histopathological diagnosis of FocCOD was confirmed.

## DISCUSSION

The etiology of FocCOD is unknown. Whether trauma, caries, periodontal disease, infection, or systemic diseases could be triggering factors are still to be elucidated. Zegarelli et al<sup>4</sup> suggested hormonal imbalance as a likely cause or contributory factor. In the presented case, medical and dental histories did not provide any etiologic indications.

FocCOD occurs at a greater frequency in women than in men, with the highest prevalence in the fourth and fifth decades of life. It presents as solitary lesions in the posterior jaw, most often the mandible and usually at the site of a previous tooth.<sup>1,2</sup>

On radiographic images, most FocCODs appear predominantly opaque or with a mixed lucency/opacity. There are three different patterns of radiographic borders: (1) A defined lesion without a sclerotic border, (2) a defined margin with a sclerotic border and (3) an ill-defined border.<sup>5</sup> In the present case, the lesion was well defined and had a partial sclerotic border with mixed density.

FocCODs are usually asymptomatic; therefore, they are frequently diagnosed incidentally during routine radiographic examinations.<sup>5</sup> MacDonald-Jankowski<sup>6</sup>

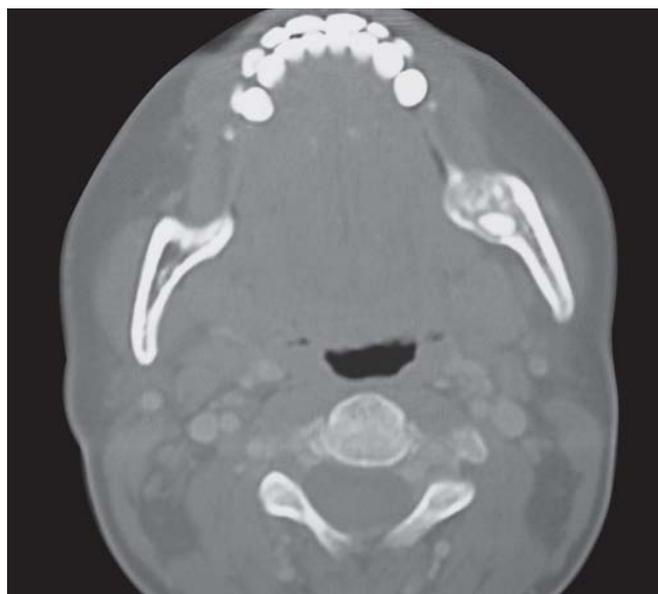
reported that pain and swelling, occurring at rates of 25% and 28% respectively, occurred together in FocCOD and Su et al<sup>5,7</sup> reported that 36% patients displayed 'some



**Fig. 1:** Intraoral imaging shows a mandibular lesion with intact overlying mucosa causing buccolingual expansion of the cortical bone

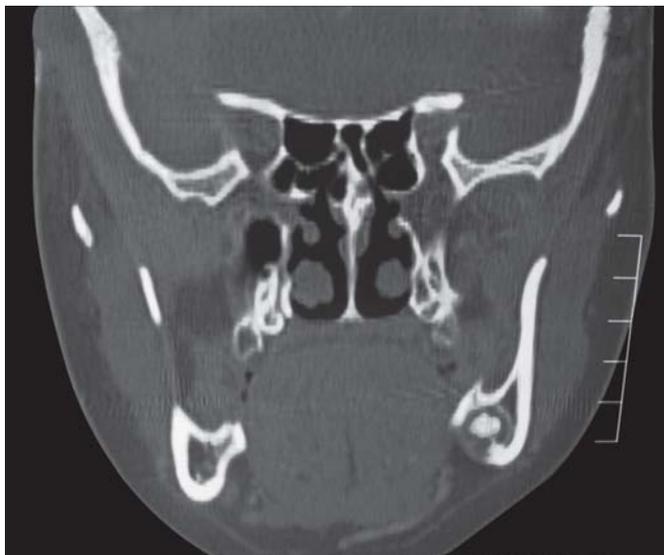


**Fig. 2:** Panoramic radiograph shows well-circumscribed radiolucency with several opacities in the left posterior mandibular region



**Fig. 3:** An axial CT section of FocCOD shows an approximately 1.5 cm (diameter), well-defined lesion of mixed density in the posterior mandible

swelling' with mild discomfort. In the current case, the patient suffered from swelling inside the mouth and felt discomfort when she wore her prosthetics.



**Fig. 4:** Coronal CT showing the lesion with expansion and thinning but intact lingual surface of cortical bone



**Fig. 5:** Mucoperiosteal flap was removed and the entire lesion was exposed



**Fig. 6:** Curettage of the cavity was carried out after enucleation, by using a curette and rotary instruments

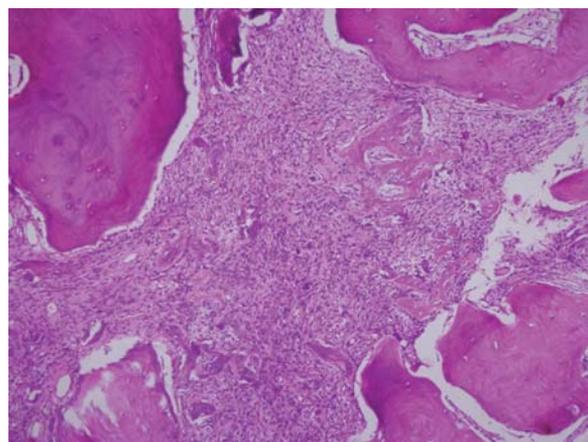
The clinical, radiographic and microscopic differential diagnosis of FocCOD include the finding of conventional ossifying fibroma (OF), a benign neoplasm.<sup>2,3,5,7,8</sup> Both FocCOD and OF are more common in the posterior mandible, although a significant number of OFs occur in the maxilla. Both tend to be circumscribed and can be radiolucent, mixed or radiopaque. However, unlike FocCOD, OFs can cause large cortical expansion and characteristically expand the inferior border of the mandible. The radiologic features of FocCOD (especially the well-defined lesions) are not sufficiently specific to differentiate them from small OFs. A notable difference between FocCOD and OF is the intraoperative finding. It is known that OF usually presents as a solid mass, whereas FocCOD usually adheres to the surrounding tissues, as observed in the presented case; this is because the lesion spreads to the inside of the bone cortex in this patient with FocCOD.<sup>2,7</sup>

Because the lesion in this condition is nonneoplastic, further surgical intervention is not necessary once the diagnosis has been established, although periodic follow-up is recommended, because occasionally, this condition progresses into florid osseous dysplasia and simple bone cysts are formed within an area of COD.<sup>7,8</sup>

## CONCLUSION

FocCOD may be the most common type of osseous lesion of the jaw and is often asymptomatic, focal and mixed radiolucent or radiopaque with well/or ill-defined borders in tooth-bearing areas. Complete surgical removal is not required after a diagnosis is made, but transformation into florid cemento-osseous dysplasia is possible; therefore, periodic follow-up is recommended.

The differential diagnosis of FocCOD includes conventional OF. In the present case, in the initial examination, OF was suspected because of the increasing



**Fig. 7:** Histological findings showing a cellular fibrous stroma containing an admixture of irregular trabeculae of bone and rounded globules of cementum-like material

size of the swelling preventing the use of prosthetics, the young age of the patient and the localization of the lesion; therefore, the lesion was excised surgically.

### CLINICAL SIGNIFICANCE

Because ossifying fibroma is a real neoplastic entity to make a differential diagnosis is essential.

### ACKNOWLEDGMENT

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