

# Benign Fibro-Osseous Lesion of the Jaw: A Rare Case Report

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## ABSTRACT

Fibro-osseous lesions are a diverse group of processes that are characterized by replacement of normal bone by fibrous tissue containing a newly formed mineralized product. Commonly included among the fibro-osseous lesions of the jaws are fibrous dysplasia, cemento osseous dysplasia, and ossifying fibroma. The etiology of fibrous dysplasia is unknown. It is important to diagnose the pathology for cosmetic and mechanic reasons as it can lead to aesthetic disfigurement. Occurring most commonly in the second decade of life, the lesions of fibrous dysplasia can be surgically recontoured for esthetic or functional purposes once they become dormant. We here present a rare case of benign fibro-osseous lesion of the jaw in a 14-year-aged female. The case was diagnosed as benign fibro-osseous lesion on the basis of clinical and histological findings.

**KEYWORDS:** Cemento osseous dysplasia, Fibro-osseous lesions, fibrous dysplasia.

## INTRODUCTION

Benign fibro-osseous lesions of the jaw comprise of an assorted group of lesions with customary histological characteristic, the interchange of ordinary bone by tissue consisting of collagen and fibroblasts, with uncertain magnitude of a calcified material that can be bone, cement or twain. The above-mentioned lesions consist of fibrous dysplasia, periapical cemento-osseous dysplasia, focal cemento osseous dysplasia, florid cemento-osseous dysplasia and cemento-ossifying fibroma.<sup>1</sup> Eversole in 1972, stated that cemento-ossifying fibroma and fibrous dysplasia prevail to be clinical and radiological well defined disease items that nonetheless are not evermore histologically discernible.<sup>2</sup> World Health Organization (WHO) (1972), contemplated ossifying fibroma to be a tumor of bone origin, and cementifying fibroma a tumor of odontogenic origin.<sup>3</sup>

Fibrous dysplasia is a rare disorder of unrevealed etiology. It portrays a bone developmental disorder; especially a defect in osteoblastic differentiation and maturation.<sup>4</sup> Fibrous connective tissue encompassing aberrant bone substitutes conventional bone. Most frequently the forms are dispersed as follows:

- 74% monostotic,
- 13% polyostotic and
- 13% craniofacial.<sup>5</sup>

Monostotic fibrous dysplasia is of pronounced concern to dental professional because of the frequency in which the jaws are affected, although it is less serious than polyostotic fibrous dysplasia. Fibrous dysplasia is mostly diagnosed in infancy and childhood. Maxilla or mandible may be concerned but a domination of the

maxilla has been registered. Females are affected more than males. Precocious slow growing painless swelling can upshot jaw deformity, which usually retards or become arrested at a time synchronizing with the access of puberty.

## CASE REPORT

A 14 year aged female patient reported to the Department of Paediatric and Preventive Dentistry, with a chief complaint of swollen gums since one year. The patient reported that the growth was slow and progressive in both upper and lower jaws from the age of 6 years. Originally swelling was of lesser extent but progressively has accomplished present size. The lesion had been deliberately maturing in size from the time it was initially perceived. Any history of trauma, pain, paresthesia, or lymphadenopathy was present. The mass was firm to palpation and not adherent to the overlying skin. Intraoral examination showed an expansion of the buccal cortex, which was firm on palpation.

Two years earlier, she was operated for the enlargement by a private practitioner where some of her teeth were extracted in an attempt to reduce the growth. The growth had caused incompetent lip seal, poor esthetics and interference in mastication and speech. The patient was concerned but lacked self-assurance due to the gummy smile (FIGURE 1).

Her parents accompanied her and did not give any significant medical or dental history that could contribute to the gingival swelling.

General examination of the patient showed normal physical and mental growth for her age. There was no

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history of epilepsy, mental retardation, or intake of medications that could cause gingival enlargement. Family history was noncontributory.

Extraoral examination revealed class II skeletal base, bilaterally symmetrical face, incompetent lips and convex profile. Intraoral examination showed an expansion of the buccal cortex, which was firm on palpation.

The gingiva was pink in colour with melanin coloration. Texture of the gingiva was firm and stippling was present (FIGURE 2, 3, 4). Generalized pseudopockets (6-7 mm) were seen with no bleeding on probing.

Orthopantomogram showed ground glass appearance and presence of well-circumscribed radiopacity with faint, linear to irregular central opacities. All permanent teeth were present except maxillary left central and lateral incisor and mandibular canine, first premolar, and first molar which were extracted in the previous dental visit. Grossly decayed right mandibular first and second permanent molar were also seen. (FIGURE 5)



Figure 1- Pre-Operative Photograph Of The Patient



Figure 2- Pre-Operative View Showing Maxillary And Mandibular Arches



Figure 3-Pre-Operative View Of Maxillary Arch



Figure 4- Pre-Operative View Of Mandibular Arch

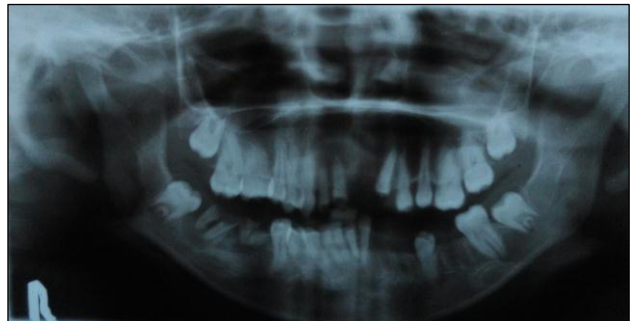


Figure 5- Panoramic Radiograph Of The Patient

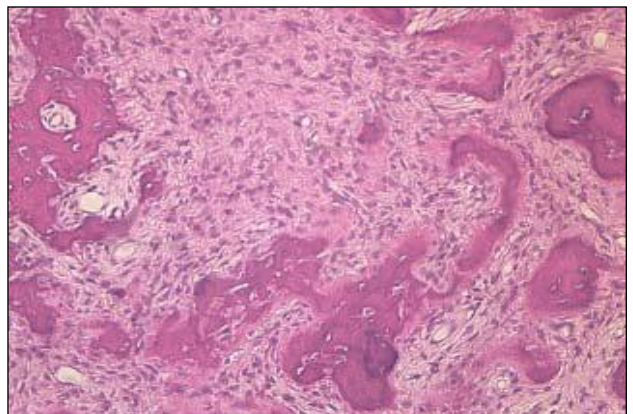


Figure 6- Histopathological Specimen Revealing The Presence Of Bony Trabeculae Showing Osteocystic Lacunae's With Entrapped Osteocytes. Bony Trabeculae Is Lined By Osteoblast Giving A Osteoblastic Rimming Appearance. (Thin Arrows)



Routine blood investigations showed values within physiological limits. Excised tissue of about 0.4 x 0.3 cm size was sent for histopathological evaluation which revealed the presence of bony trabeculae showing osteocystic lacunae's with entrapped osteocytes. The bony trabeculae are interspersed with marrow spaces filled with cellular connective tissue stroma. The bony trabeculae are lined by osteoblast giving an osteoblastic rimming appearance. (FIGURE 6)

Based on clinical, histopathologic and radiographic examination a provisional diagnosis of benign fibro-osseous lesion was made. Elementary management consisted of scaling and root planing and oral hygiene motivation. Later, we planned to perform surgical removal of disproportionate alveolar bone and gingiva under general anesthesia. After informing the hazards, and reappearance, the patient and, his family refused to receive surgical treatment. Hence, close follow-up was advocated. Thus far, the patient is in stable situation.

## DISCUSSION

Fibro-osseous lesions are the group of disorders in which matrix of the normal bone is substituted by immature matrix of intertwined bone. In the act of lesion advancement, the fibrous connective tissue is restored with haphazardly patterned trabecular bone. With elementary augmentation of fibrous dysplasia, the patient routinely reports facial swellings and asymmetries. Males and females are influenced equivalently, although modernistic research has shown a minor female dominance.<sup>6</sup> McCune-Albright syndromes, a grade of polyostotic fibrous dysplasia accompanying café-au-lait pigmentation and multiplex endocrinopathies such as aggressive puberty, pituitary adenoma or hyperthyroidism, commonly influence females. Fibrous dysplasia lesions are twofold as prevalent in the maxilla as compared to mandible, with more habituation in the posterior aspects of the jaw. Effective management consists of reconstruction of the involved bone upgrade esthetics and situation. Reappearance is exceptional in of cases adults, but the lesions can display amazing growth potential if they are surgically amended during their active growth phase.<sup>7</sup>

Differential diagnosis of fibro-osseous lesions includes:

- Focal sclerosing osteomyelitis
- Florid osseous dysplasias
- Periapical cemento-osseous dysplasia
- Osteitis deformans.
- Osteosarcoma

The differential diagnosis differs according to the radiologic appearance, extent and site of skeletal involvement.

Focal sclerosing osteomyelitis is a lesion characterized by the growth of peri-radicular bone. The main etiological reason is benign infection of dental pulp. Radiographically it manifests as a consistent compact radio – opaque aggregate close to the apex of the tooth, with well-demarcated margins and blurred alteration to

the adjacent bone associated with apical loss of lamina dura and widening of periodontal ligament space.<sup>8</sup>

Although osteomyelitis demonstrates sequestra in the later stages, it may resemble fibrous dysplasia in the early stages, notably if there is conjoined swelling. Habitually, signs of inflammation and draining sinus tracts are diagnostic of osteomyelitis.<sup>8</sup> Florid osseous dysplasias are an assemblage of disorders known to originate from periodontal ligament tissues and relate, essentially, the same pathological mechanism. Radiographically, the lesions occurs as multiform sclerotic masses, positioned in two or more quadrants, commonly in the tooth-bearing areas and frequently detained within the alveolar bone.<sup>8</sup>

Periapical cemento-osseous dysplasia principally involves the periapical region of the anterior mandible. Proleptical lesions appear as circumscribed areas of radiolucency entangling the apical area of a tooth. With time, contiguous lesions often fuse to form a linear pattern of radiolucency that wraps the apices of numerous teeth. In the borderline stage, the lesions depicts a delineated compact ossification enclosed by thin radiolucent rim.<sup>8</sup>

Paget's disease is designated by abnormal and deranged bone resorption and deposition, resulting in malformation and thinning of the involved bones. Radiologically, the incipient phases of Paget's disease reveal a decreased radiodensity of the involved bone. Exceptionally in the skull, excessive well defined areas of radiolucency can be present (osteoporosis circumscripta). Osteoblastic stage of the disease, corresponds to “cotton wool” appearance<sup>8</sup> because of the presence of patchy areas of sclerotic bone.

The utmost applied clinical feature for differentiating Paget's disease from fibrous dysplasia is that the aforementioned arises bilaterally in the jaws, whereas the rearmost influences only one side.

Fibrous dysplasia can often be antithesized from osteosarcoma on the grounds of radiographic expressions which are orthoradial striations, disintegration of cortices with an outgrowth of the soft tissue supplement, widening of the periodontal ligament spaces and disorganization of the lamina dura.<sup>9</sup>

Erstwhile, MacDonald Jankowski D figured out the features of fibrous dysplasia by systematic review of 31 reports and 788 cases.<sup>10</sup> All cases were confirmed fibro-osseous lesions histopathologically. Fibrous dysplasia was found to affect males and females equally, but it was 50% more ubiquitous in the maxilla. The mean epoch at primary representation was 24 years, and the pronounced sequence appeared in the second decade; in this group, males estimated for 63% of cases. 90% cases showed initial symptoms of swelling, including malformation of the jaw. All cases featured buccolingual expansion; whereas, in case of mandible downward displacement of the lower border of the mandible was seen; and approximately all maxillary cases affected the maxillary antrum.

## CONCLUSION

Fibro-osseous lesions are jaw disorders of benign attribute and of unexplored etiology. Diagnosing them is a technical ultimatum for dental professional, but a dedicated dental professional can analyze with accurate clinical and radiographic assessment and differentially distinguish from other lesions having collateral clinical and radiological portrait.

The accelerated growth often shown by these lesions can be very frightening and cause the clinician to suspect the inhabitation of a malignancy. Hence, maintaining functioning communication between surgeon, radiologist, and pathologist to establish the benign nature of the lesion and prevent overtreatment is of paramount importance.

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