



RESEARCH ARTICLE

**CLASSIFICATION SCHEMES OF FIBRO-OSSEOUS LESIONS OF ORAL AND
MAXILLOFACIAL REGIONS**

***Dr. Kalpajyoti Bhattacharjee and Dr. Shashwati Paul**

Dental Surgeon

ARTICLE INFO

Article History:

Received 06th December, 2017
Received in revised form
21st January, 2018
Accepted 25th February, 2018
Published online 28th March, 2018

Key words:

Fibro-Osseous lesions,
WHO, Classification.

ABSTRACT

The term fibro-osseous lesion (FOL) is a generic designation of a group of jaw disorders characterized by the replacement of bone by a benign connective tissue matrix. This matrix displays varying degrees of mineralization in the form of woven bone or of cementum-like round acellular intensely basophilic structures. Diagnosis of these lesions based on histologic appearance alone has considerable limitations. Adequate clinical and para clinical observations, such as patient's age, sex, location of the lesion, duration of symptoms, imaging characteristics, and histologic findings are necessary to arrive at an accurate diagnosis. The aim of this review is to study the various classification systems given by various authors which will enable us to adopt a uniform terminology and improve communications between clinicians, pathologist and surgeons.

Copyright © 2018, Kalpajyoti Bhattacharjee and Shashwati Paul. This is an open access article distributed under the Creative Commons Attribution License, which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Citation: Dr. Kalpajyoti Bhattacharjee and Dr. Shashwati Paul, 2018. "Classification schemes of fibro-osseous lesions of oral and Maxillofacial regions", *International Journal of Current Research*, 10, (03), 66651-66653.

INTRODUCTION

The term fibro-osseous lesion (FOL) is a generic designation of a group of jaw disorders characterized by the replacement of bone by a benign connective tissue matrix. This matrix displays varying degrees of mineralization in the form of woven bone or of cementum-like round acellular intensely basophilic structures. Diagnosis of these lesions based on histologic appearance alone has considerable limitations. Benign fibro-osseous lesions (BFOL) of the jaw, facial and skull bones are a variant group of intraosseous disease processes that share microscopic features, Where as some are diagnosable histologically. Most require a combined assessment of clinical, microscopic and radiologic features. The aim of this review is to study the various classification systems given by various authors which will enable us to adopt a uniform terminology and improve communications between clinicians, pathologist and surgeons.

Classification Schemes of Fibro-Osseous Lesions

The various Classifications systems proposed by authors are enumerated as below.

- Charles Waldron Classification Of The Fibro-Osseous Lesions Of The Jaws (1985)

- Working Classification Of Fibro-Osseous Lesions By Mico M. Malek (1987)
- Peiter J. Slootweg & Hellmuth Muller (1990)
- WHO Classification (1992)
- Waldron Modified Classification Of Fibro-Osseous Lesions Of Jaws (1993)
- Brannon & Fowler Classification (2001)
- WHO Classification Of Fibro-Osseous Lesions Of Jaws (2005)
- Paul M. Speight & Roman Carlos Classification (2006)
- Eversole Classification (2008)

Charles Waldron Classification of the Fibro-Osseous Lesions of the Jaws (1985)¹

Fibrous Dysplasia

- a. Monostotic
- b. Polyostotic

Fibro-Osseous (Cemental) Lesions Presumably Arising In the Periodontal Ligament

- a. Periapical Cemental Dysplasia
- b. Localized Fibro-Osseous-Cemental Lesions (Probably Reactive In Nature)
- c. Florid Cement-Osseous Dysplasia (Gigantiform Cementoma)
- d. Ossifying & Cemenifying Fibroma

***Corresponding author: Dr. Kalpajyoti Bhattacharjee**
Dental Surgeon

Fibro-Osseous Neoplasms of Uncertain or Detectable Relationship to Those Arising in the Periodontal Ligament (Category II)

- a. Cementoblastoma, Osteoblastoma & Osteoid Osteoma
- b. Juvenile Active Ossifying Fibroma & Other So Called Aggressive, Active Ossifying /Cementifying Fibromas.

Working Classification of Fibro-Osseous Lesions By Mico M. Malek (1987)²

Developmental Disorders

- A. Fibrous Cortical Defects (Non Ossifying Fibroma)
- B. Fibrous Dysplasia

Reactive Reparative Lesions

- A. Traumatic Periosteitis
- B. Periosteitis Ossificans
- C. Osseous Keloid
- D. Periapical Cemental Dysplasia & Florid Cemento-Osseous Dysplasia
- E. Sclerosing Osteomyelitis (Focal & Diffuse Type)
- F. Osteitis Deformans

Fibromatosis

- A. Desmoplastic Fibroma (Intraosseous Fibromatosis)

Neoplasms

- A. Tooth Bearing Areas Only
 - i. Cementoblastoma
 - ii. Periodontoma
 1. Central
 2. Peripheral
- B. All Cranio-Facial Bones (Including Tooth Bearing Areas)
 - i. Osteoma
 1. Trabecular
 2. Compact
 - ii. Osteoid Osteoma
 - iii. Psammous Desmo-Osteoblastoma
 - iv. Trabecular Desmo-Osteoblastoma

Peiter J. Slootweg & Hellmuth Muller (1990)

In 1990 Peiter. J. Slootweg & Hellmuth Muller gave a classification that laid emphasis primarily on the histopathological features, and they underscore that this classification requires inclusion of adjacent normal bone to make diagnosis. However in the absence of this, the clinical & radiological features have to be taken in to consideration.

Group I: Fibrous Dysplasia

Group II: Juvenile Ossifying Fibroma

Group III: Ossifying Fibroma

Group IV: Periapical Cemental Dysplasia & Florid Osseous Dysplasia

Waldron Modified Classification Of Fibro-Osseous Lesions Of Jaws (1993)

Later on, to overcome the demerits of his own classification, Waldron reviewed the subject of benign fibro-osseous lesions

of jaws (BFOL) in 1993 and suggested a modification of his earlier classification.

1. Fibrous Dysplasia

2. Cement-Osseous Dysplasia

- a. Periapical Cement-Osseous Dysplasia
- b. Focal Cement-Osseous Dysplasia
- c. Florid Cement-Osseous Dysplasia

3. Fibro-Osseous Neoplasm

- a. Cementifying Fibroma, Ossifying Fibroma, Cement-Ossifying Fibroma

WHO Classification (Kramer *et al.*, 1992)

1. Osteogenic Neoplasms

- a. A.Cemento-Ossifying Fibroma (Cementifying Fibroma, Ossifying Fibroma)

2. Non-Neoplastic Bone Lesions

- a. Fibrous Dysplasia Of Jaws
- b. Cemento-Osseous Dysplasia
 - I. Periapical Cemental Dysplasia (Periapical Fibrous Dysplasia),
 - II. Florid Cemento-Osseous Dysplasia (Gigantiform Cementoma, Familial Multiple Cementomas)
 - III. Other Cemento-Osseous Dysplasia
- c. Cherubism (Familial Multilocular Cystic Disease Of The Jaws)
- d. Central Giant Cell Granuloma
- e. Aneurismal Bone Cyst
- f. Solitary Bone Cyst (Traumatic, Simple, Hemorrhagic Bone Cyst)

WHO Classification Of Fibro-Osseous Lesions Of Jaws (Barnes *et al.* 2005)

1) Ossifying Fibroma (OF)

2) Fibrous Dysplasia

3) Osseous Dysplasia

- a. Periapical Osseous Dysplasia
- b. Focal Osseous Dysplasia
- c. Florid Osseous Dysplasia

4) Central Giant Cell Granuloma

5) Cherubism

6) Aneurismal Bone Cyst

7) Solitary Bone Cyst

Brannon & Fowler Classification (2001)

1. Osseous Dysplasia (OD) (Reactive)

- a. Nonhereditary
 - i. Periapical
 - ii. Focal
 - iii. Florid
- b. Hereditary (Developmental)
 - i. Familial Gigantiform Cementoma

2. Fibro-Osseous Neoplasm

- a. Ossifying Fibroma (OF)
- b. "Juvenile", "Active" or "Aggressive" Variants of OF

3. Fibrous Dysplasia

- a. Polyostotic FD
- b. Monostotic FD

c. Craniofacial FD

4. Giant Cell Lesions

- a. Central Giant Cell Granuloma
- b. Aneurismal Bone Cyst
- c. Cherubism

5. Miscellaneous Benign Fibro-Osseous Lesions

- a. Cementoblastoma
- b. Tori/Exostoses

Paul M. Speight & Roman Carlos Classification (2006)

1. Fibrous Dysplasia

- a. Monostotic FD
- b. Polyostotic FD
- c. Craniofacial FD

2. Osseous Dysplasia

- a. Periapical Osseous Dysplasia
- b. Focal Osseous Dysplasia
- c. Florid Osseous Dysplasia
- d. Familial Gigantiform Cementoma

3. Ossifying Fibroma

- a. Conventional Ossifying Fibroma
- b. Juvenile Trabecular Ossifying Fibroma
- c. Juvenile Psammomatoid Ossifying Fibroma

Eversole 2008 Classification⁸

1. Bone dysplasias

- a. Fibrous dysplasia
 - i. Monostotic
 - ii. Polyostotic
 - iii. Polyostotic with endocrinopathy (McCune-Albright)
 - iv. Osteofibrous dysplasia
- b. Osteitis deformans
- c. Pagetoid heritable bone dysplasias of childhood
- d. Segmental odontomaxillary dysplasia

2. Cemento-osseous dysplasias

- a. Focal cemento-osseous dysplasia
- b. Florid cemento-osseous dysplasia

3. Inflammatory/reactive processes

- a. Focal sclerosing osteomyelitis
- b. Diffuse sclerosing osteomyelitis
- c. Proliferative periostitis

4. Metabolic Disease: hyperparathyroidism

5. Neoplastic lesions (Ossifying fibromas)

- a. Ossifying fibroma
- b. Hyperparathyroidism jaw lesion syndrome
- c. Juvenile ossifying fibroma
 - i. Trabecular type
 - ii. Psammomatoid type
- d. Gigantiform cementomas

Conclusion

Nomenclatures for Benign Fibro osseous lesions have been historically been inconsistent and confusing so far. In recent years, significant progress has been achieved in understanding the histopathogenic similarities and differences of various fibro-osseous lesions, thereby enhancing one's ability to diagnose accurately and to manage many fibro-osseous conditions. The surgical pathologist must demand and correlate all relevant data (clinical information, radiographs/images, surgical gross findings, histology) in order to avoid misinterpretation of this group of histologically similar, but clinically distinct, bone lesions.

REFERENCES

- Benjellou, L., Harti, K.E., Wady, W.E. Florid Osseous dysplasia: Report of two cases and review of literature. *Int J Odontostomat.*, 5(3):257-266
- Brannon, R.B., Fowler, C.B. 2001. Benign fibro-osseous lesions: a review of current concepts. *Adv Anat Pathol.* May;8(3):126-43
- Eversole, R., Su, L., ElMofty, S. 2008. Benign fibro-osseous lesions of the craniofacial complex. A review. *Head Neck Pathol.* Sep;2(3):177-202
- Makek, M.S. 1987. So called "fibro-osseous lesions" of tumorous origin. Biology confronts terminology. *J Craniomaxillofac Surg.* Jun;15(3):154-67
- Rajpal, K et al. Updated Classification Schemes for Fibro-Osseous Lesions of the Oral & Maxillofacial Region: A Review. *IOSR Journal of Dental and Medical Sciences* Volume 13, Issue 2 Ver. IV. (Feb. 2014), PP 99-103
- Slootweg, P.J, Müller, H. 1990. Differential diagnosis of fibro-osseous jaw lesions. A histological investigation on 30 cases. *J Craniomaxillofac Surg.*, Jul;18(5):210-4.
- Speight, P.M., Carlos, R. 2006. Maxillofacial fibro-osseous lesions. *Current Diagnostic Pathology.*, 12:1-10
- Waldron, C.A. 1985. Fibro-osseous lesions of the jaws. *J Oral Maxillofac Surg.* Apr;43(4):249-62
