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Fibro Osseous Lesions: Classification, Pathogenesis, Genetic Alterations And Diagnosis: A Tabular Review

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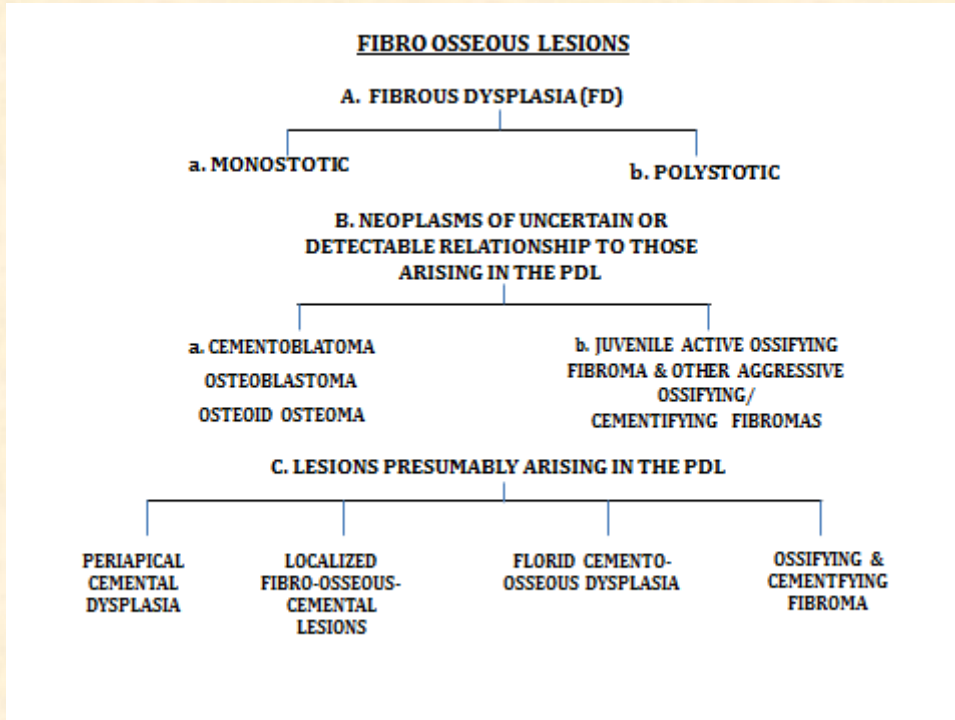
INTRODUCTION:

The term fibro-osseous lesion (FOL) has been used to define diverse pathological conditions affecting the jaws and craniofacial bones. It includes a spectrum of lesions which might be developmental, reactive, dysplastic or neoplastic in nature. Waldron has defined fibro-osseous lesions as, “a group of pathological changes within the jaw bones in which normal bone is replaced by fibrous tissue, with or without calcification.”^[1] Due to frequent overlapping of clinical, radiological and microscopic features of the spectrum of lesions under this term make its diagnosis difficult & leaves a grey area with a scope for argument. This review aims to throw light upon the various classifications, pathogenesis, genetic alterations as well as radiological and histological features which will aid in accurate diagnosis of these lesions.

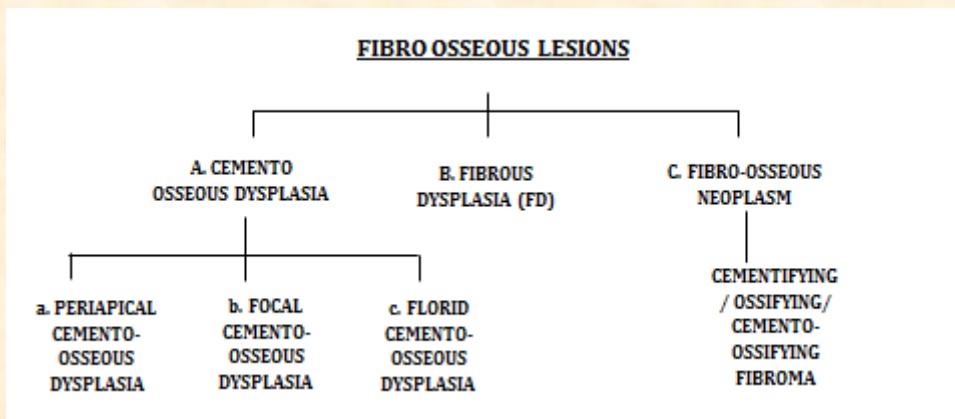
Keywords: Fibro-osseous lesions, jaw bones, fibrous tissue, pathogenesis, diagnosis.

CLASSIFICATION:

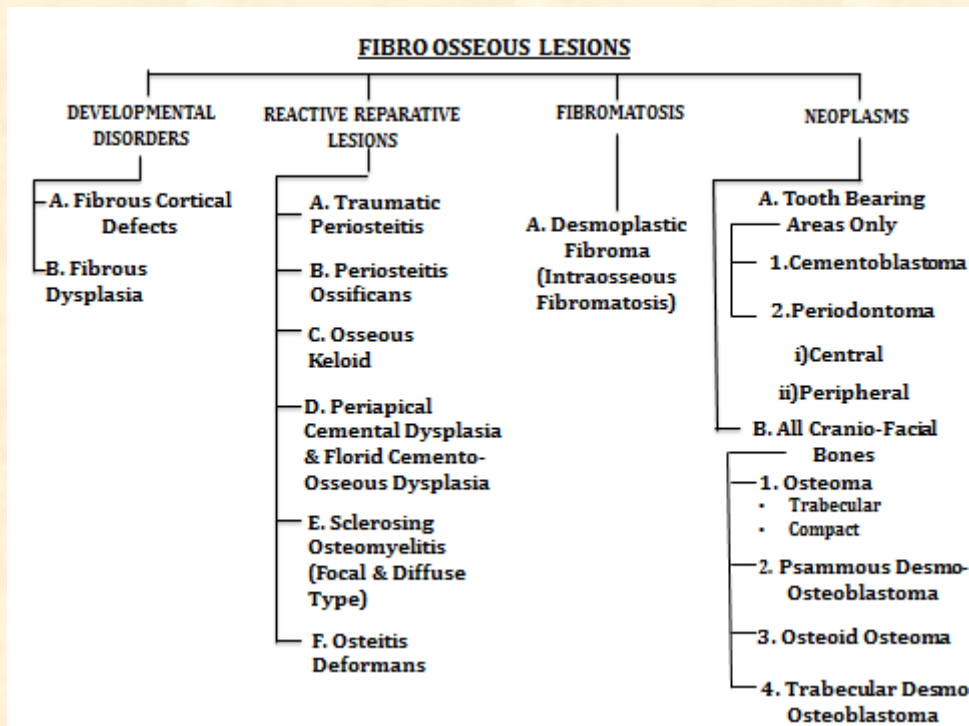
1985: CHARLES WALDRON CLASSIFICATION [1]



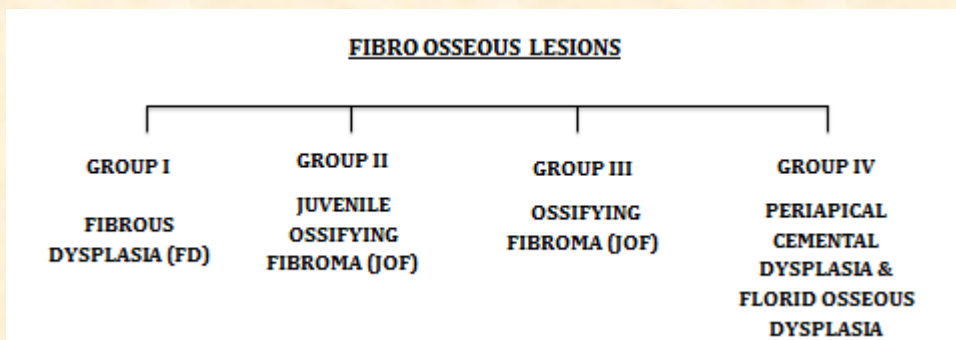
1993: MODIFIED WALDRON CLASSIFICATION [2]



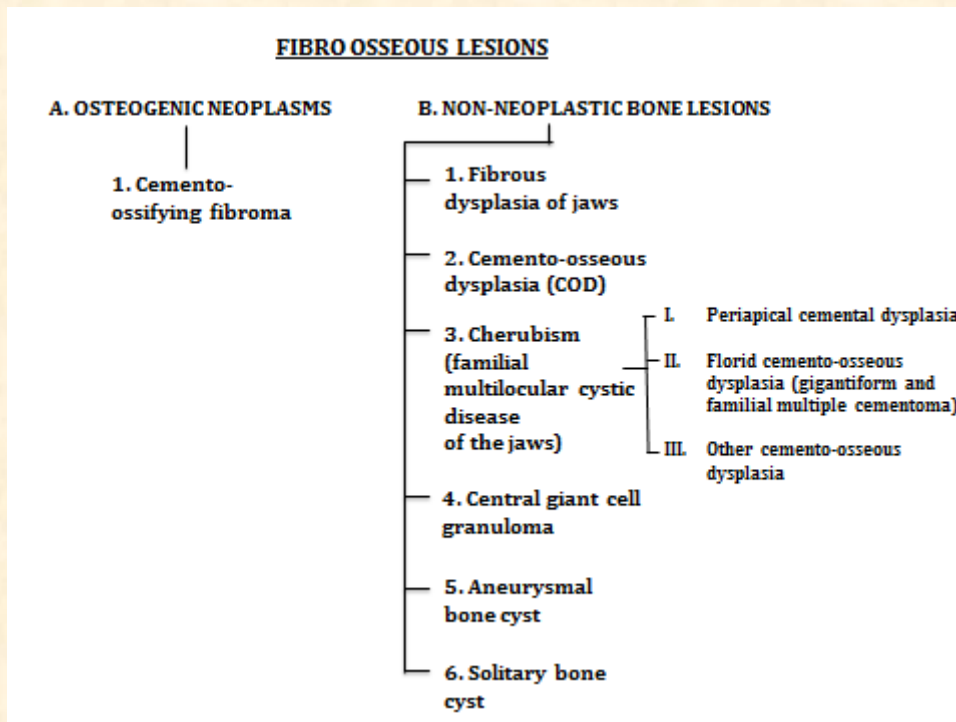
1987: WORKING CLASSIFICATION BY MICO M. MALEK [3]



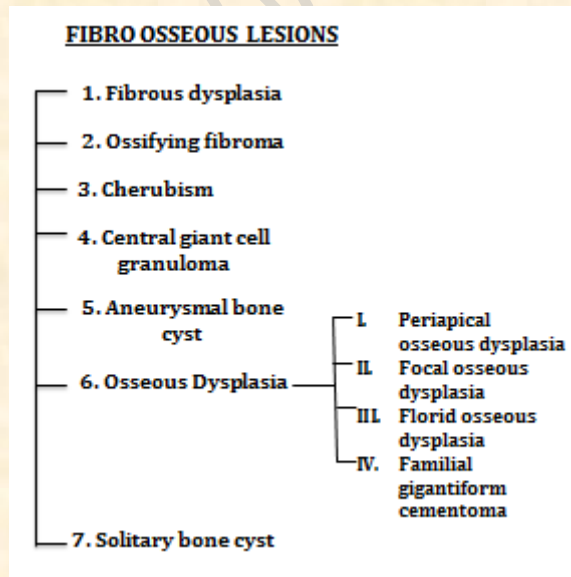
1990: PEITER J. SLOOTWEG & HELLMUTH MULLER [4]



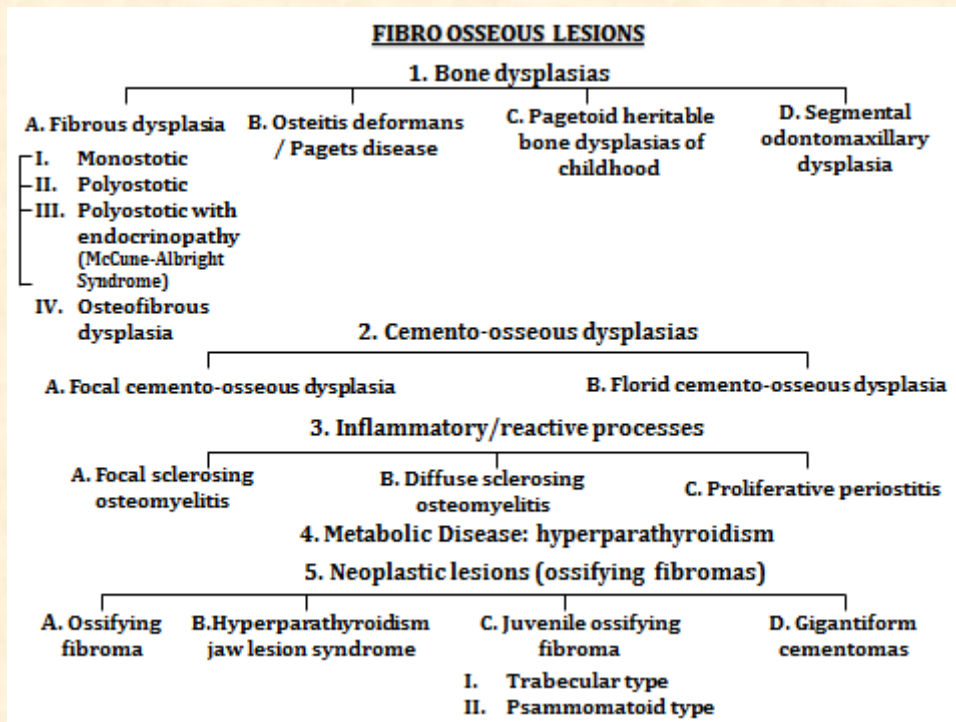
1992: WHO CLASSIFICATION [5]



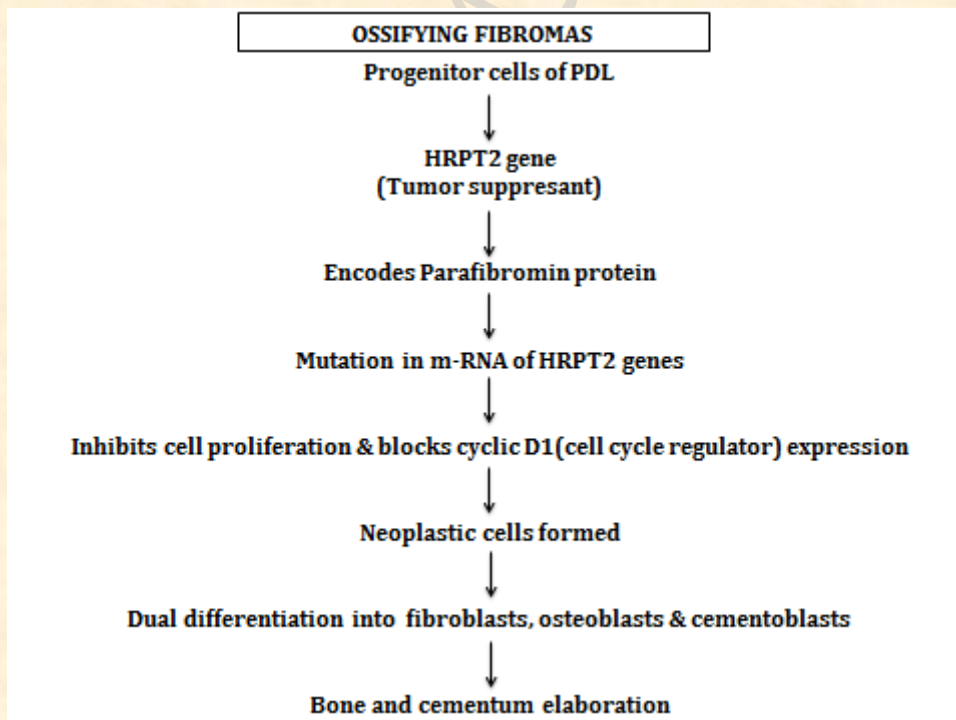
2005: WHO CLASSIFICATION [5]



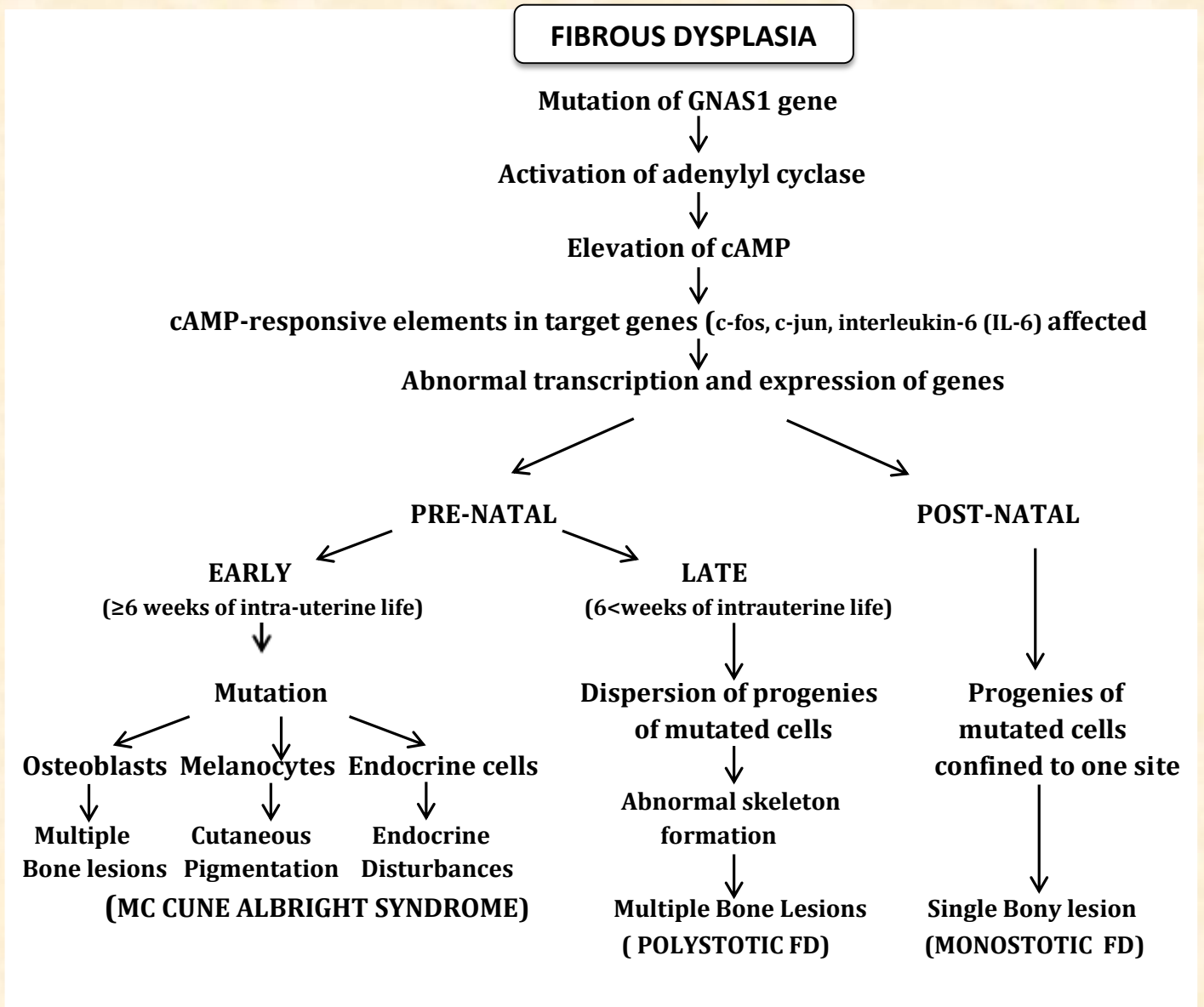
2008: EVERSOLE CLASSIFICATION [6]



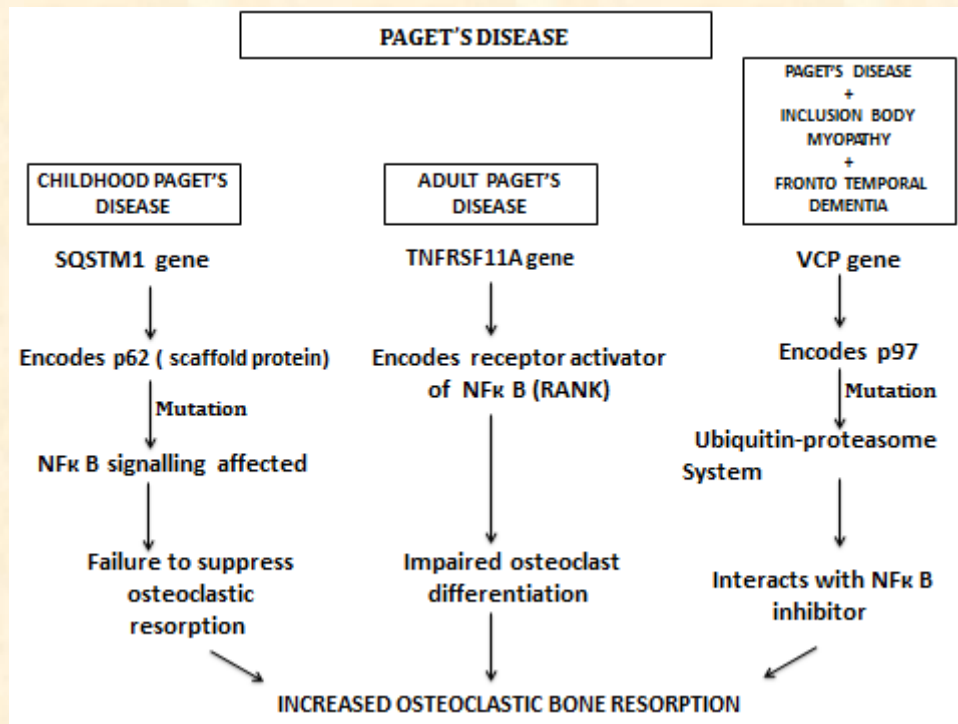
PATHOGENESIS OF OSSIFYING FIBROMA: [7]



PATHOGENESIS OF FIBROUS DYSPLASIA: [7] [8] [9] [10] [11] [12]



PATHOGENESIS OF PAGET'S DISEASE: [13]



CLINICAL FEATURES OF FIBRO-OSSEOUS LESIONS: [7] [14]

SR. NO	LESION	AGE (IN YEARS)	SEX	COMMON SITE	APPEARANCE & SYMPTOMS
1.	FIBROUS DYSPLASIA	10-20	M=F	Maxilla> Mandible	Painless osseous expansion with facial asymmetry
2.	PAGET'S DISEASE	>40	M>F	Maxilla> Mandible	Jaw expansion with deep bone pain
3.	OSSIFYING FIBROMA	30-40	F>M	Mandible Molar & premolar area	Painless swelling of involved bone
4.	HYPERPARATHYROIDISM	>60	F>M	Mandible, clavicles, ribs & pelvis	Disturbance in ion metabolism, depletion of bone minerals, kidney stones, gastrointestinal disorders and muscle

					weakness
5.	OSSEOUS DYSPLASIA				
	• FOCAL	30-60	F>M	Posterior Mandible	Painless osseous lesion <1.5cm
	• PERIAPICAL	30-50	F>M	Periapical region of anterior mandible	Painless osseous lesions
	• FLORID	30-50	F>M	Mandible > Maxilla	Painless bony lesions with marked tendency of bilateral symmetrical involvement
6.	CHRONIC SCLEROSING OSTEOMYELITIS	>18	-	Mandible> Maxilla	Constantly and severely painful expansile lesion

RADIOLOGICAL FEATURES OF FIBRO-OSSEOUS LESIONS: [7][14]

LESION	RADIOGRAPHICAL FEATURES
FIBROUS DYSPLASIA	<ul style="list-style-type: none"> • Ground glass appearance • Margins blend gradually into surrounding normal bone • No displacement of adjacent structures
PAGET'S DISEASE	<ul style="list-style-type: none"> • Cotton-wool appearance • Teeth in affected region usually demonstrate hypercementosis
OSSIFYING FIBROMA	<ul style="list-style-type: none"> • Well-circumscribed, unilocular radiolusency with corticated border • Expansion of cortices and displacement of adjacent structures
OSSEOUS DYSPLASIA I. PERIAPICAL II. FOCAL	<ul style="list-style-type: none"> • Multiple, circumscribed, non- corticated radiolusencies

III. FLORID	<ul style="list-style-type: none"> • Focal circumscribed apical lesions $\leq 2\text{cm}$ • Multiple quadrant radiolusencies
HYPERPARATHYROIDISM	<ul style="list-style-type: none"> • Multilocular radiolusencies • Loss of lamina dura around the involved teeth
SCLEROSING OSTEOMYELITIS <ul style="list-style-type: none"> • FOCAL • DIFFUSE 	<ul style="list-style-type: none"> • Apical well delineated radioluscent or radiopaque • Diffuse ground glass proliferative periostitis

HISTOLOGICAL FEATURES OF FIBRO-OSSEOUS LESIONS: [7][14][15]

LESION	HISTOLOGICAL FEATURES
FIBROUS DYSPLASIA	<ul style="list-style-type: none"> • Cellular fibrous tissue composed of haphazardly arranged, variably shaped trabeculae of woven bone • No osteoblastic rimming • Parallel arrangement of trabeculae of lamellar bone in mature lesions
PAGET'S DISEASE	<ul style="list-style-type: none"> • Osseous trabeculae with prominent reversal lines in a highly vascular fibrous connective tissue stroma
OSSIFYING FIBROMA	<ul style="list-style-type: none"> • Proliferative fibrous tissue with trabeculae of woven or lamellar bone • Osteoblastic rimming along with rounded, cementicle-like masses
OSSEOUS DYSPLASIA	<ul style="list-style-type: none"> • Fibrous connective tissue with a mixture of woven, lamellar & cementum-like particles • Ginger root-like thick curvilinear bony trabeculae in mature lesions • In final radiopaque stage, fusion of trabeculae to form lobular masses
HYPERPARATHYROIDISM	<ul style="list-style-type: none"> • Wide zones of osteoid rimmed with activated osteoblasts.

	<ul style="list-style-type: none"> • Thin trabeculae of bone associated with numerous osteoclasts
CHRONIC SCLEROSING OSTEOMYELITIS	<ul style="list-style-type: none"> • Sclerotic bone showing alternating areas of apposition and resorption. • Fibrous connective tissue infiltrated by chronic inflammatory cells between the trabeculae

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