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.

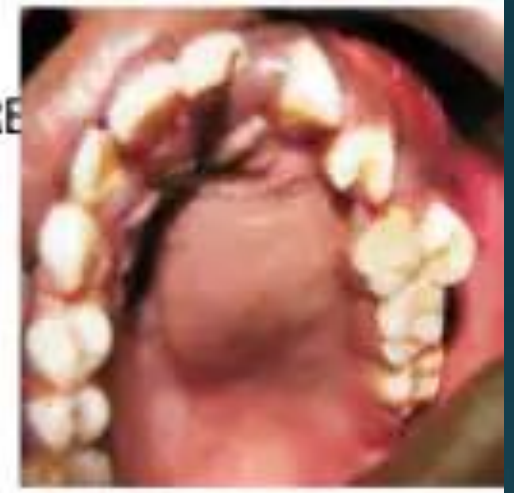
- DIAGNOSIS OF THESE LESIONS BASED ON HISTOLOGIC APPEARANCE ALONE HAS CONSIDERABLE LIMITATIONS.
- BENIGN FIBRO-OSSEOUS LESIONS (BFOL) OF THE JAW, FACIAL AND SKULL BONES ARE A VARIANT GROUP OF INTRAOSSEOUS DISEASE PROCESSES THAT SHARE MICROSCOPIC FEATURES, WHEREAS SOME ARE DIAGNOSABLE HISTOLOGICALLY.
- MOST REQUIRE A COMBINED ASSESSMENT OF CLINICAL, MICROSCOPIC AND RADIOLOGIC FEATURES.

Ossifying fibroma :-

Ossifying fibroma is an common benign neoplasm of bone that has the potential for excessive growth, bone destruction, and recurrence. Montgomery was the first to coin the term "ossifying fibroma" (1927) It is clinically and microscopically similar, if not identical, to cementifying fibroma.

Composed of a fibrous connective tissue stroma in which new bone is formed, it is classified as one of the benign fibroosseous lesions of the jaws .

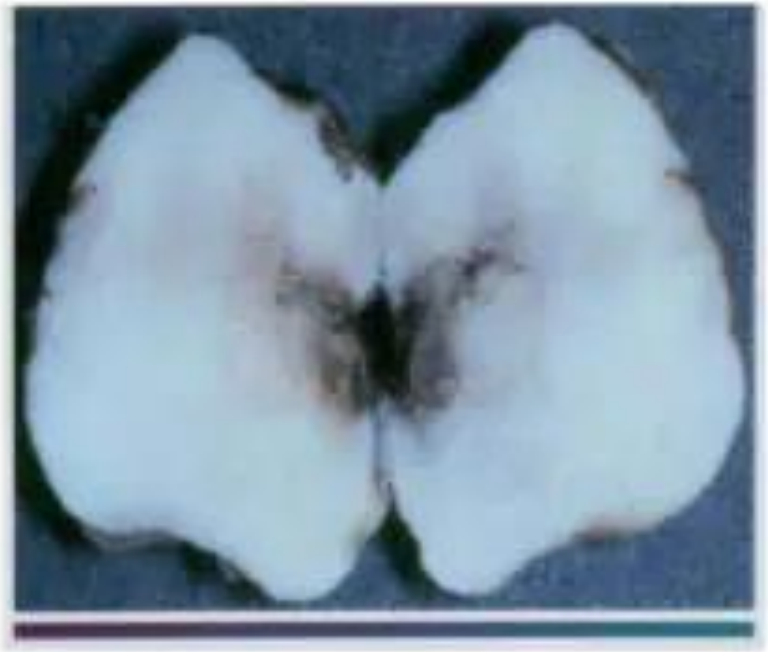
CLINICAL FEATURES



- **AGE: 3RD AND 4TH DECADES** → MEAN AGE OF 32 YRS
- **SEX: FEMALE PREDILECTION**
- **SITE: MANDIBLE** >MAXILLA. MAINLY ARISES IN THE TOOTH BEARING ARE
- **MOST COMMON SITES : MANDIBULAR PREMOLAR AND MOLAR AREAS.**
- ASYMPTOMATIC AND EXPANSILE LESION
- PAIN AND PARESTHESIA ARE RARELY ASSOCIATED.
- **SMALL LESIONS** → DETECTED ONLY ON RADIOGRAPHIC EXAMINATION.
- **LARGER TUMORS** → PAINLESS SWELLING OF THE INVOLVED BONE → **FACIAL ASYMMETRY.**
- GROWTH RATE IS UNPREDICTABLE AND MAY BE SLOW AND STEADY OR RAPID

GROSS PATHOLOGY

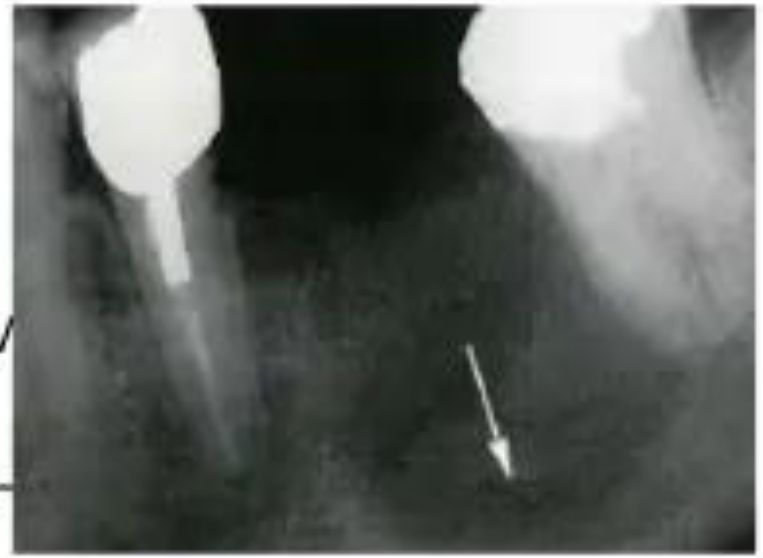
- **CUT SURFACE** → WHITISH YELLOW,
- **CONSISTENCY** → VARIES WITH THE AMOUNT OF CALCIFIED MATERIAL.
- WELL CIRCUMSCRIBED
- RELATIVELY SMALL LESIONS OFTEN EXCISED COMPLETE WITH SOME SURROUNDING NORMAL BONE.



RADIOGRAPHIC FEATURES

- **EVERSOLE ET AL** FOUND 2 MAJOR PATTERNS

1. WELL-DEFINED UNILOCULAR, ROUND, OR OV
   STRUCTURES.
2. LARGER TUMORS →MULTILOCULAR RADIOGRAPH
   APPEARANCE.



- ACCORDING TO **MACFRONALD-JANKOWSKI'**

↓

INITIAL RADIOLUCENT

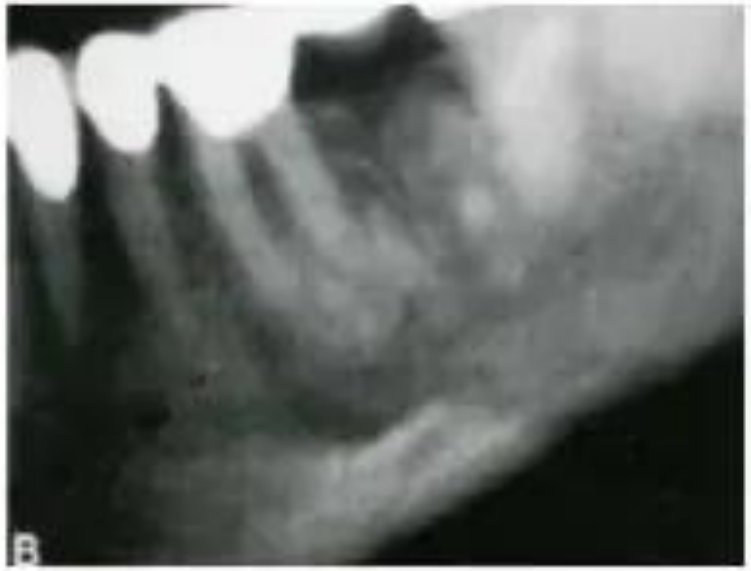
↓

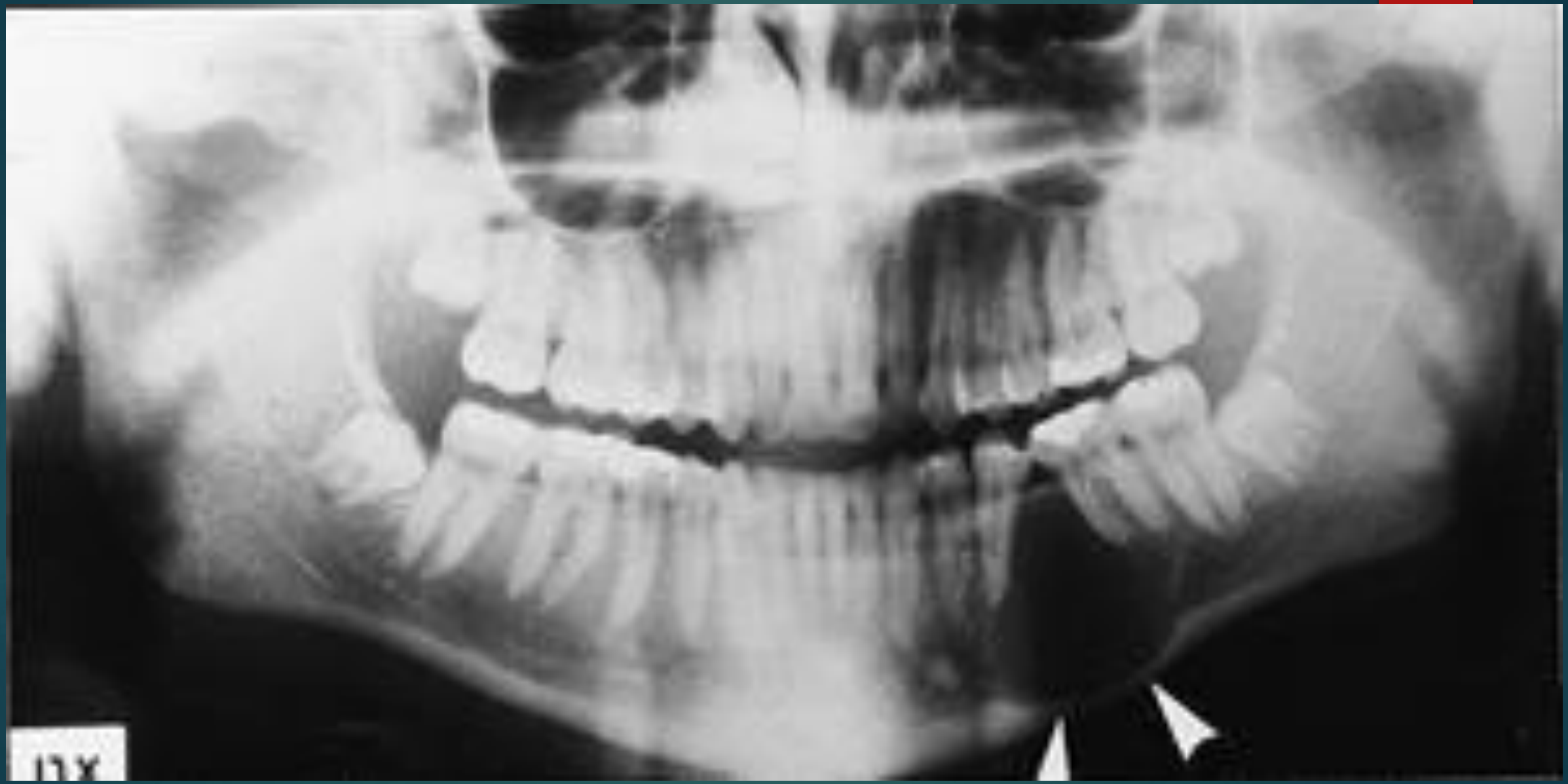
PROGRESSIVELY RADIOPAQUE

↓

INDIVIDUAL RADIOPACITIES COALESCE

SCLEROTIC

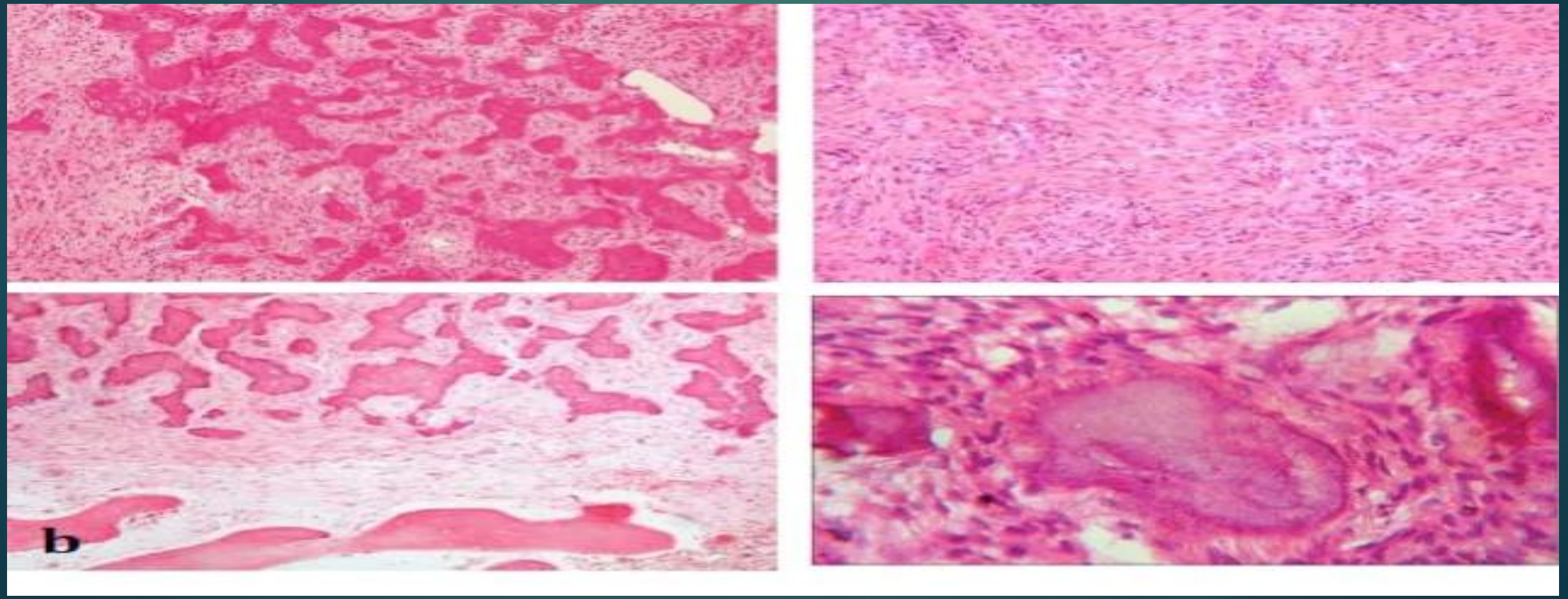




Histopathology:-

1- Ossifying fibroma is composed of fibrous connective tissue with fibroblasts.

2- Bony spheroids, trabeculae, or islands are evenly distributed throughout the fibrous stroma . Bone is immature and often surrounded by osteoblasts.



Treatment and Prognosis :-

Treatment of ossifying fibroma is most often accomplished by surgical removal using curettage or enucleation. The lesion can typically be separated easily from the surrounding normal bone .Recurrence is described only rarely after removal.

JUVENILE OSSIFYING FIBROMA (ACTIVE OSSIFYING FIBROMA OR AGGRESSIVE OSSIFYING FIBROMA)

- AN ACTIVELY GROWING LESION CONSISTING OF A CELL RICH FIBROUS STROMA, CONTAINING BANDS OF CELLULAR OSTEOID WITHOUT OSTEOBLASTIC RIMMING TOGETHER WITH TRABECULAE OF MORE TYPICAL WOVEN BONE.
- SMALL FOCI OF GIANT CELLS MAY ALSO BE PRESENT, AND IN SOME PARTS THERE MAY BE ABUNDANT OSTEOCLASTS RELATED TO THE WOVEN BONE.
- USUALLY NO FIBROUS CAPSULE CAN BE DEMONSTRATED,
- WELL DEMARCATED FROM THE SURROUNDING BONE.

- **2 PATTERNS:**

1. PSAMMOMATOID AND
2. TRABECULAR- JUVENILE OSSIFYING FIBROMA

Psammomatoid occure more than trabecular type in 4=1

TRABECULAR VARIANT

- IRREGULAR STRANDS OF HIGHLY CELLULAR OSTEOID ENCASING PLUMP AND IRREGULAR OSTEOCYTES

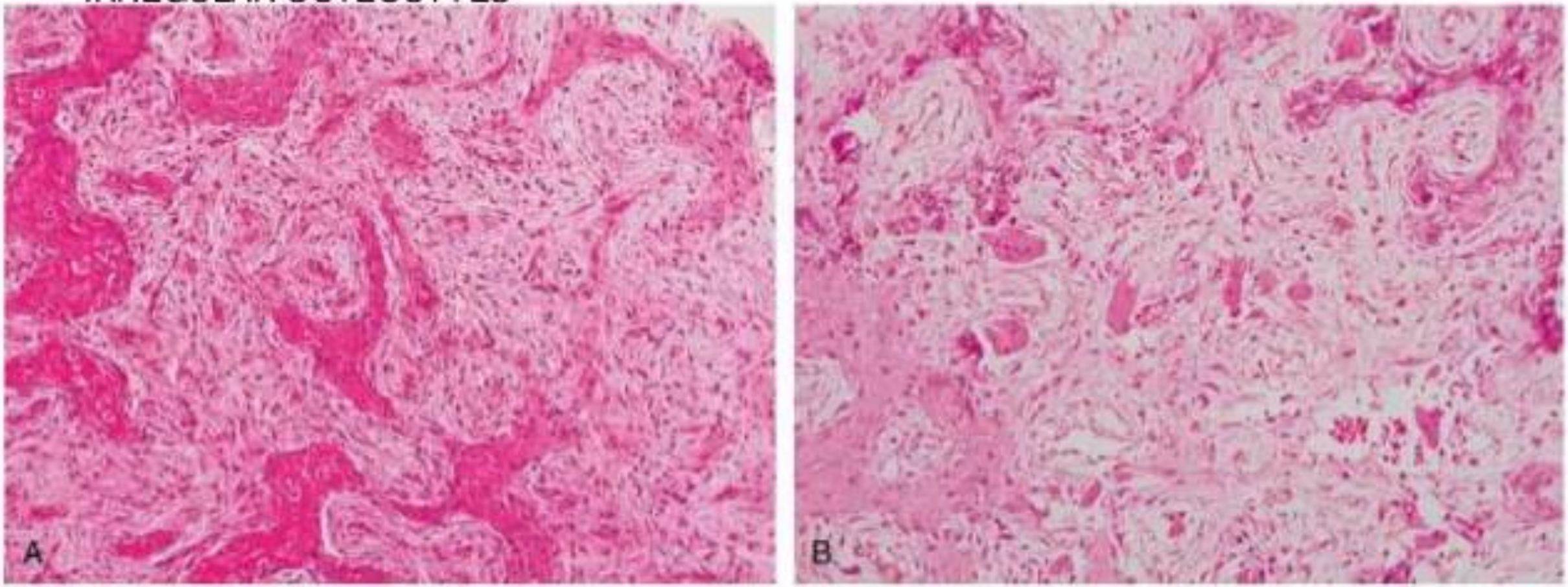
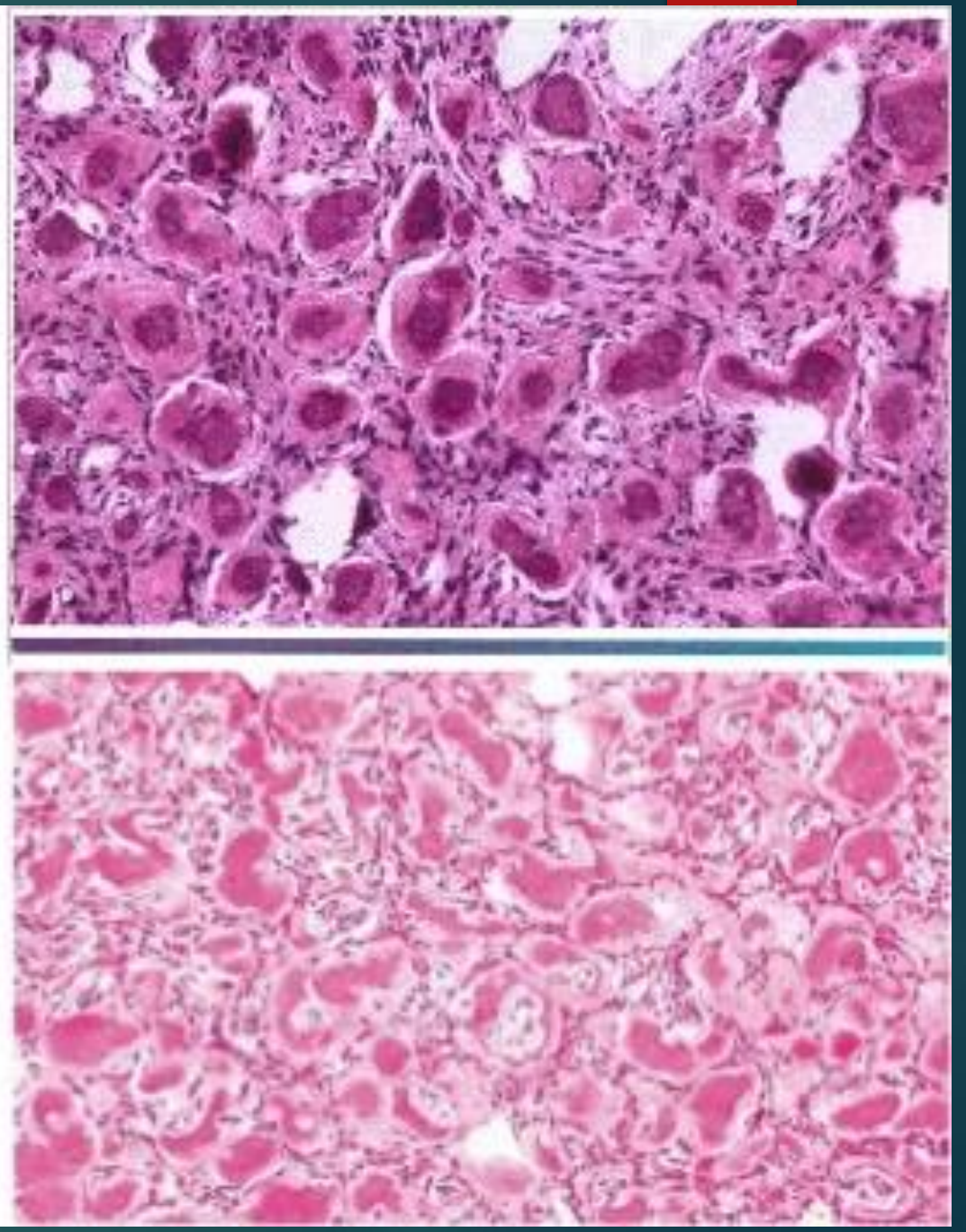


Figure 9-27. A, Trabecular juvenile ossifying fibroma. The lesion is composed of cellular immature osteoid trabeculae in a spindle cell–rich stroma. **B,** Trabecular juvenile ossifying fibroma. Note focal aggregates of osteoclast-like giant cells.

PSAMMOMATOID PATTERN FORMS

- CONCENTRIC LAMELLATED AND SPHERICAL OSSICLES THAT *VARY IN* SHAPE AND TYPICALLY *HAVE BASOPHILIC CENTERS WITH PERIPHERAL* EOSINOPHILIC OSTEOID.
- A PERIPHERAL BRUSH BORDER BLENDING INTO THE SURROUNDING STROMA IS NOTED IN MANY OF THE OSSICLCS. OCCASIONALLY. INDIVIDUAL OSSICLES UNDERGO REMODELING AND FORM CRESCENTIC SHAPES.



Cemento –osseous dysplasia

In 1992 by the World Health Organization classified cemento-osseous dysplasia , based on age, sex and histopathologic, radiographic and clinical characteristics, as well as location of the lesion. However the. The term 'cementosseous dysplasia' is a histopathological term, yet diagnosis can be decided by clinical and radiographic findings.

These lesions are characterized by replacement of bone by connective tissue matrix, the matrix displaying varying degrees of mineralization .

Classification includes :-

***A- periapical cemental dysplasia* :-**

1- Lesions confined to the anterior mandible, within the space between the canines,

2- Generally are painless lesion.

3- Usually not causing expansion of the cortex.

4- Female to male ratio 14:1.

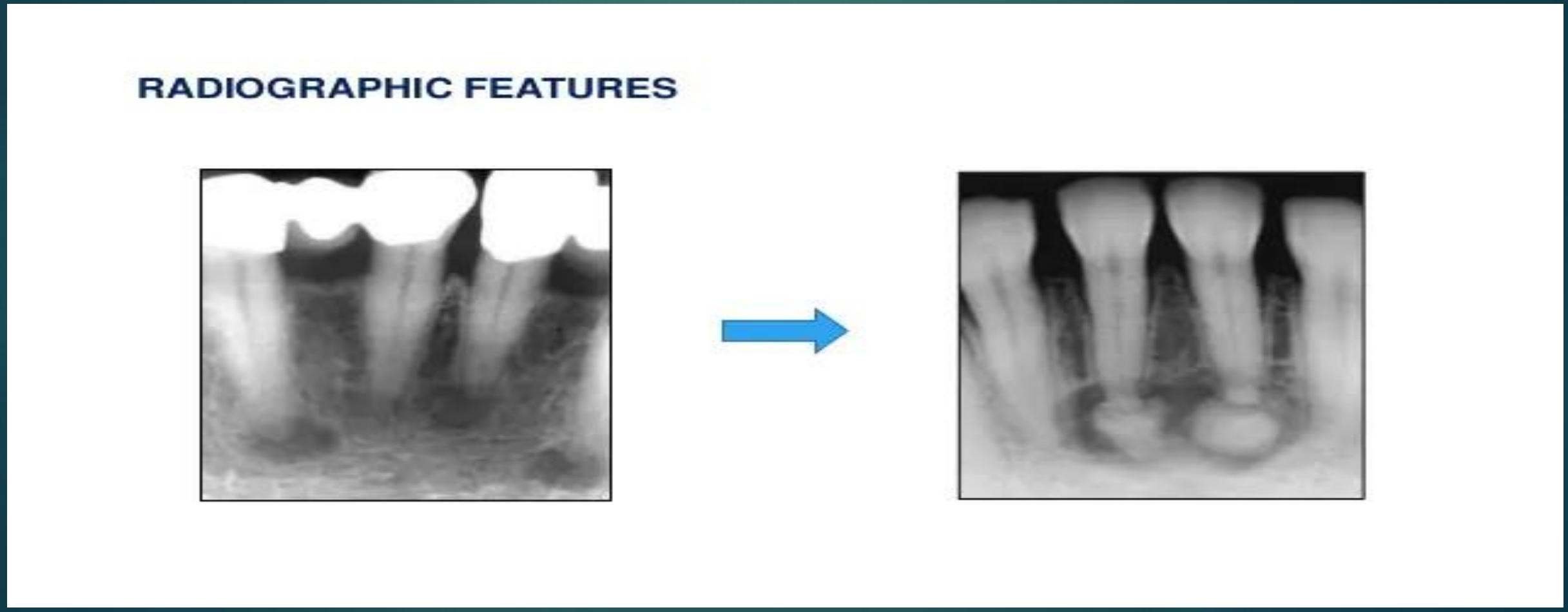
5- Most lesion detected between 30-50 years.

6- The associated tooth are vital.

Radiographically,

early lesion may appear lucent lesion involving the apical part of the teeth , serial radiograph shown that the lesion mature with time to have mixed radiolucent and opaque appearance , the end stage , circumscribed dense calcification surrounded be lucent area and it is seldomly exceed 1 cm.

the lesion is self-limiting no treatment is needed.



Focal cement osseous dysplasia :-

It is recently described entity that is thought to fall between the periapical osseous dysplasia and florid one some investigator have suggest that is disease is the commonest form of fibro-osseous lesion in oral and maxillofacial region.

1- About 80% occur in female.

2- Posterior mandible is the predominant region

3- Almost it is asymptomatic most lesion smaller than 1.5 cm.

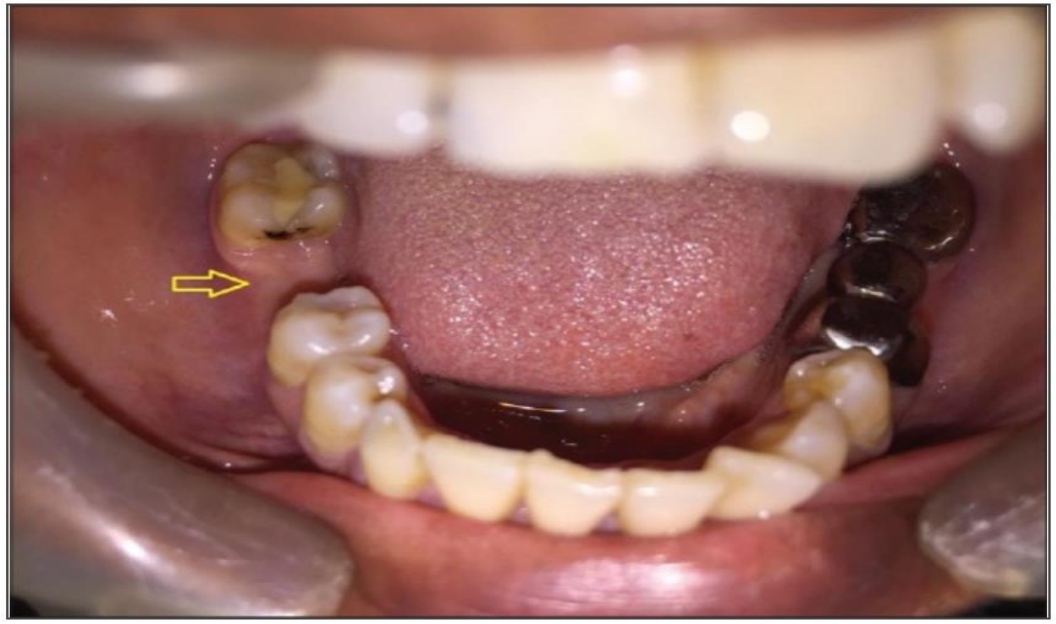


Figure 1

Intraoral photograph showing clinically missing 46

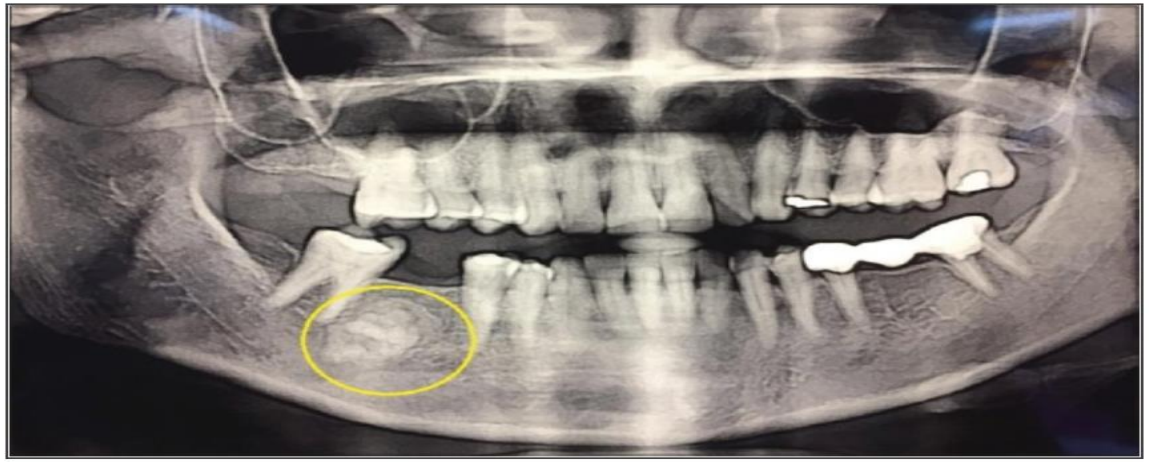
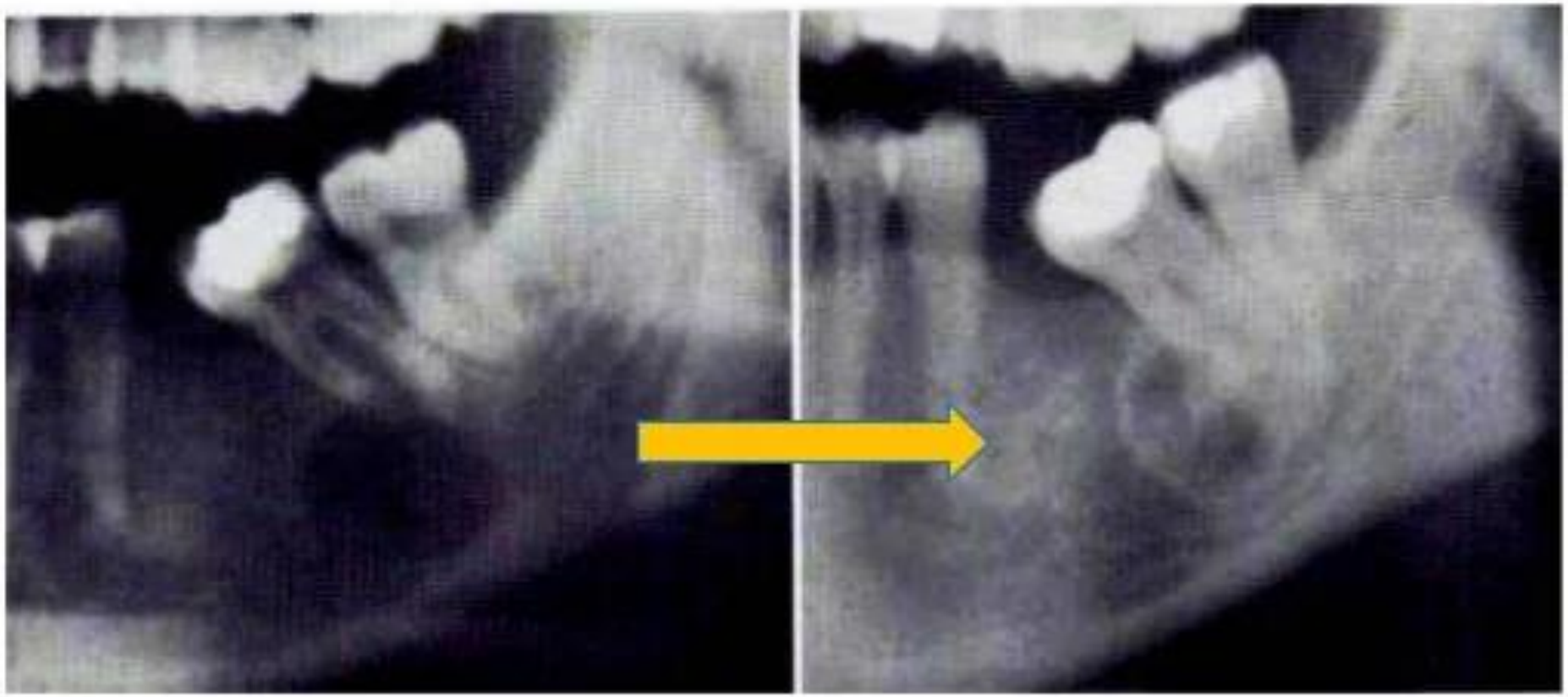


Figure 2

Orthopantamogram showing a well-defined radiopaque mass in the right mandible region extending from the distal root of 45 to the mesial root of 47



Histopathologically :-

The fragment consist from irregular trabeculi of woven bone, deposit of cementum like matrix, collagenous stroma.

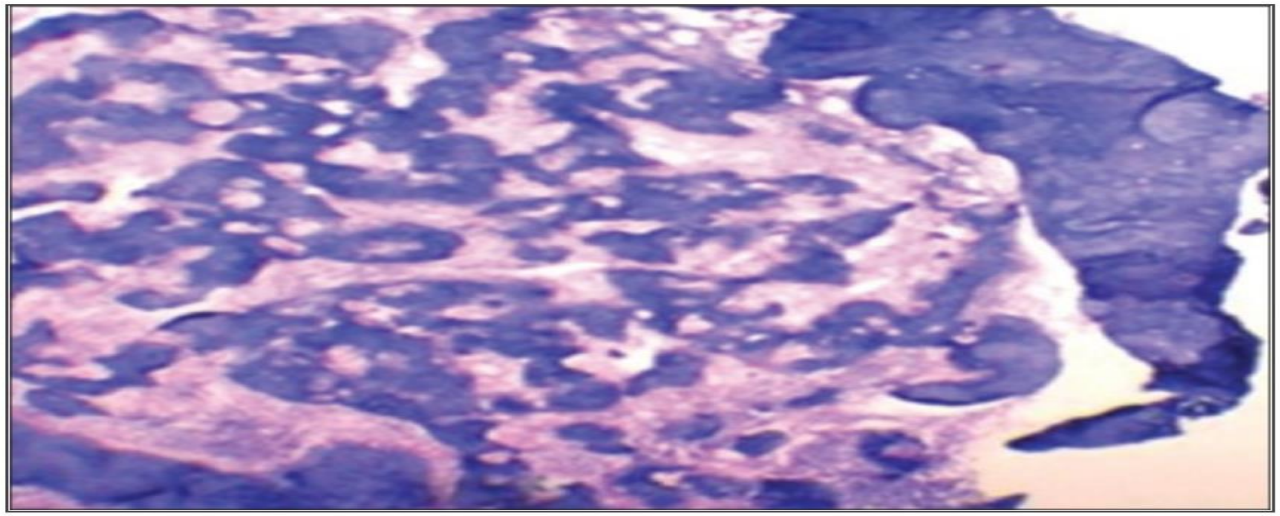


Figure 5
Low-power magnification of H&E-stained decalcified section showing areas of bone and basophilic globular masses resembling cementum within a delicate fibrocellular connective tissue stroma.

Treatment

No treatment is needed but periodic follow-up is recommended, because occasional cases were observed to progress into florid osseous dysplasia.

most important characteristic feature is that, it is often difficult to be removed from the bone cavity in one piece so removed as multiple fragment of gritty tissue this feature allow the distinguish from ossifying fibroma that separated easily from the bone and removes in one fragment

Figure 3

Photograph showing macroscopic appearance of surgically excised specimen

- Florid cemento-osseous dysplasia :-

The term florid cement-osseous osseous dysplasia (FCOD) ,describe a condition of exuberant *multi quadrant masses* of cementum and/or bone in both jaws and in some cases, simple bone cavity like lesions in affected quadrant .

1- (FCOD) is not associated with any other extra gnathic abnormalities and there are no abnormalities in blood chemistry of patients .

2- The disease has a striking tendency for bilateral occurrence, often presenting symmetrically in the jaws .

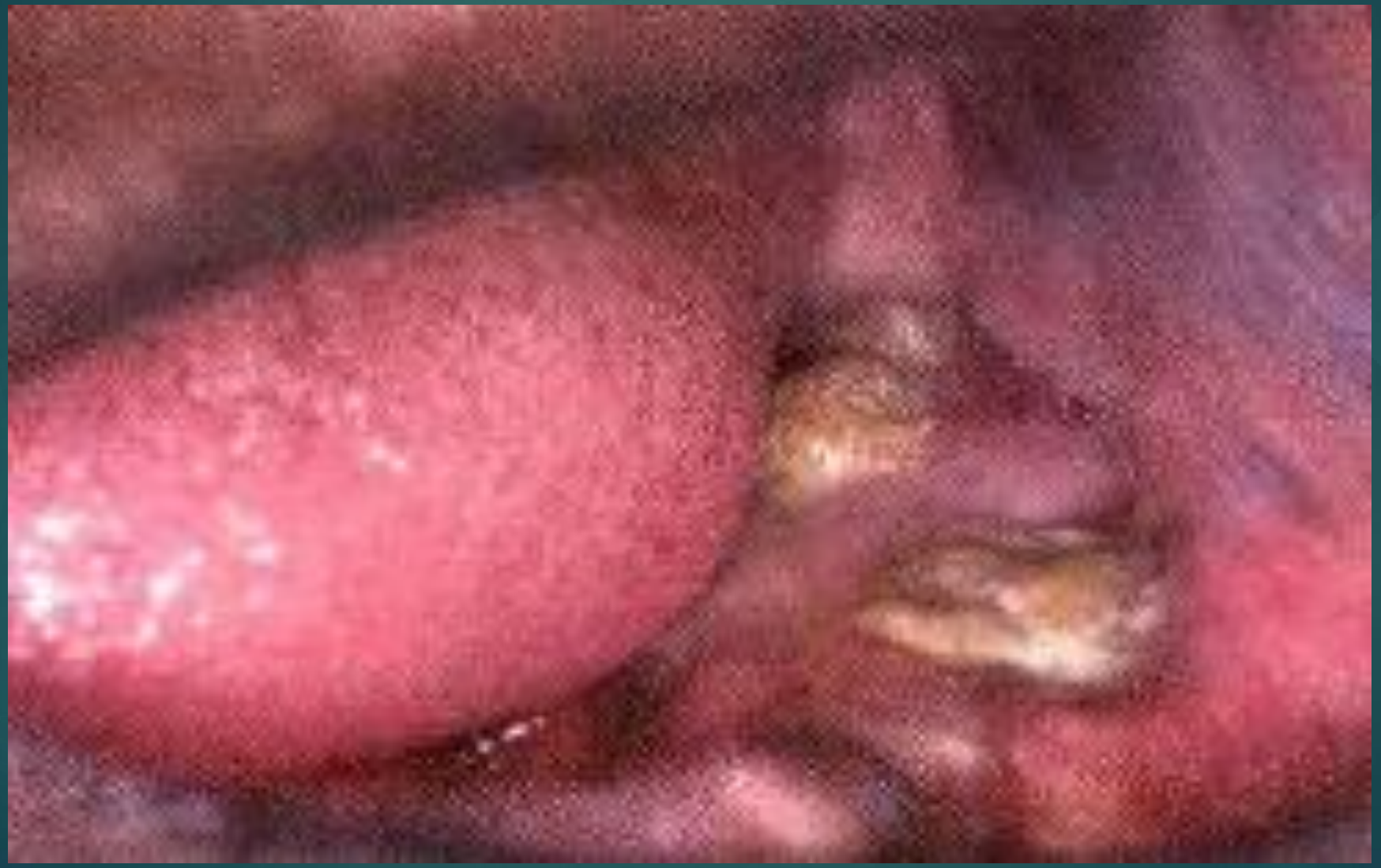
3- When the lesions are large, jaw expansion may be noted and symptoms of dull pain may be noted in the involved area.

4- Black women are affected more than 90% .

5- In some cases, a familial trend can be observed .

The process may be totally asymptomatic and, in such cases, the lesion is detected when radiographs are taken for some other purposes

Florid cement-osseous osseous dysplasia (FCOD)

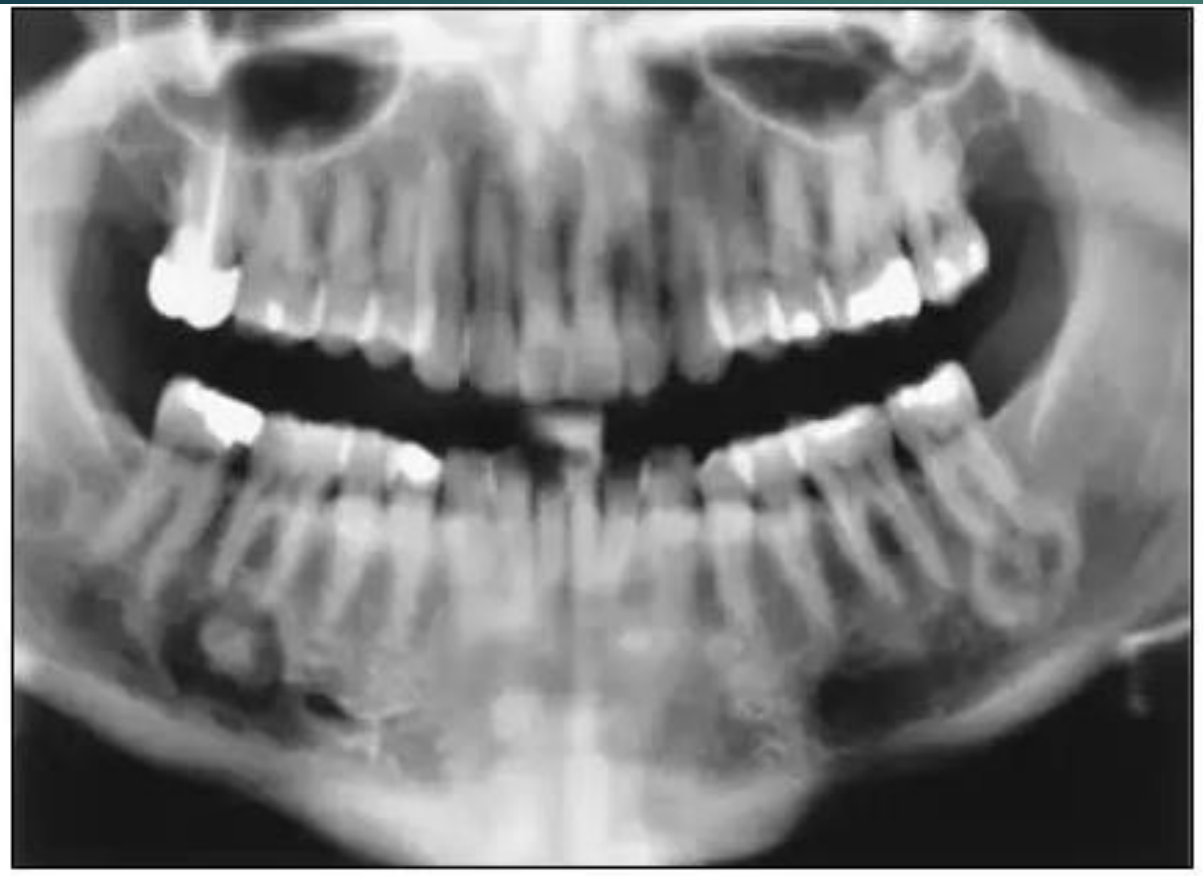


***Radiographically*:-**

radiographic appearance of FCOD depends on the degree of maturation of the lesion.

The lesion may appear as radiolucent, mixed in which the lesions appear as multiple sclerotic masses that may or may not be surrounded by radiolucent halo and located in two or more quadrants or as completely sclerotic mass .

Most of the times, these lesions are diagnosed incidentally on routine radiographic examination



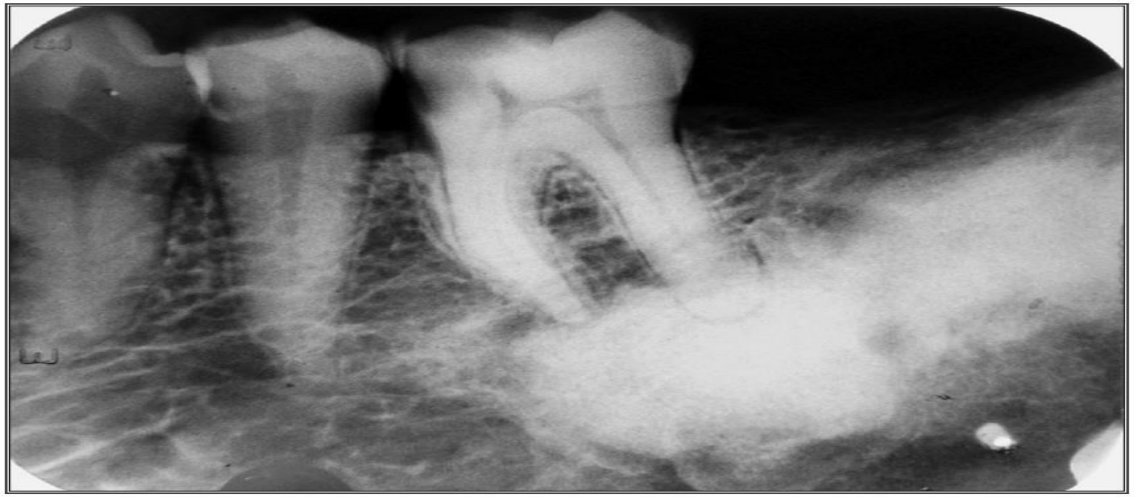
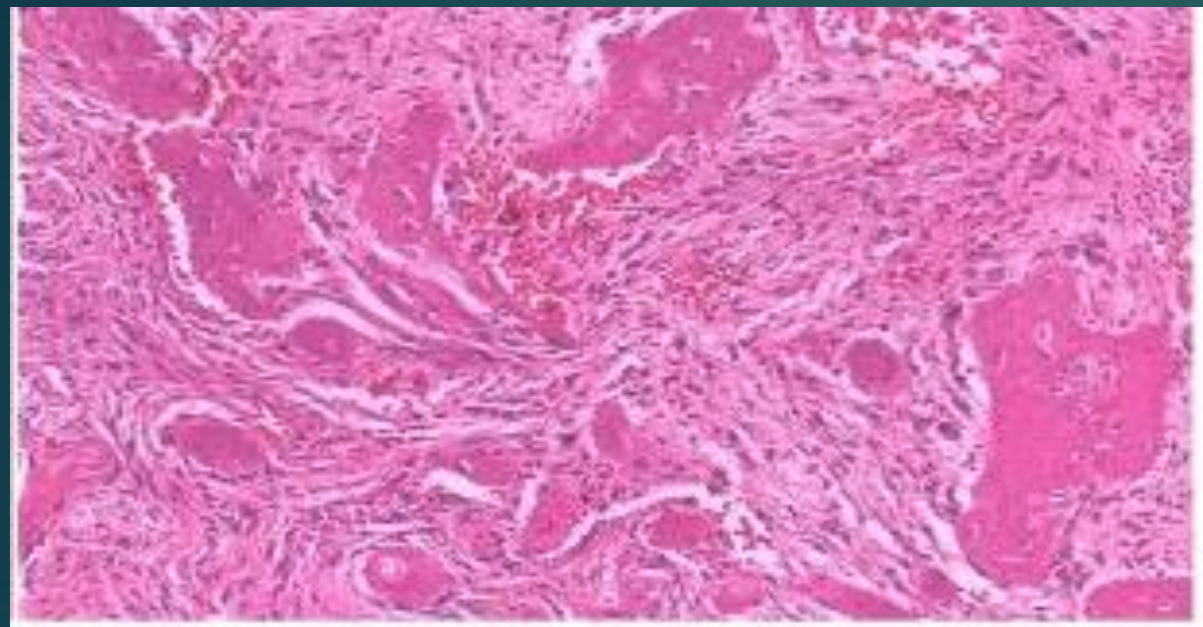


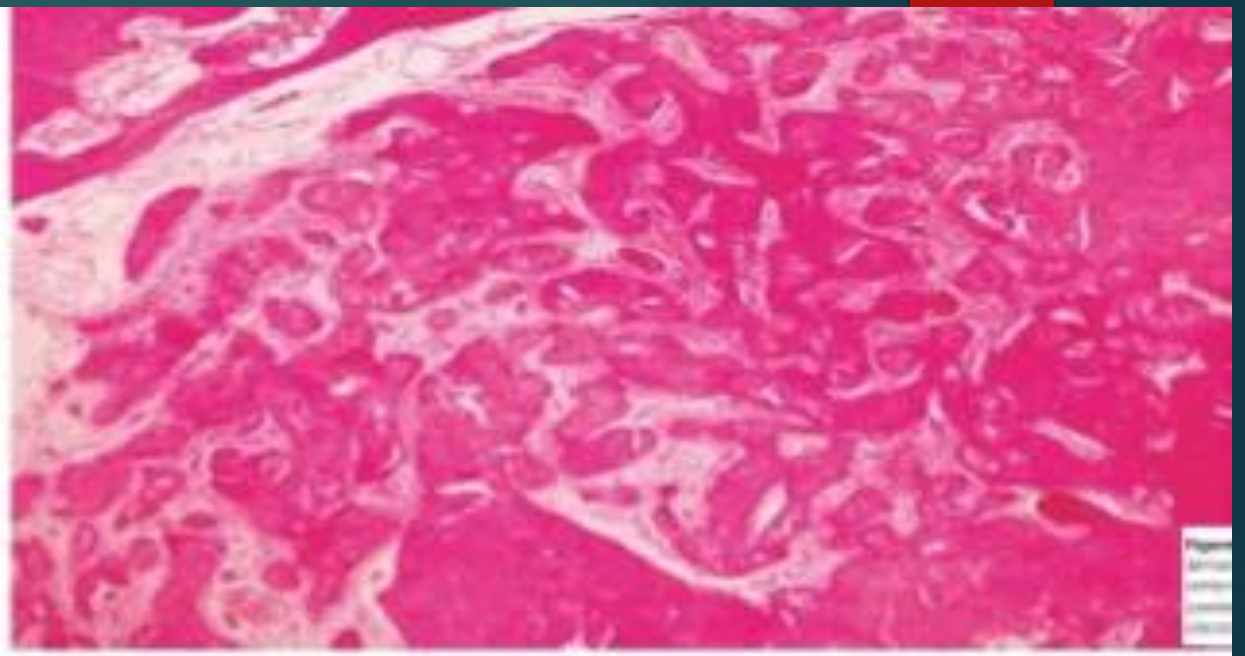
Figure 1
Intraoral periapical radiograph showing well-defined irregularly shaped sclerotic masses corresponding to the roots of left first and second permanent molar teeth of mandible

HISTOPATHOLOGIC FEATURES

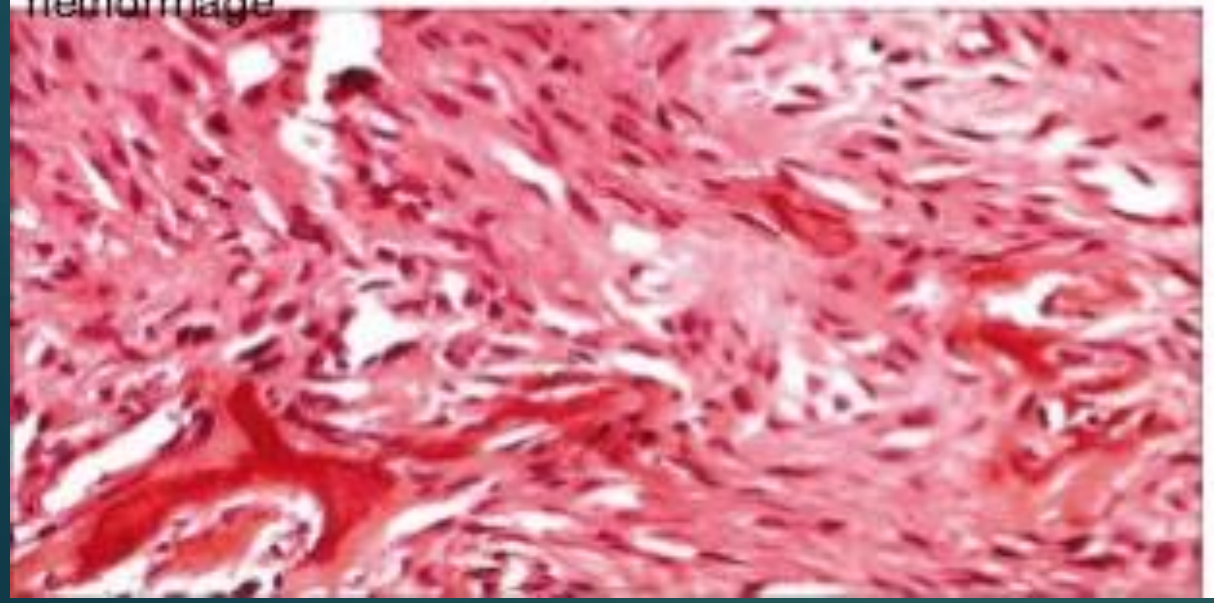
- ALL THREE PATTERNS DEMONSTRATE SIMILAR HISTOPATHOLOGIC FEATURES.
- FRAGMENTS OF CELLULAR MESENCHYMAL TISSUE COMPOSED OF SPINDLE-SHAPED FIBROBLASTS AND COLLAGEN FIBERS WITH NUMEROUS SMALL BLOOD *VESSELS*.
- *FREE* HEMORRHAGE IS TYPICALLY NOTED INTERSPERSED THROUGH OUT THE LESION.
- WITHIN THIS FIBROUS CONNECTIVE TISSUE BACKGROUND IS A MIXTURE OF *WOVEN BONE, LAMELLAR BONE, AND CEMENTUM* LIKE PARTICLES.
- AS THE LESIONS MATURE AND BECOME MORE SCLEROTIC. THE RATIO OF FIBROUS CONNECTIVE TISSUE TO MINERALIZED MATERIAL DECREASES.
- WITH MATURATION, THE BONE TRABECULAE BECOME THICK CURVILINEAR STRUCTURES THAT HAVE BEEN SAID TO RESEMBLE THE SHAPE OF GINGER ROOTS.
- WITH PROGRESSION TO THE FINAL RADIOPAQUE STAGE, INDIVIDUAL TRABECULAE FUSE AND FORM LOBULAR MASSES COMPOSED OF SHEETS OR FUSED GLOBULES OF RELATIVELY ACELLULAR AND DISORGANIZED CEMENTOOSSEOUS MATERIAL

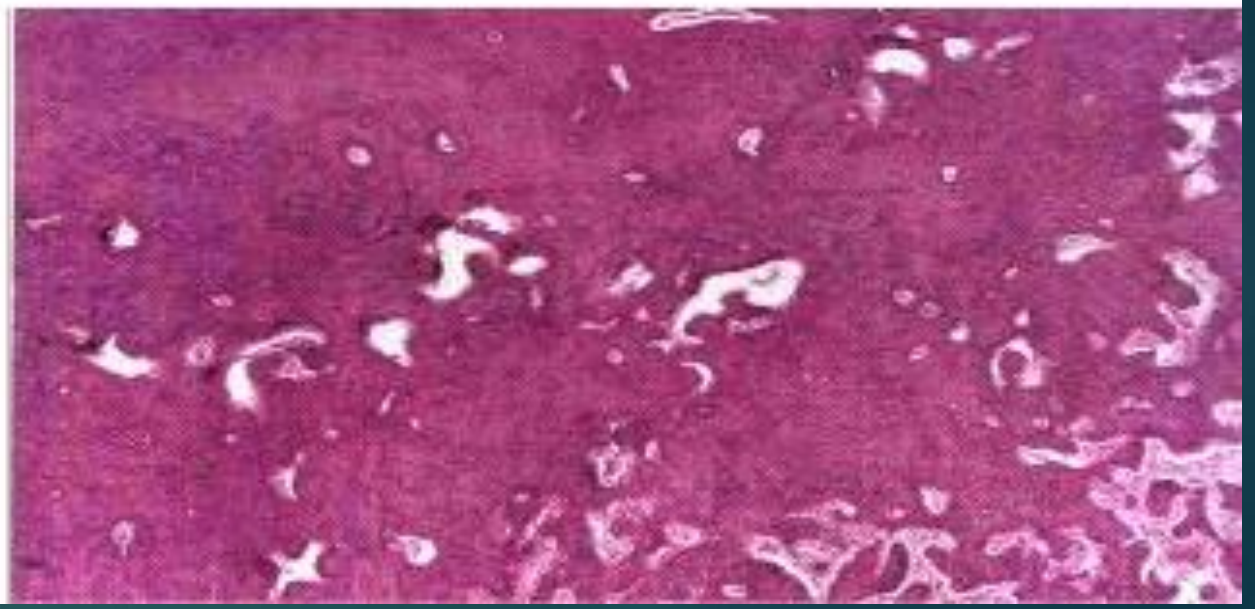


ct stroma containing spindle-shaped fibroblasts and collagen fibers with numerous small blood *vessels*, *free* hemorrhage



curvilinear structures





TREATMENT AND PROGNOSIS

- SCLEROSIS → HYPOVASCULAR → PRONE TO NECROSIS
- **SEQUESTRATION** → OCCURS SLOWLY → HEALING.
- ASYMPTOMATIC PATIENT → REGULAR RECALL EXAMINATIONS WITH PROPHYLAXIS.
- BIOPSY OR ELECTIVE EXTRACTION OF TEETH SHOULD BE AVOIDED.
- **SAUCERIZATION** OF DEAD BONE MAY SPEED HEALING.