DISEASES OF BONE

Dept.of Oral Pathology

& Microbiology

Learning Objectives

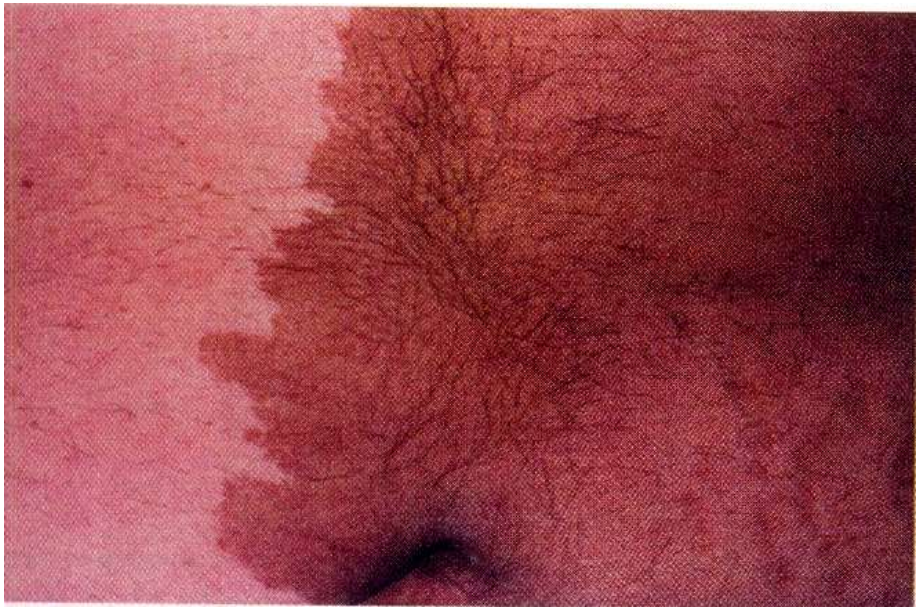
At the end of the lecture student should be able to describe

- Clinical features, oral manifestations, radiographic features, histopathological features,& surgical management of fibrous dysplasia
- Classification of Reactive (dysplastic) lesions arising in the tooth bearing areas.

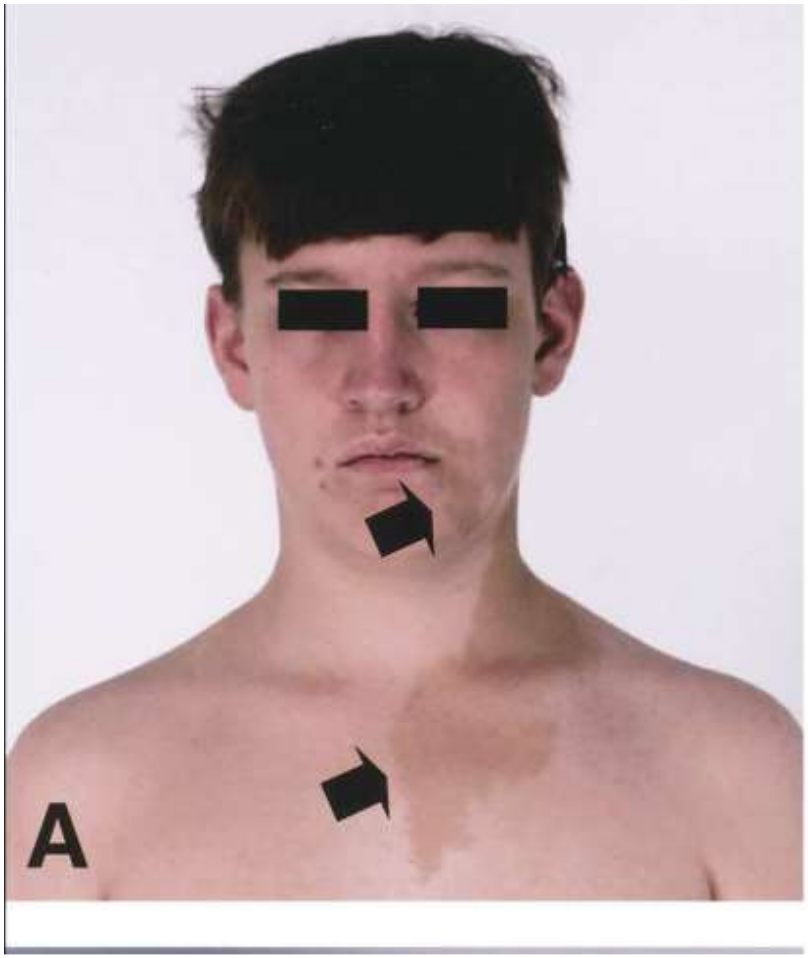
POLYOSTOTIC F.D.

- 1st or 2nd decade of life (early in life)
- It is less common than Monostotic type (20% of cases)
- Clinical picture is dominated by symptoms related to long bone lesions.
- Jaws are less commonly affected.

- Deformity, bowing or thickening of long bones is evident
- Pathological fractures with resulting pain & deformity is very common
- Leg length discrepancy is noted as a result of involvement of upper portion of femur (Hockey stick deformity)



Café au lait (Coffee in milk) macules are pale brown well defined pigmentation with irregular outline, generally unilateral. present on neck, trunk, thigh & also on oral mucosa.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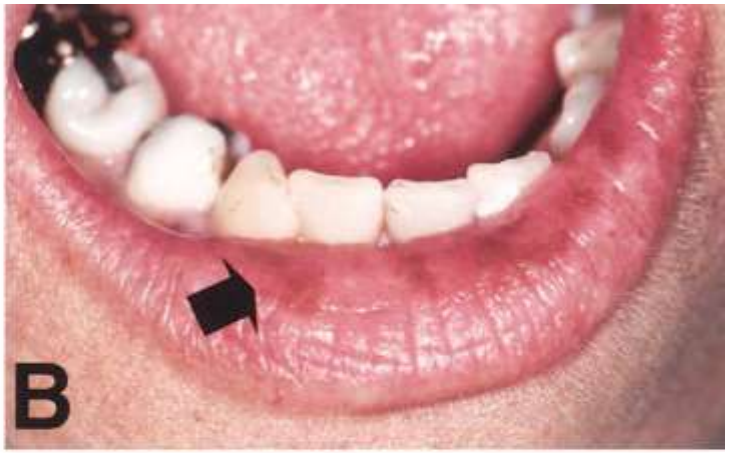
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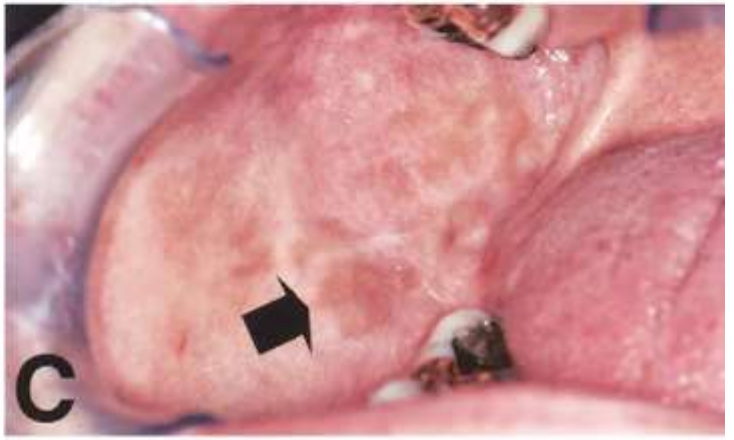
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ORAL MANIFESTATIONS

- Displacement of teeth, malocclusion and interference with normal eruption patterns; mobility is not a common feature.

RADIOGRAPHIC FEATURES:

- In general medullary portions of bone are rarefied.
- Irregular trabeculations, multi locular cystic appearance.
- Cortical bone is thinned and considerably expanded.

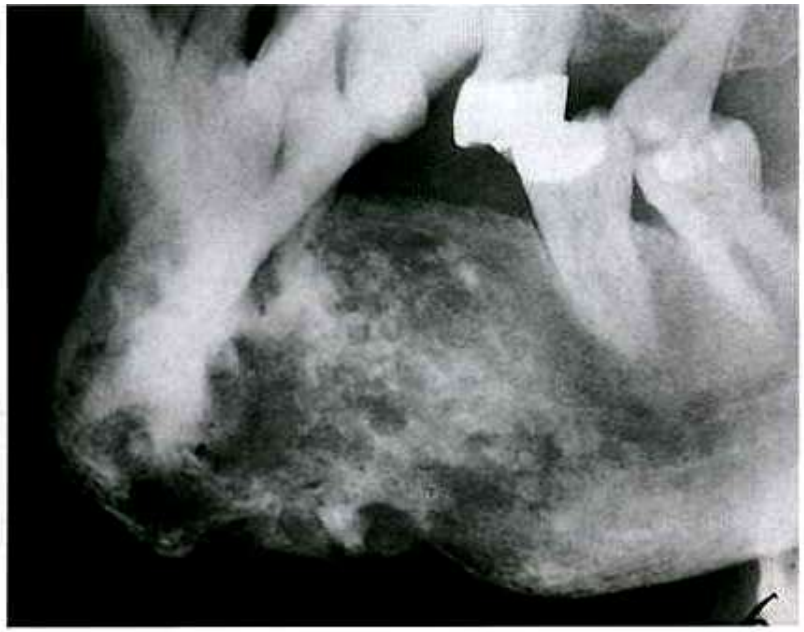
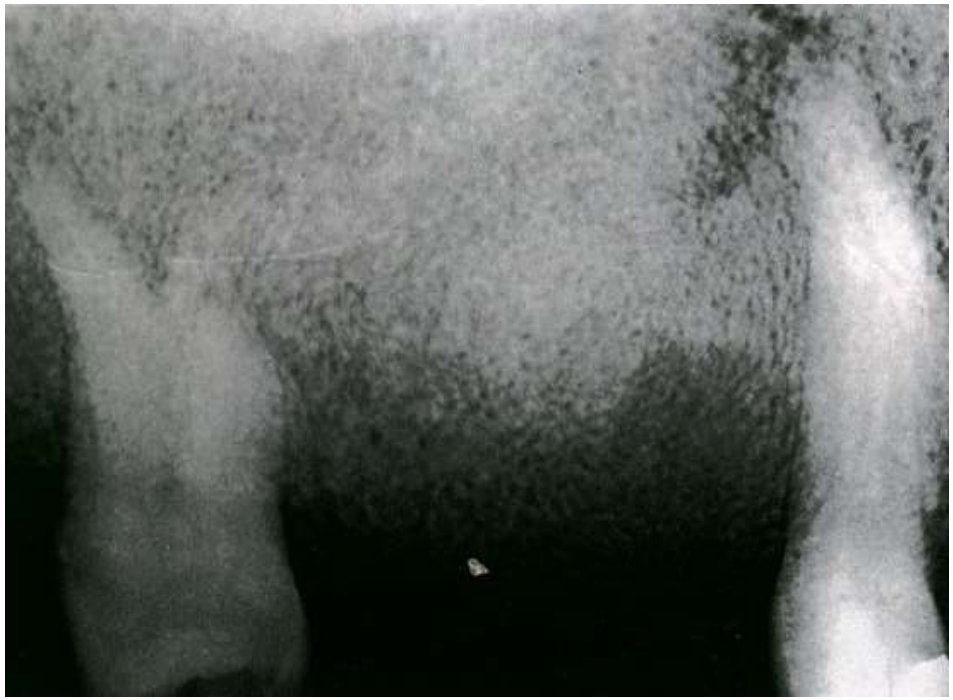


Fig. 14.1 Fibrous dysplasia. This example is heavily calcified but shows the lack of definable margins of the lesion.

- Margins of the lesion are poorly defined.

Lesion appears to blend into surrounding normal bone without evidence of circumscribed border.



Characteristic X-ray picture – radiopacity of numerous poorly calcified bony trabeculae imparting a

"Ground glass appearance"or

"Orange peel appearance"

- Three basic patterns have been identified for monostotic FD:
  - Unilocular or multilocular radiolucency with a ***well circumscribed*** border, network of fine bony trabeculae..
  - Increase trabeculation, rendering the image more opaque and mottled in appearance.
  - Many delicate trabeculae : ***ground glass appearance or peau d' orange.***

HISTOPATHOLOGY

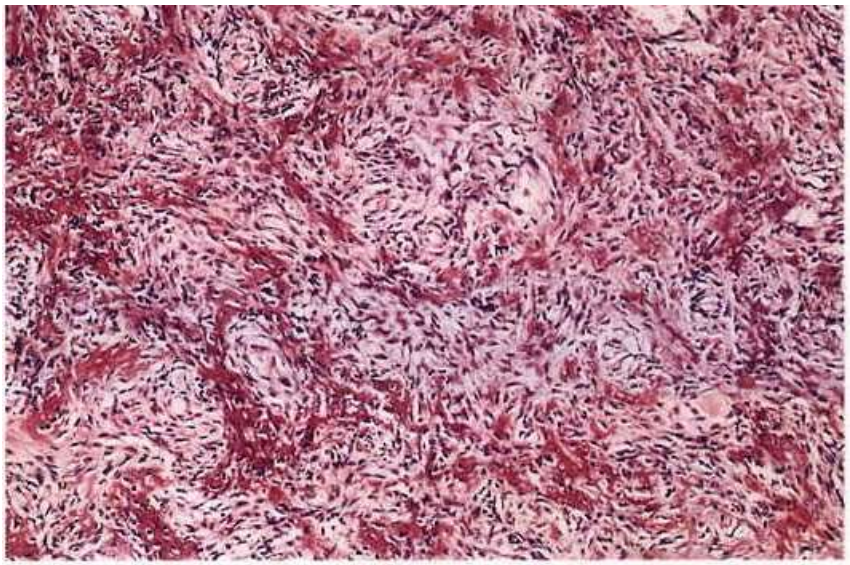
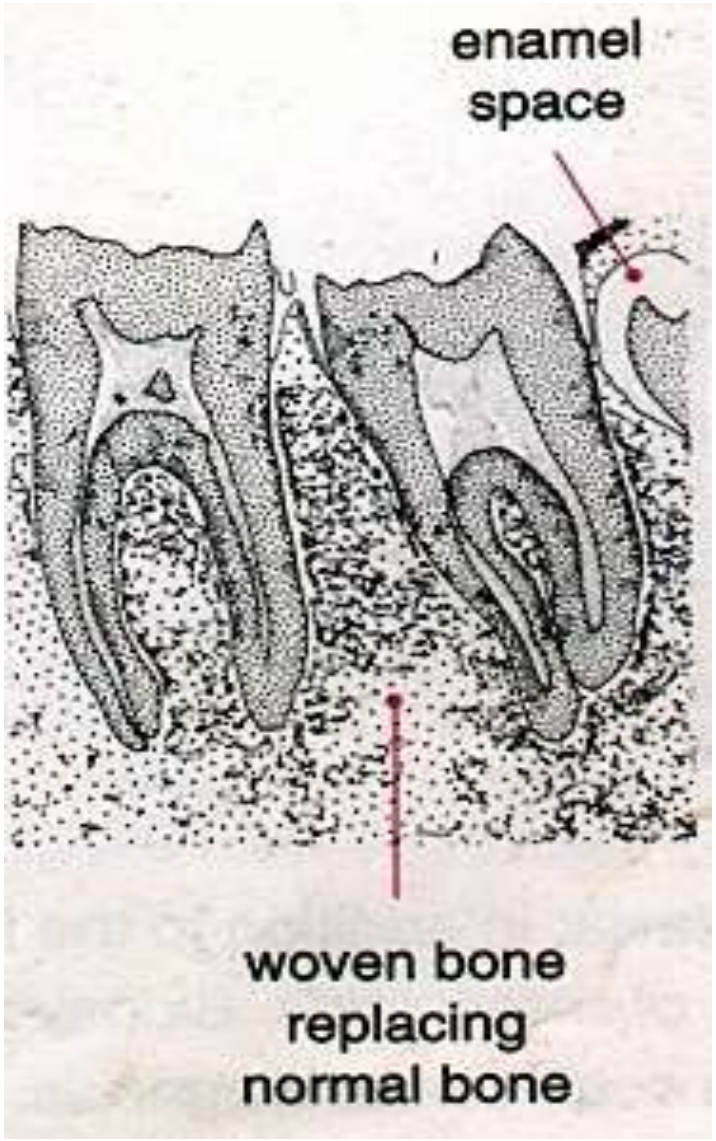
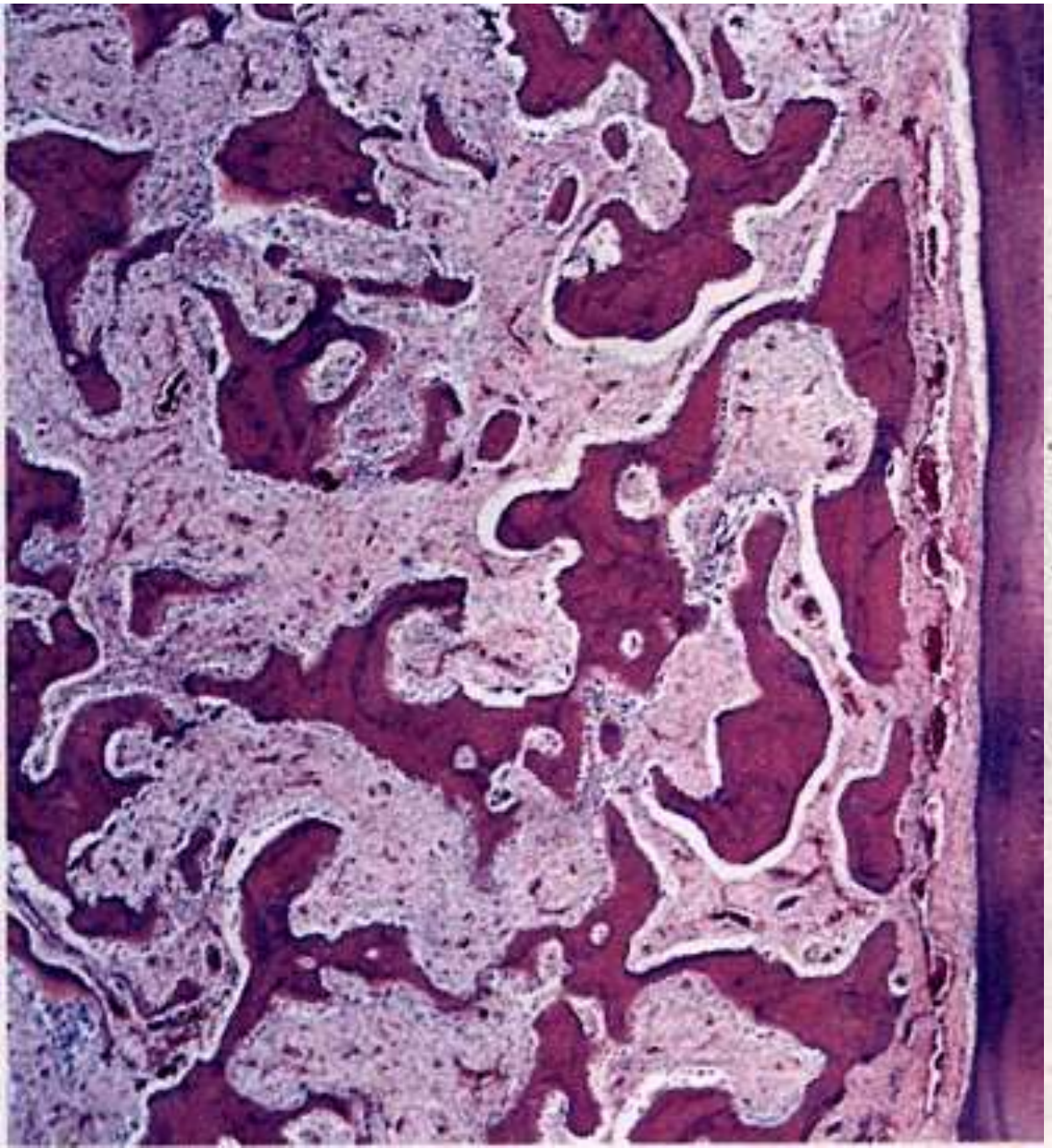


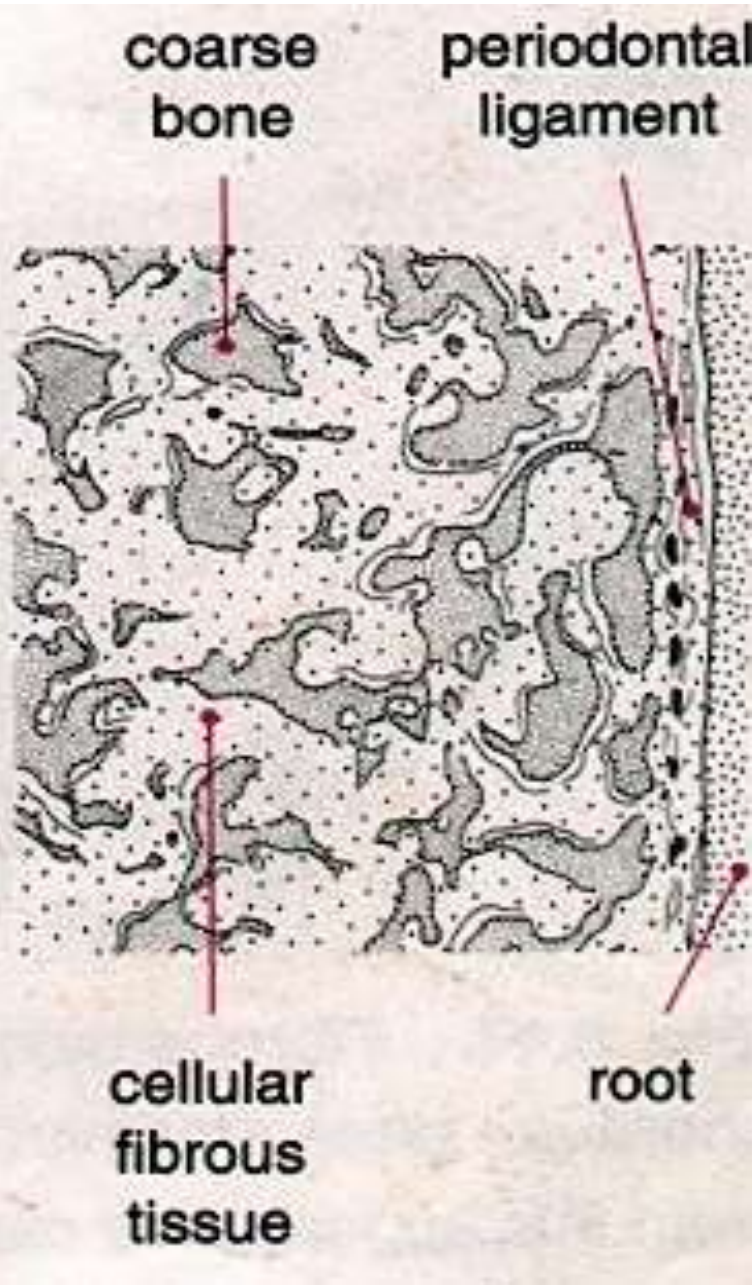
Fig. 14.4 Fibrous dysplasia. Early lesion shows cellular fibrous tissue with scanty bone formation.

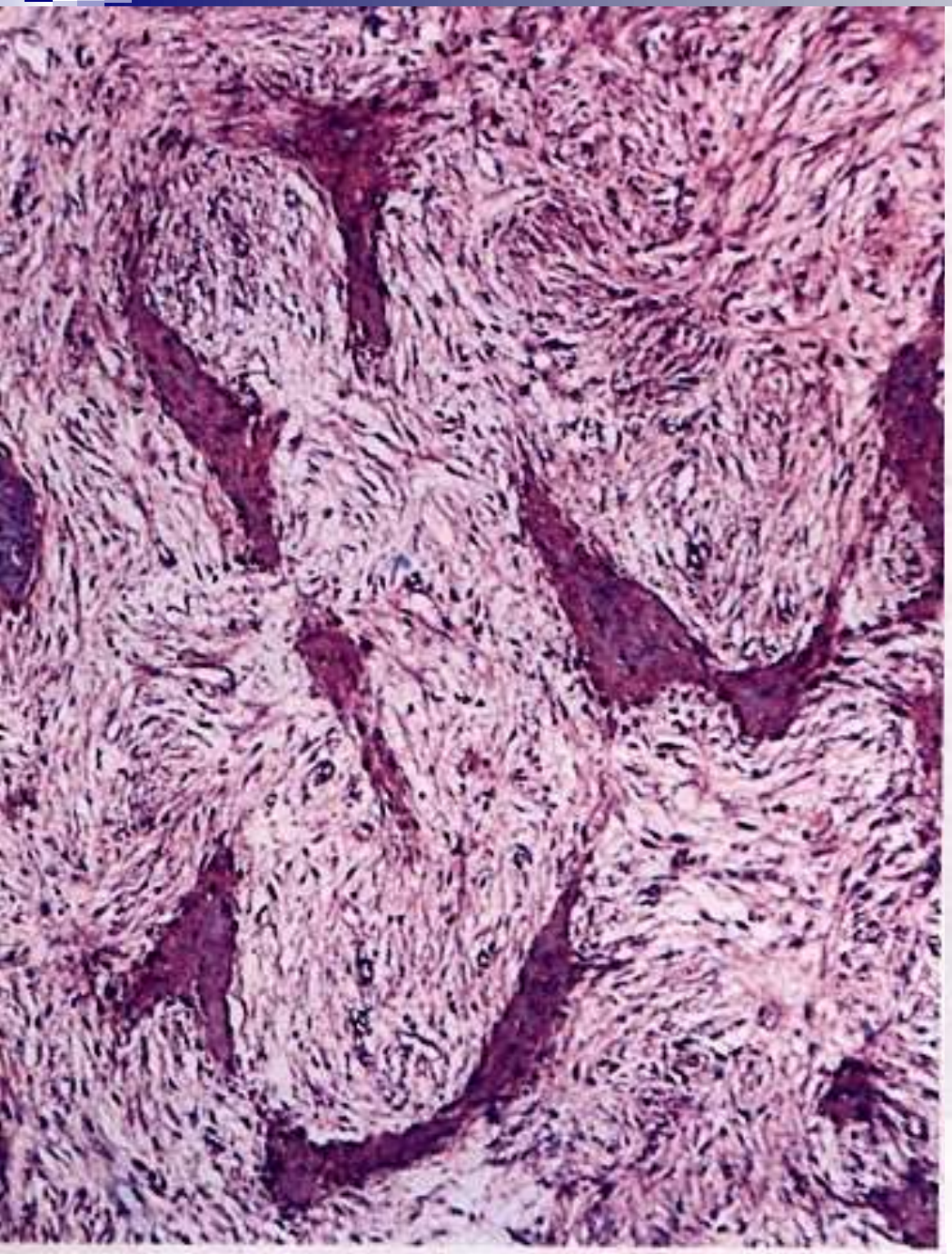
Typical microscopic feature of fibrous dysplasia shows irregularly shaped trabeculae of immature (woven) bone in a cellular, loosely arranged fibrous stroma.

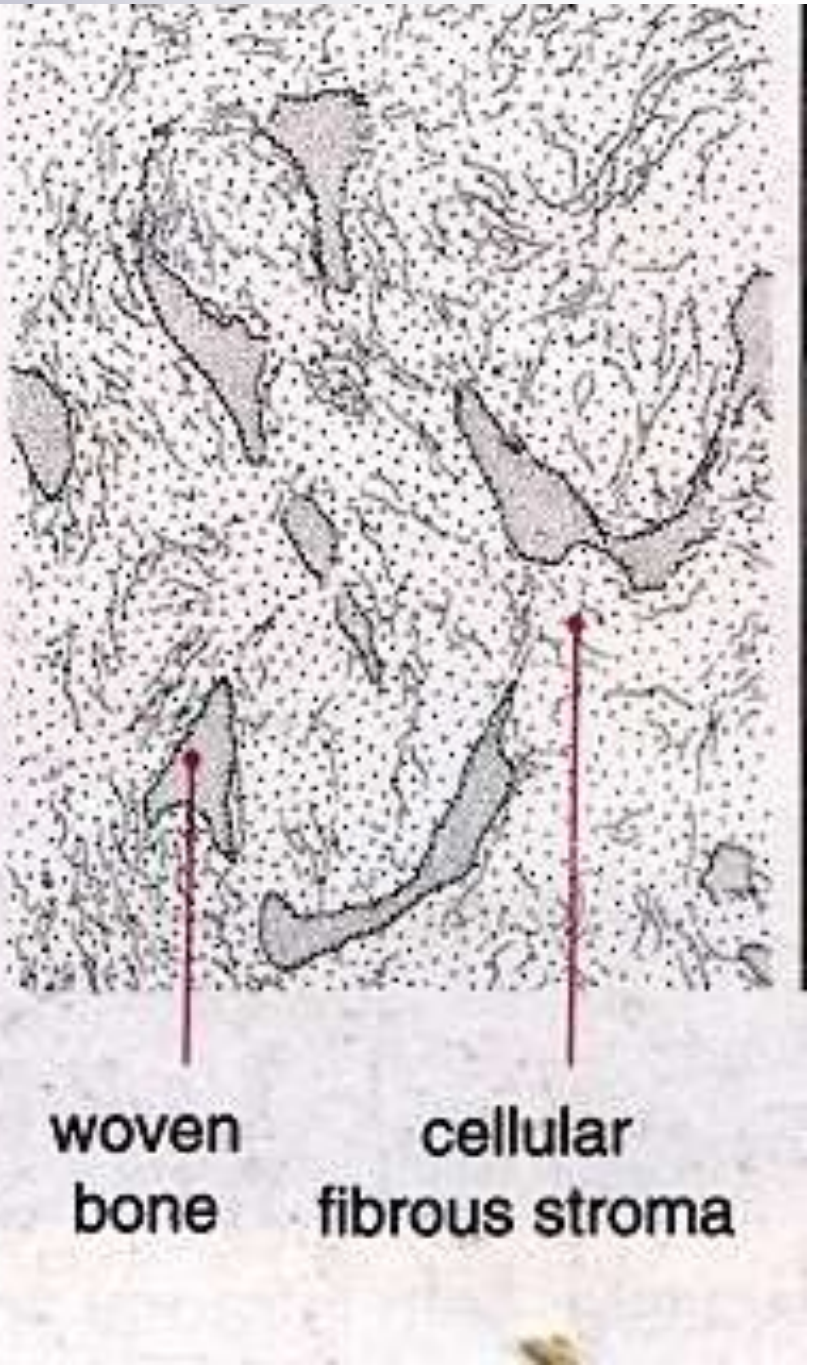
- Lesional bone fuses directly to normal bone at the periphery of the lesion, so that **NO** capsule or line of demarcation is present.
- Bony trabeculae often assume curvilinear shapes, which have been described as “CHINESE LETTER” arrangement. (₣ ₤ ₪ ₺ ₶ ¥ コ ゴ)


enamel
space
woven bone
replacing
normal bone




coarse bone
periodontal ligament
cellular fibrous tissue
root




woven
bone
cellular
fibrous stroma

Histopath

- Bony trabeculae are considered to arise by metaplasia & are not surrounded by osteoblasts.
- Jaw lesions might undergo maturation but long bone lesions do not show any maturation even in older aged individuals

FIBROUS DYSPLASIA

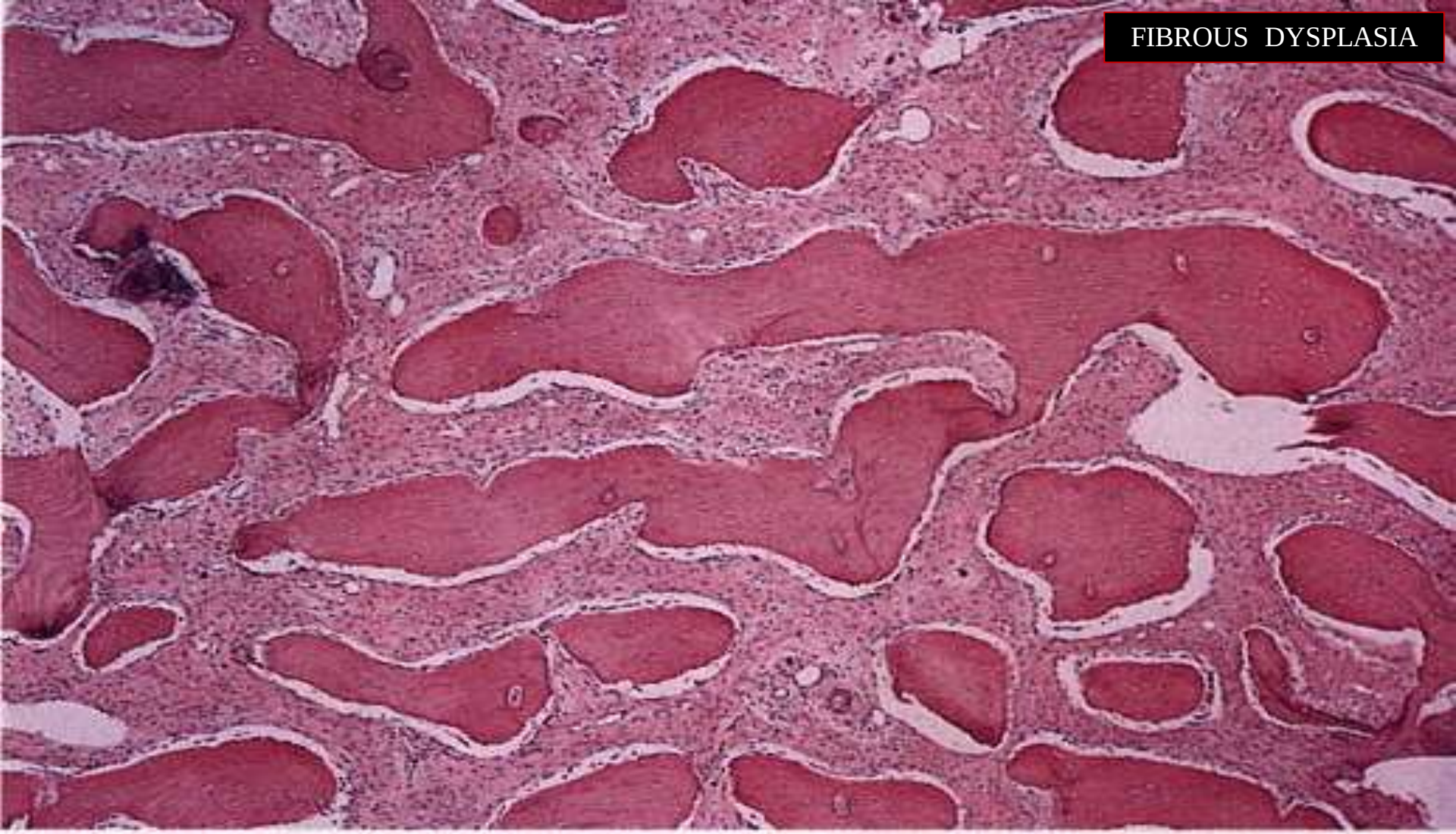


Fig. 14.8 Fibrous dysplasia. Mature specimen consisting of lamellar bone containing osteocytes.

SURGICAL MANAGEMENT

- Treatment depends on the biologic behavior of the lesion in each patient
- The options for surgical management include either contour excision or en bloc resection with or without bone grafting.
- Cosmetic reshaping after certain age (after the growth has stopped).

- Radiation therapy is **CONTRAINDICATED**, as it carries the risk of development of post-radiation ***Osteosarcoma.***
- Recurrence:
  - Within two to three years
  - 30 % of cases

REACTIVE (DYSPLASTIC) LESIONS ARISING IN THE TOOTH BEARING AREAS..

1. Peri apical cemento osseous dysplasia.
2. Focal cemento osseous dysplasia.
3. Florid cemento osseous dysplasia.

- Cemento – osseous dysplasia essentially represent a single disease process and the three distinctive forms can be thought to have a continuum ranging from minor to major in terms of degree of involvement.
- Lesions of cemento osseous dysplasia have a unique location and histologic features due to their periodontal ligament origin.

CLASSIFICATION SUGGESTED BY MELROSE

Cemento–osseous dysplasia

I. Non –hereditary
   1. Peri apical cemento osseous dysplasia
   2. Focal cemento osseous dysplasia
   3. Florid cemento osseous dysplasia

II. Hereditary
   1. Familial gigantiform cementoma

Summary

- Fibrous dysplasias clinically manifests as slow growing bony swelling, skin pigmentation (café-au-lait), displacement of teeth, malocclusion.
- Radiographically margins of the lesion are poorly defined, &“Ground glass appearance”or “Orange peel appearance”
- Histologically, bony trabeculae with “Chinese Letter” arrangement,& without osteoblastic rimming.

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- Color Atlas of Oral Diseases Cawson, R. 2nd & 5th edition
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Thank You