

Oral Pathology module

Odontogenic tumours

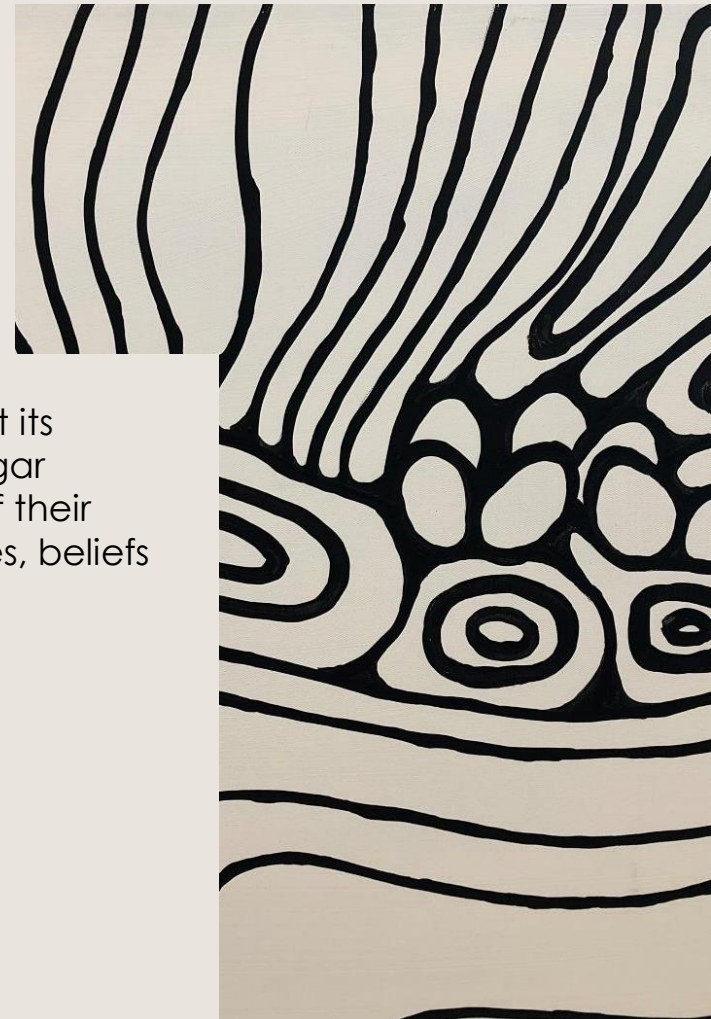
A/Prof Omar Kujan

DENT4217

BDS DipOPath MSc MFDS RCPS FHEA FRCPath PhD

Acknowledgement of country

The University of Western Australia acknowledges that its campus is situated on Noongar land, and that Noongar people remain the spiritual and cultural custodians of their land, and continue to practise their values, languages, beliefs and knowledge.



Artist: Dr Richard Barry Walley OAM

Learning outcomes

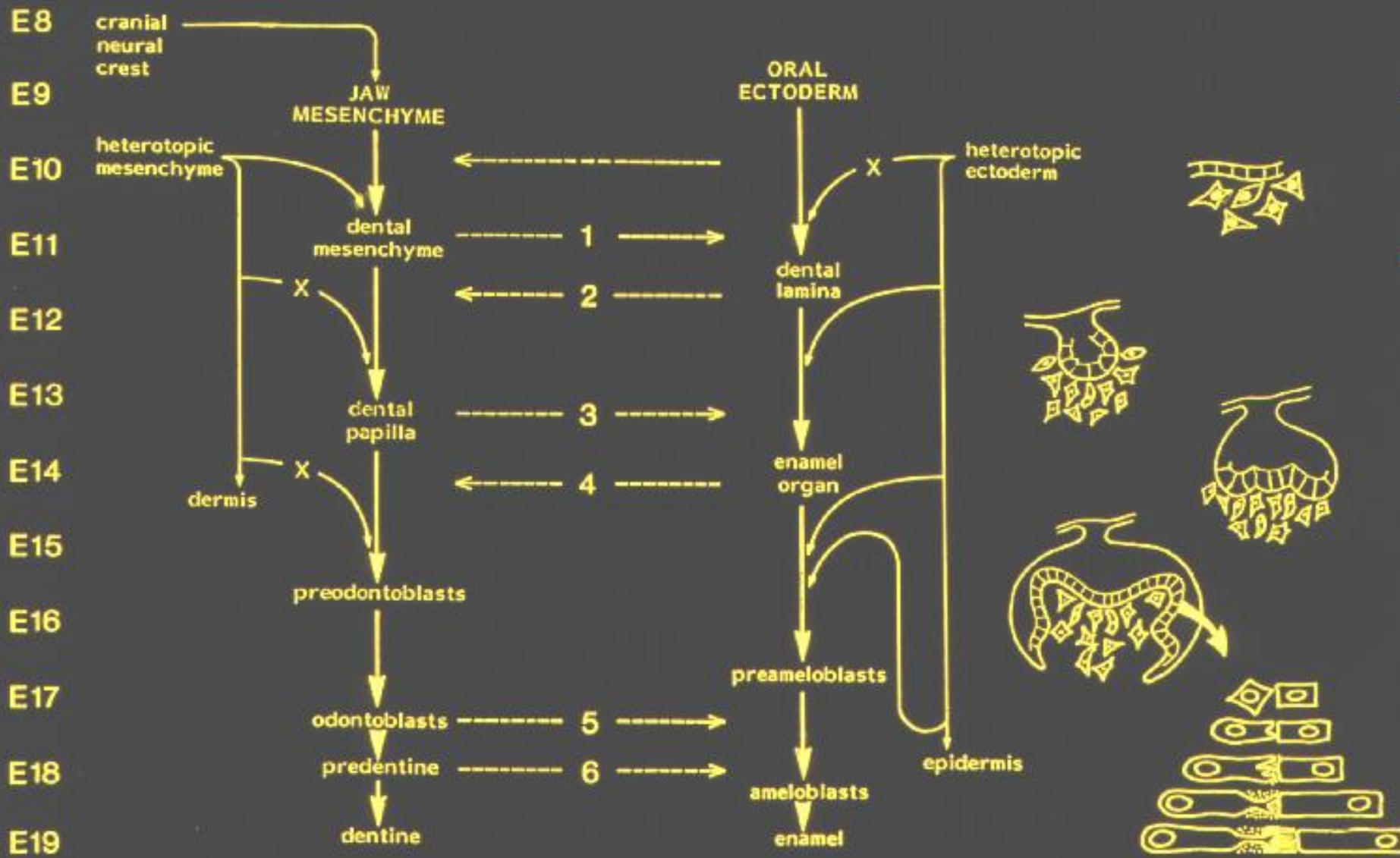
1. Outline the classification of odontogenic tumours
2. Describe the different entities of odontogenic tumours

WHO Classification of Odontogenic Tumours (Kramer et al 1991)

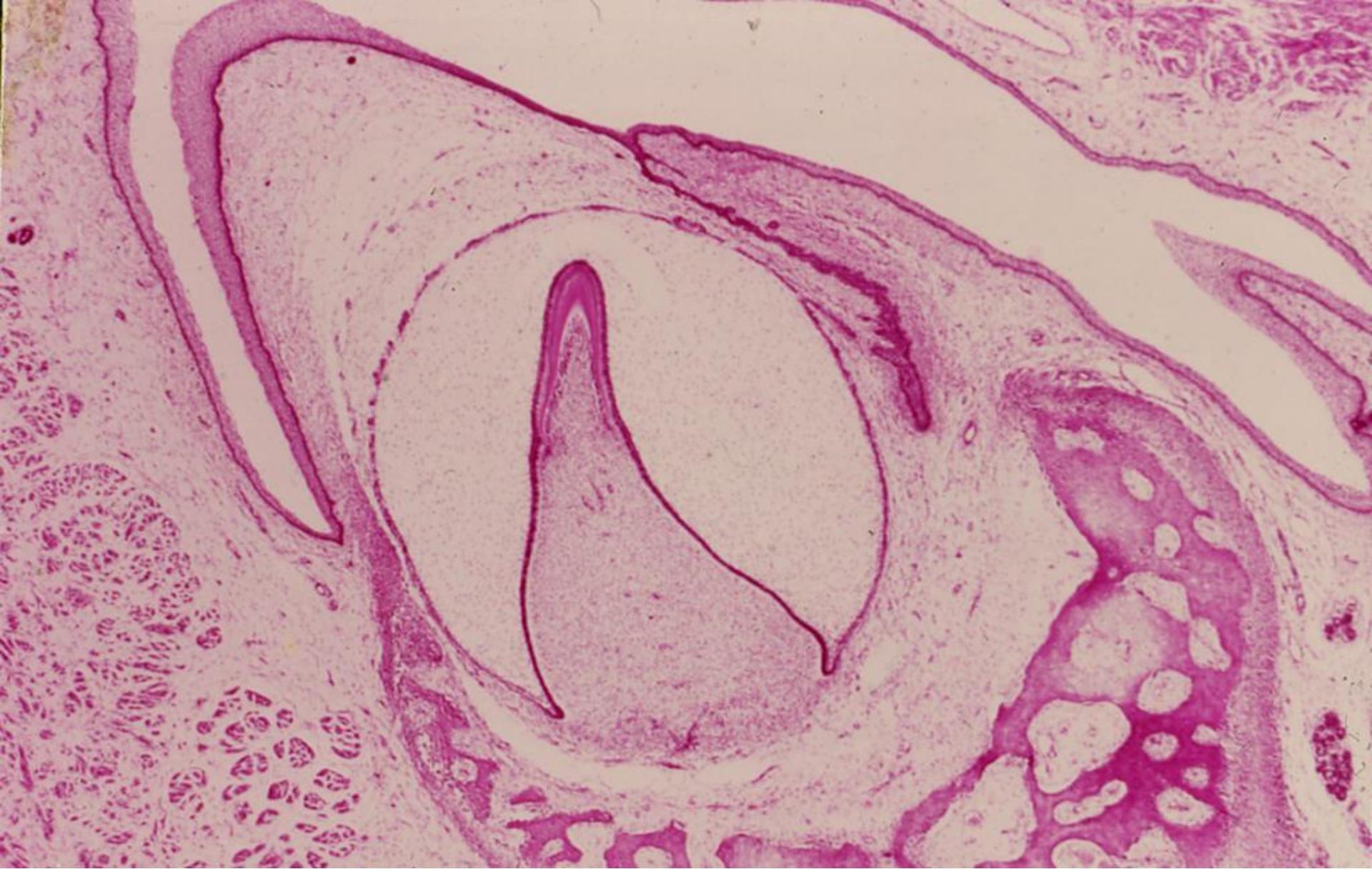
- based on the similarity between tumours and various stages of tooth development

Classification of Benign Odontogenic Tumours

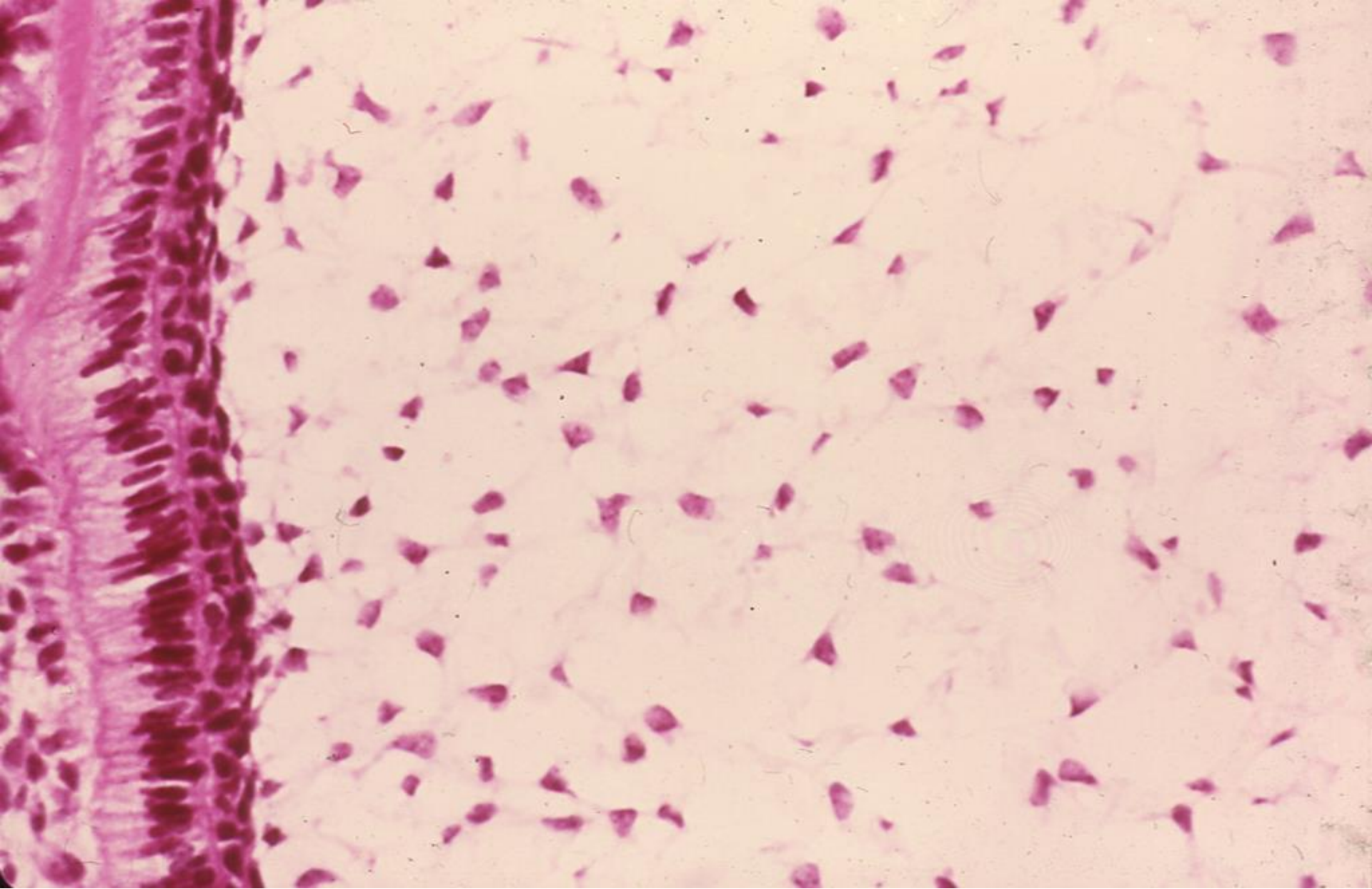
1. Odontogenic epithelium without odontogenic ectomesenchyme
2. Odontogenic epithelium with odontogenic ectomesenchyme, with or without dental hard tissue formation
3. Odontogenic ectomesenchyme with or without included odontogenic epithelium



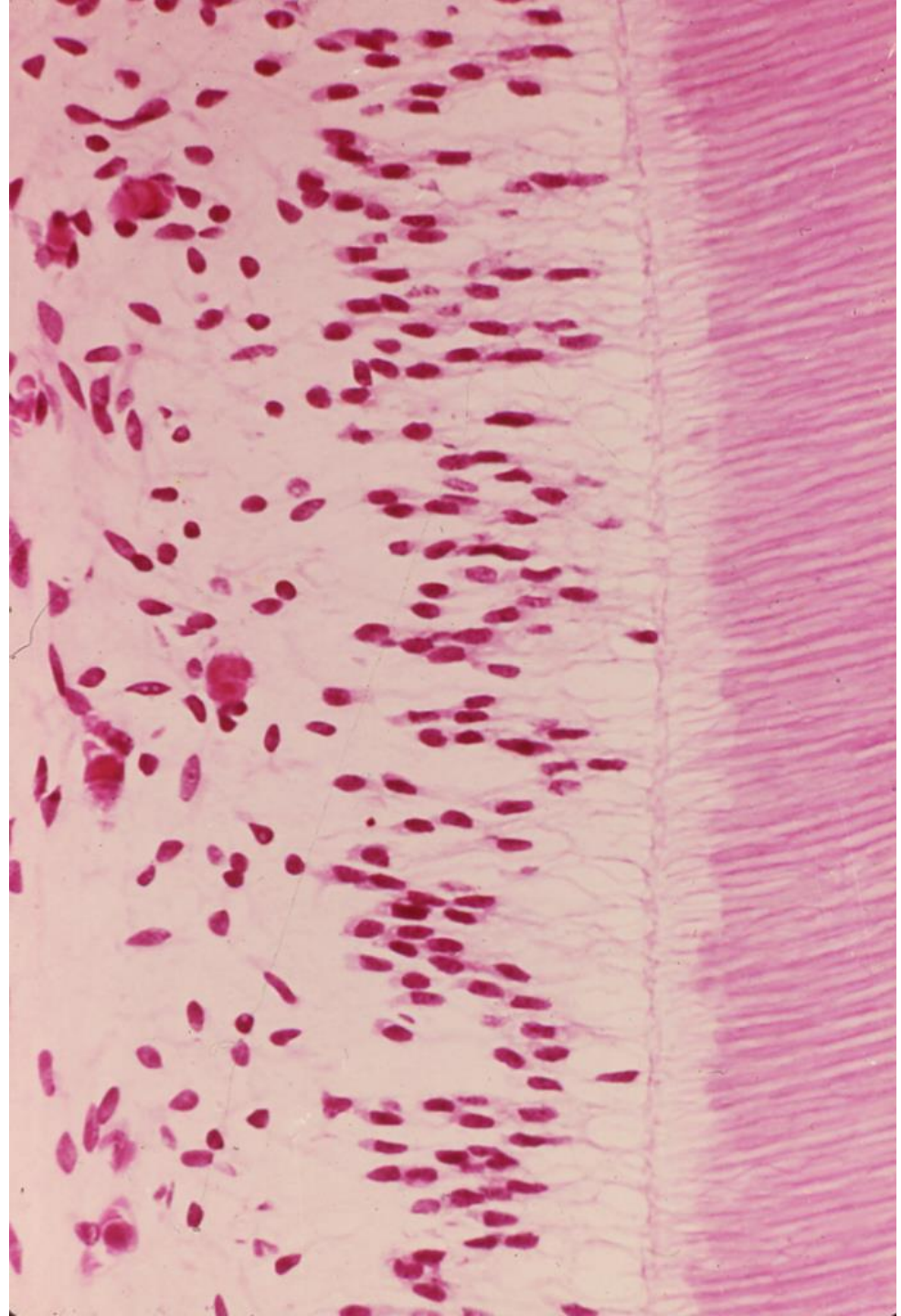
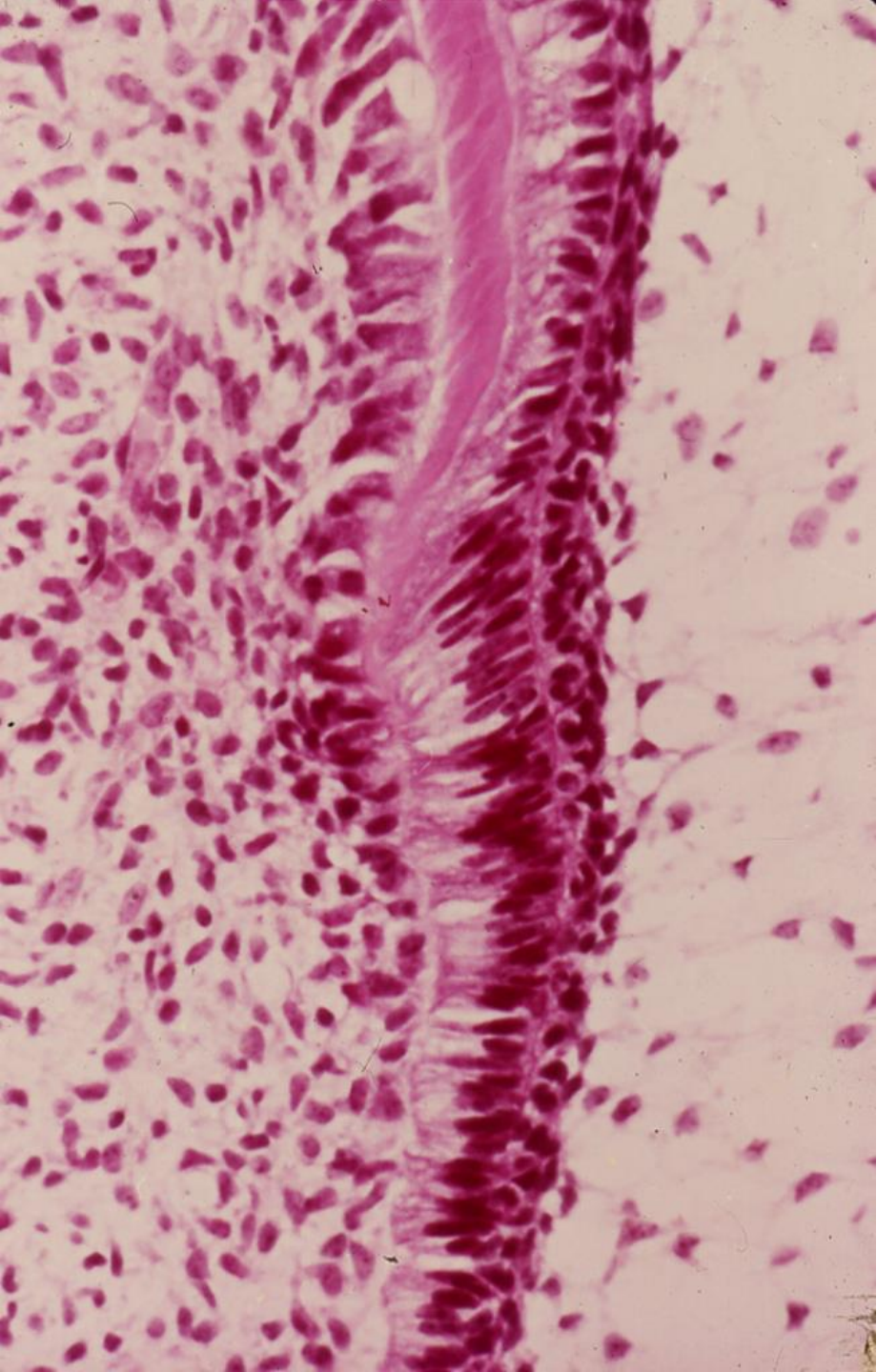
Tissue interactions in tooth formation



Tooth germ - bell stage



Layers of the enamel organ



1. Odontogenic epithelium without odontogenic ectomesenchyme

- Ameloblastoma
- Squamous odontogenic tumour
- Adenomatoid odontogenic tumour
- Calcifying epithelial odontogenic tumour (Pindborg Tumour)

2. Odontogenic epithelium with odontogenic ectomesenchyme with or without dental hard tissue

- Ameloblastic fibroma
- Ameloblastic fibro-dentinoma
- Ameloblastic fibro-odontome
- Calcifying odontogenic cyst
- Complex odontome
- Compound odontome

3. Odontogenic ectomesenchyme with or without included odontogenic epithelium

- Odontogenic fibroma
- Myxoma [myxofibroma]
- Benign cementoblastoma ('true' cementoma)

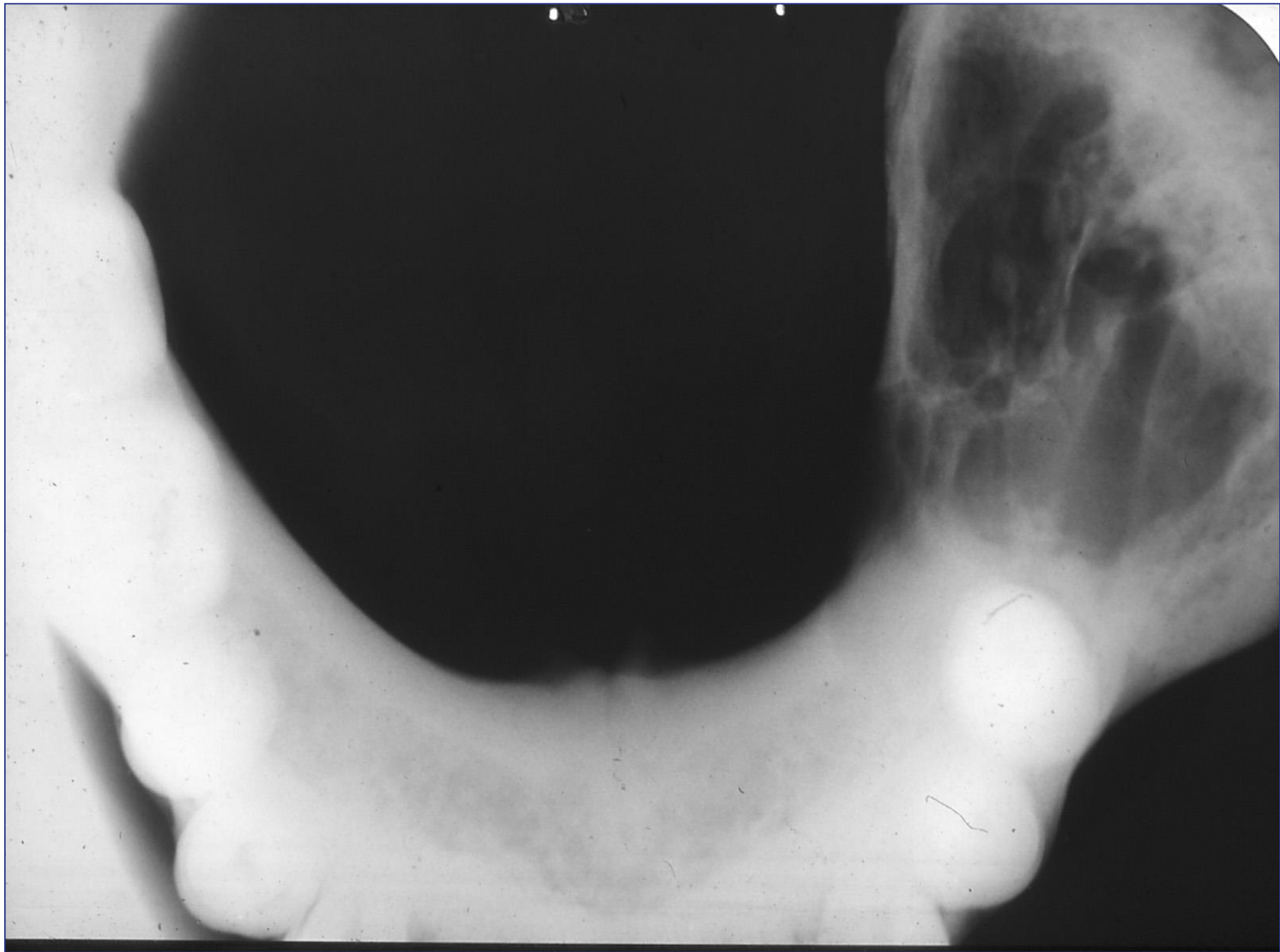
Malignant Odontogenic Tumours

1. Clear cell odontogenic carcinoma
2. Malignant ameloblastoma
3. Primary intra-osseous carcinoma
4. Malignant variants of other odontogenic epithelial tumours
5. Malignant changes in odontogenic cysts

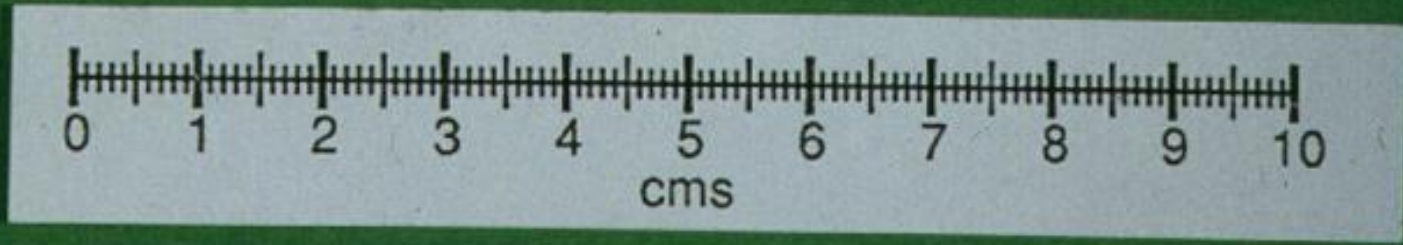
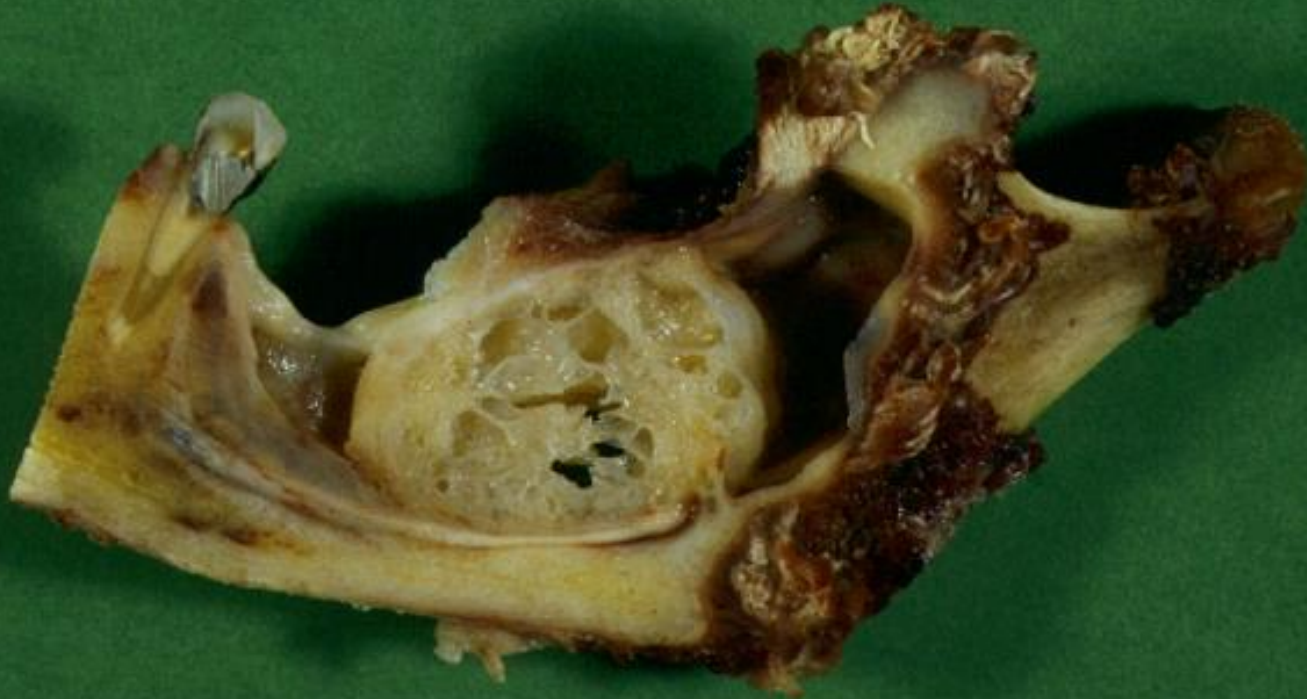
Ameloblastoma

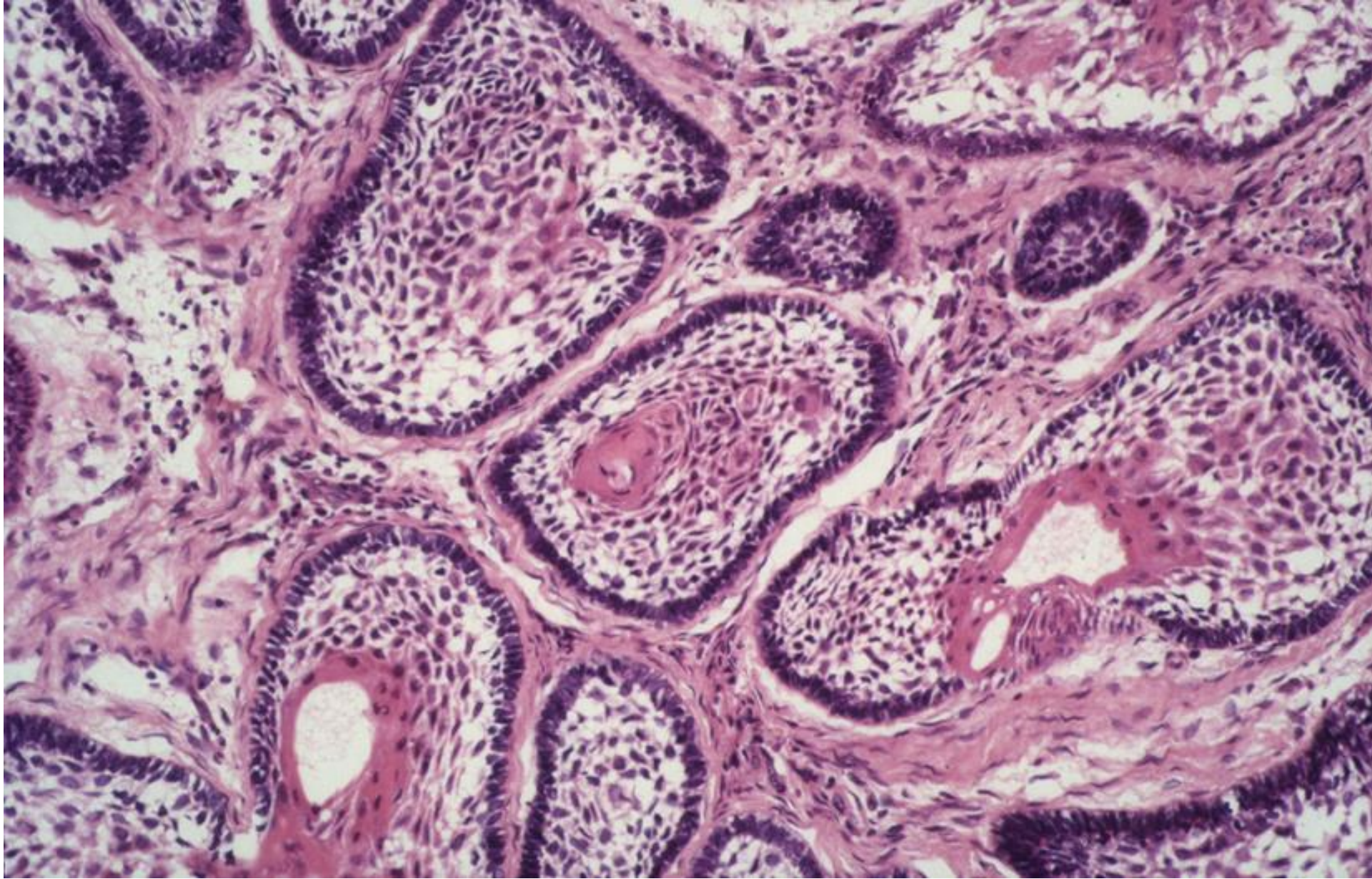




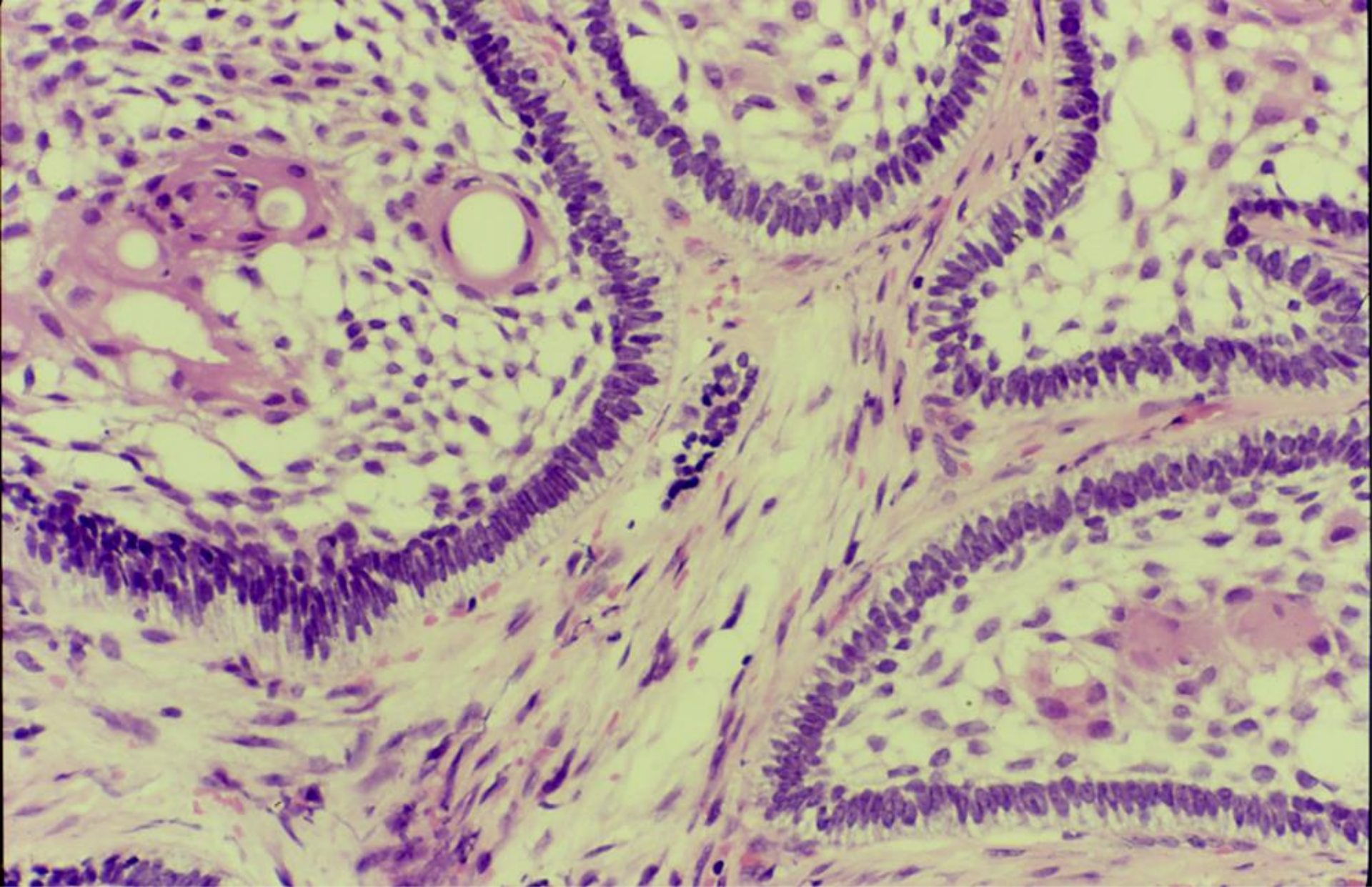


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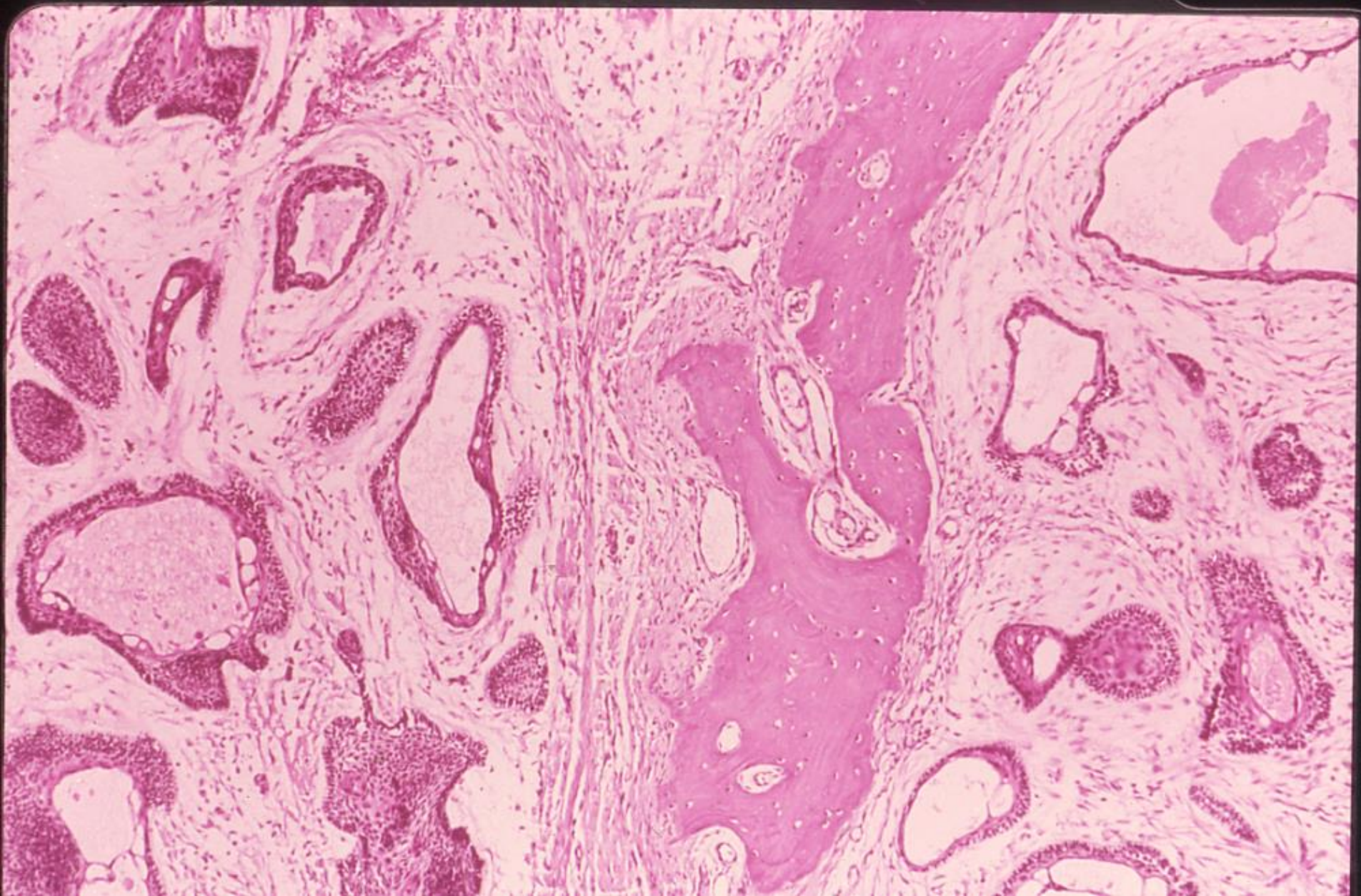


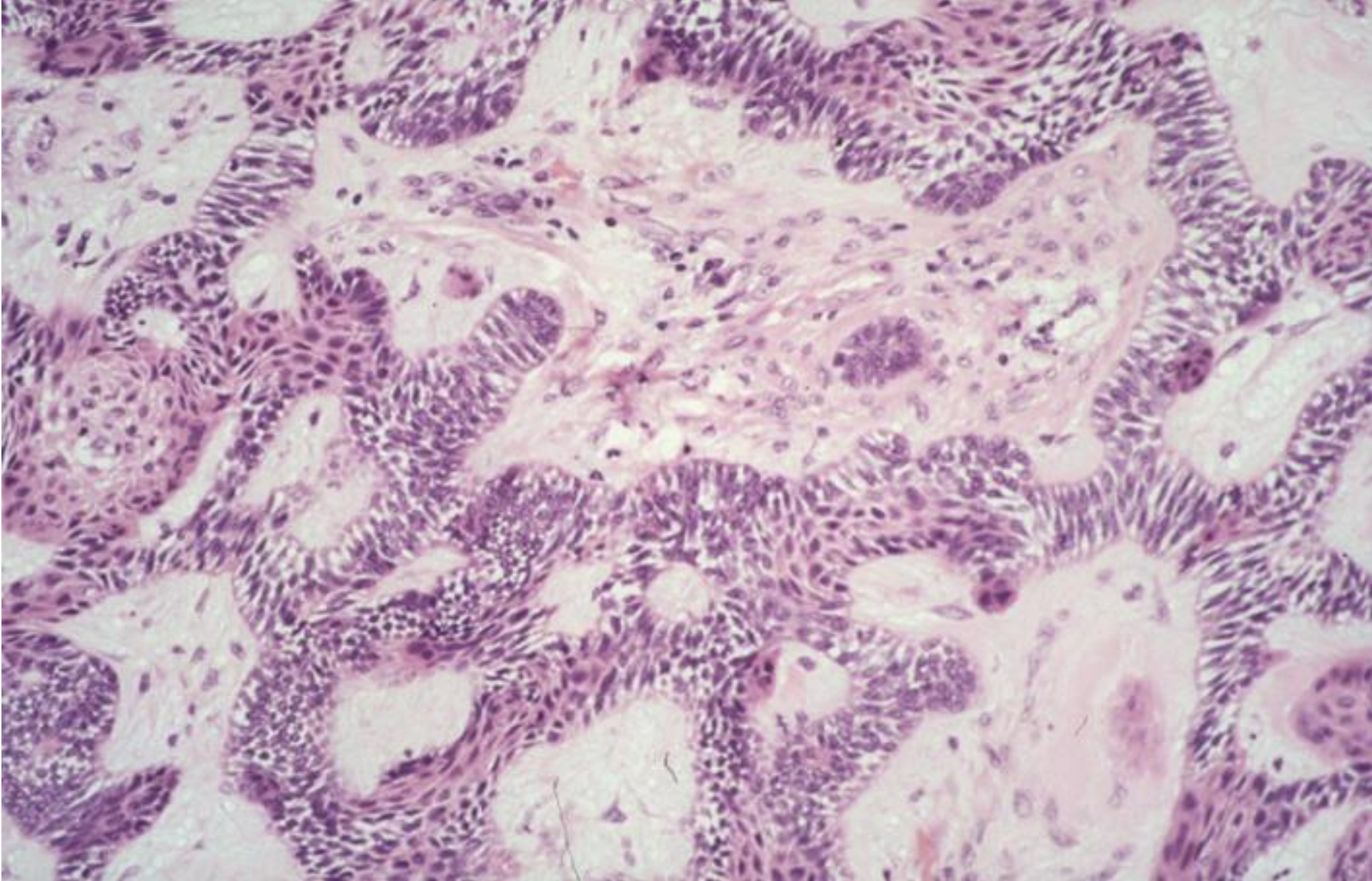


Ameloblastoma - follicular pattern



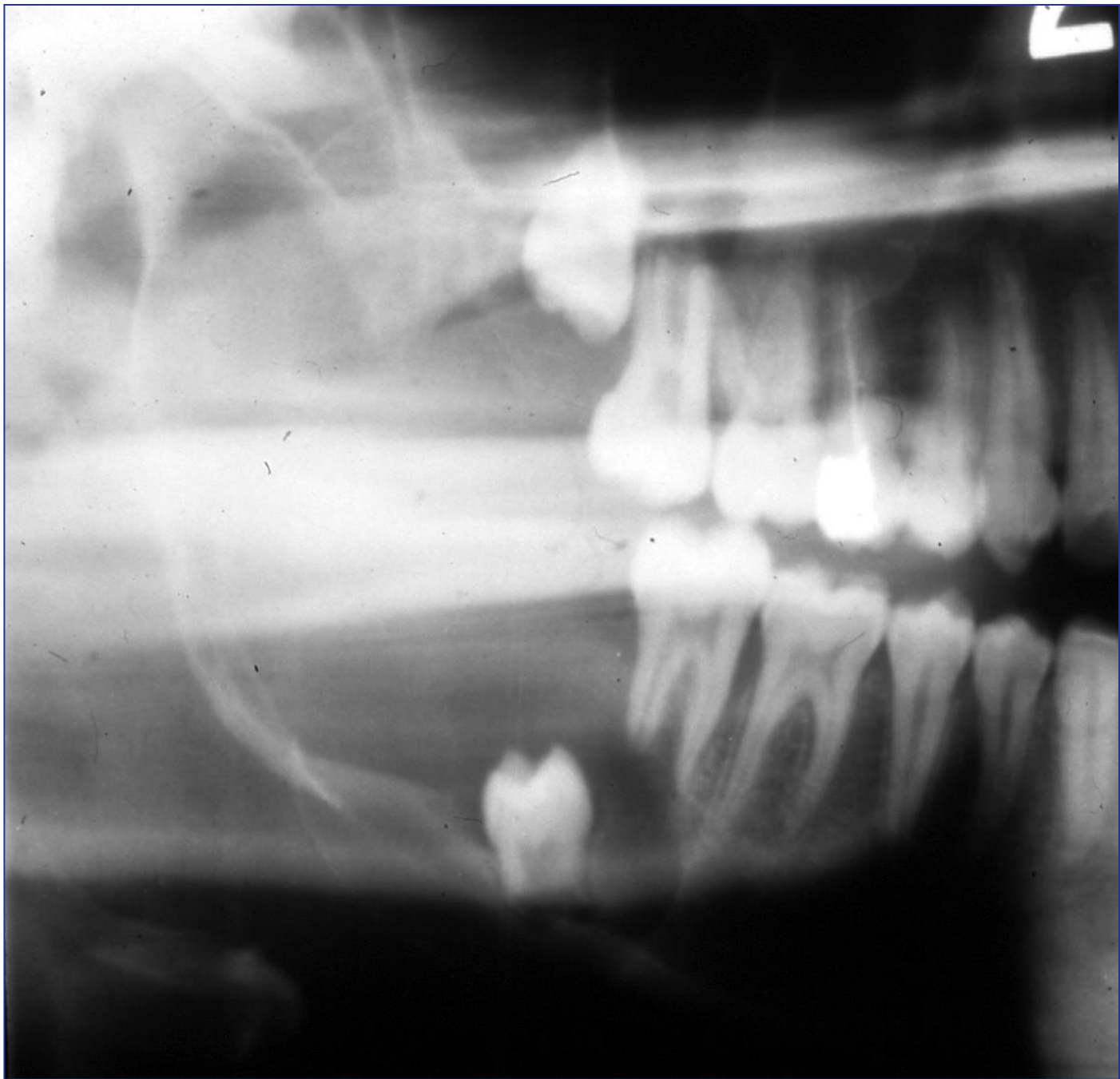
Ameloblastoma - follicular pattern



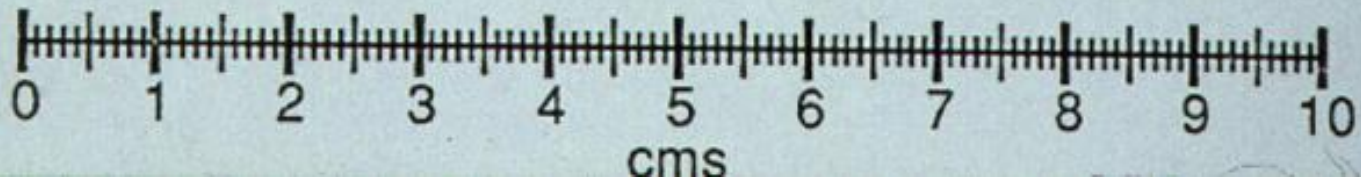
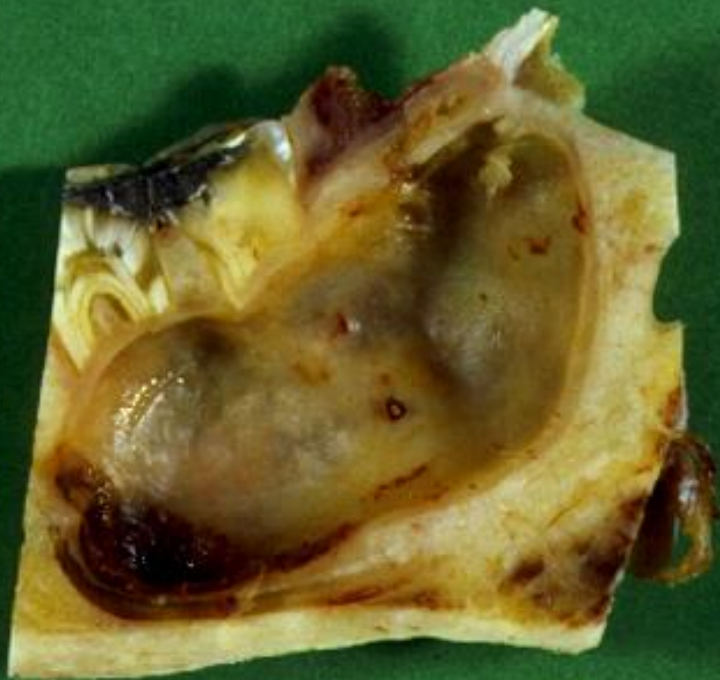


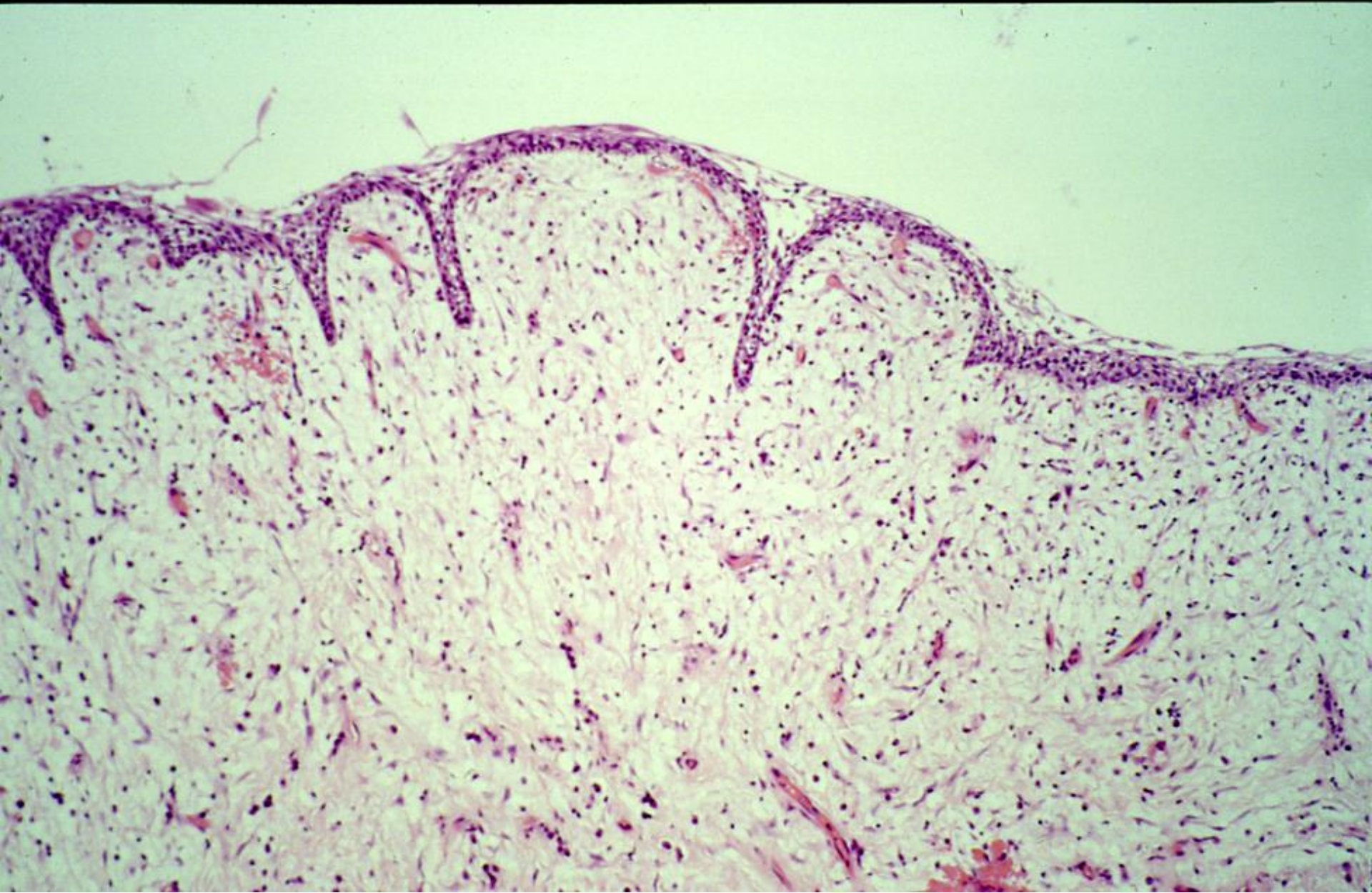
Ameloblastoma - plexiform pattern

Unicystic ameloblastoma

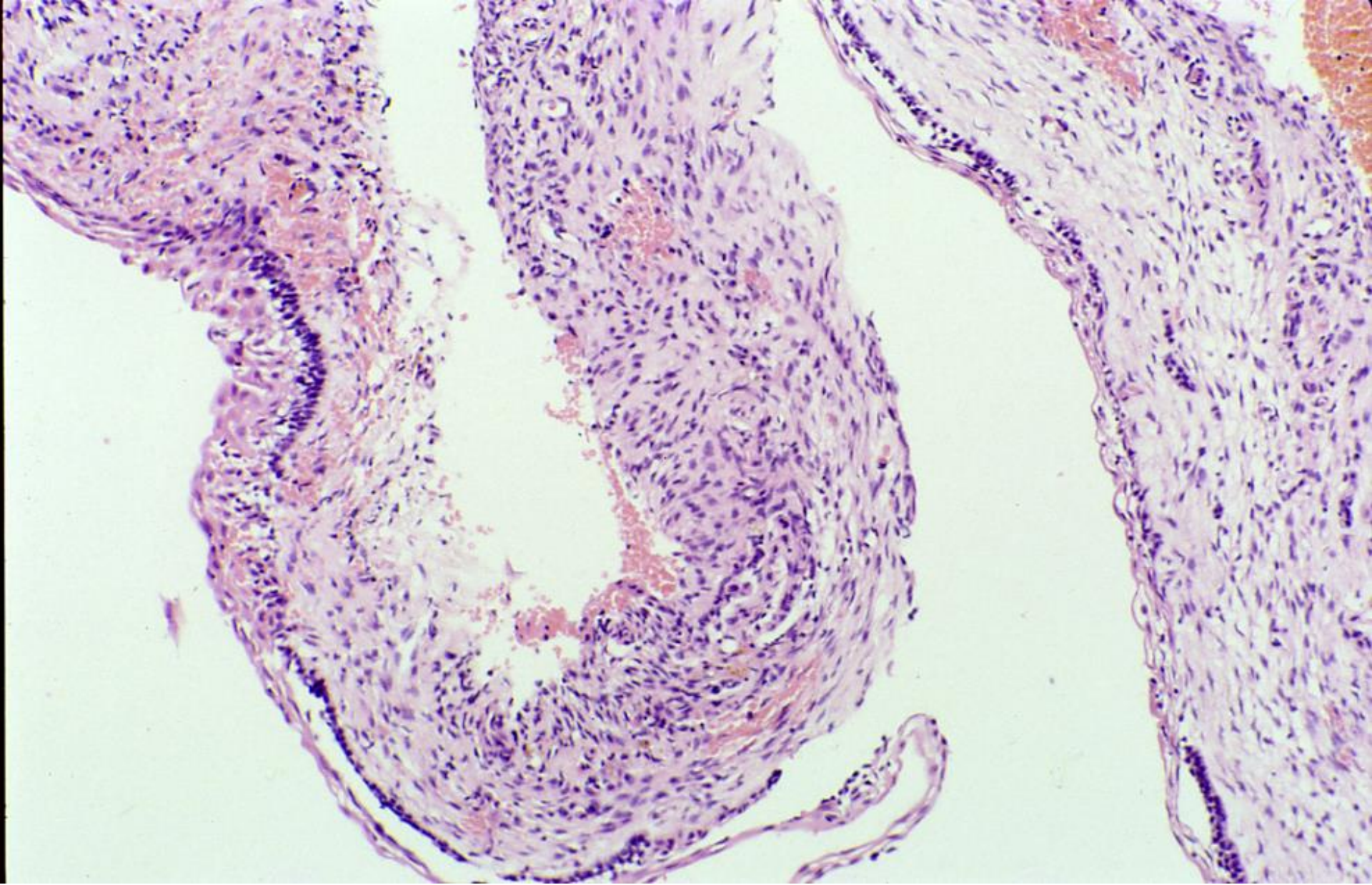


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Unicystic ameloblastoma



Unicystic ameloblastoma



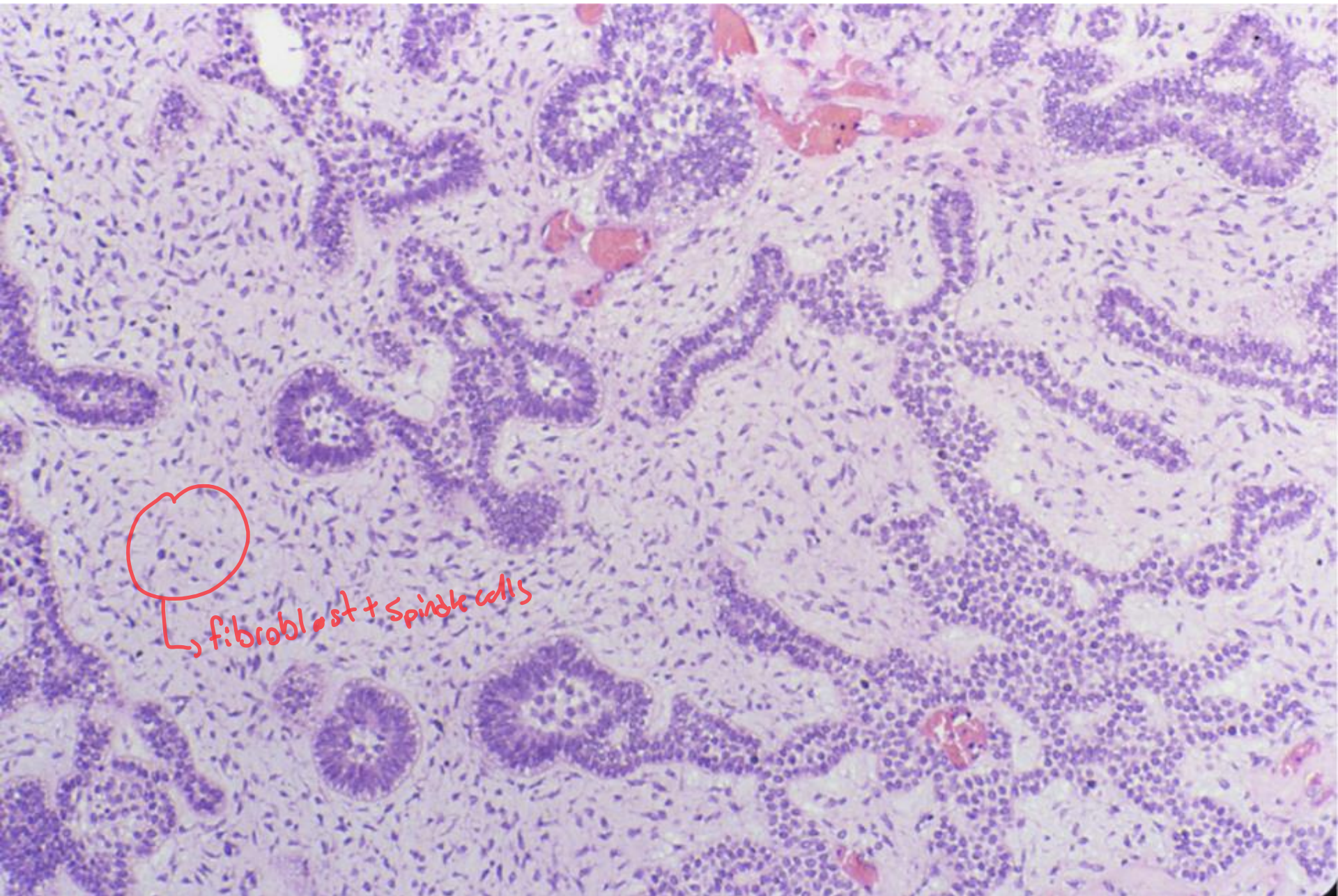
Unicystic ameloblastoma

Differential diagnosis

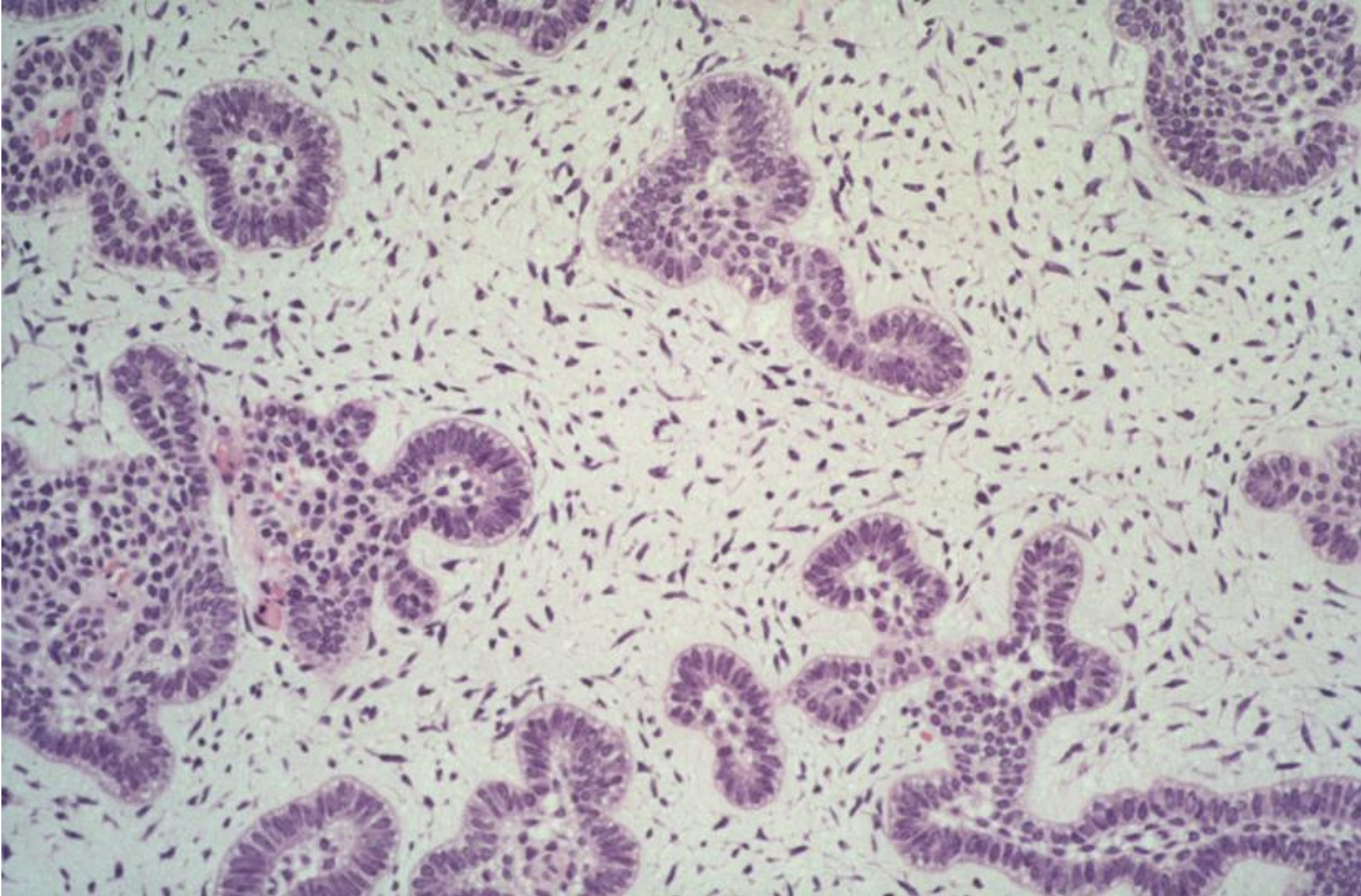
- Dentigerous cyst
- Squamous odontogenic tumour
- Ameloblastic carcinoma

Ameloblastic fibroma





↳ fibroblast + spindle cells



Ameloblastic fibroma

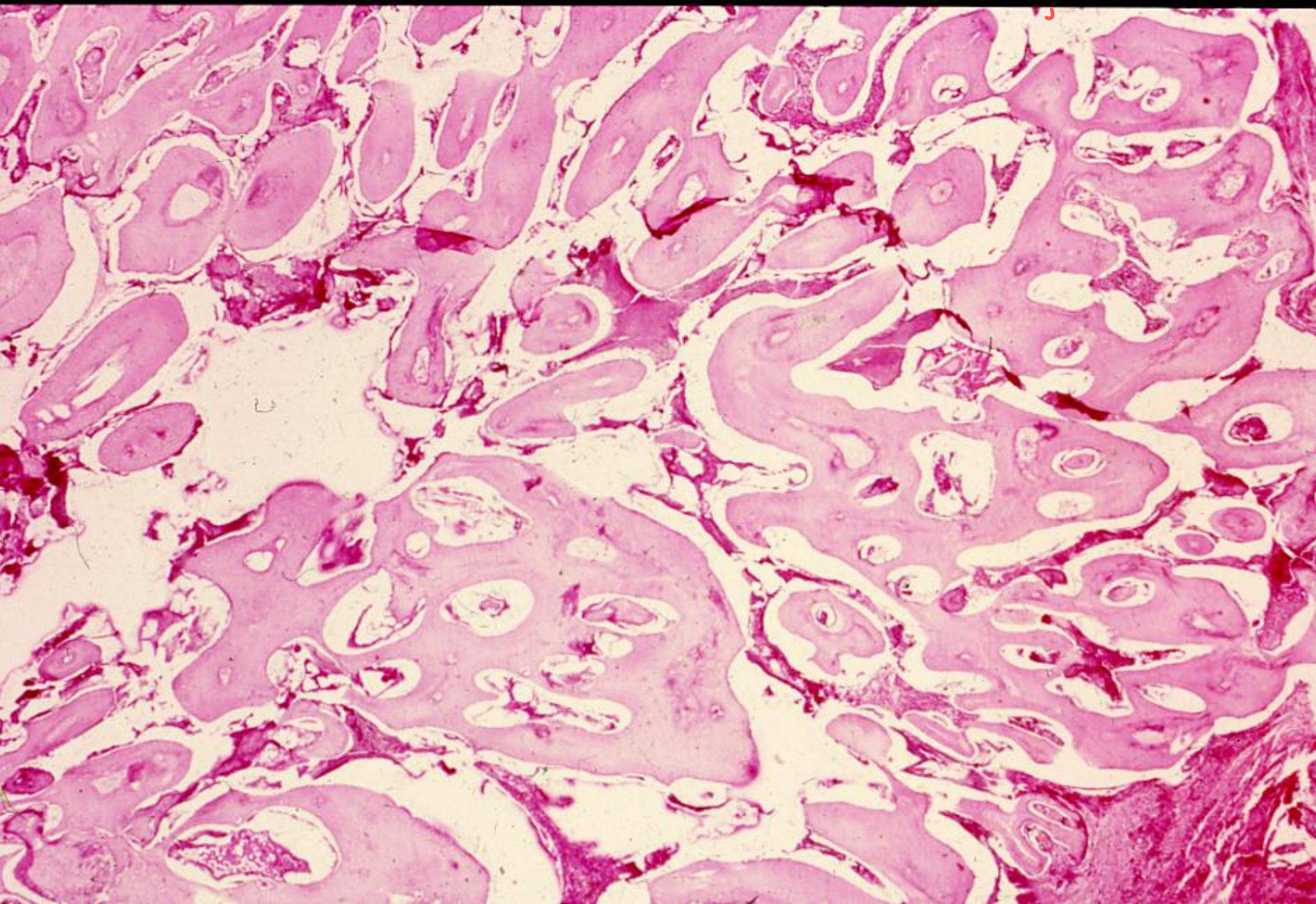
Odontoma



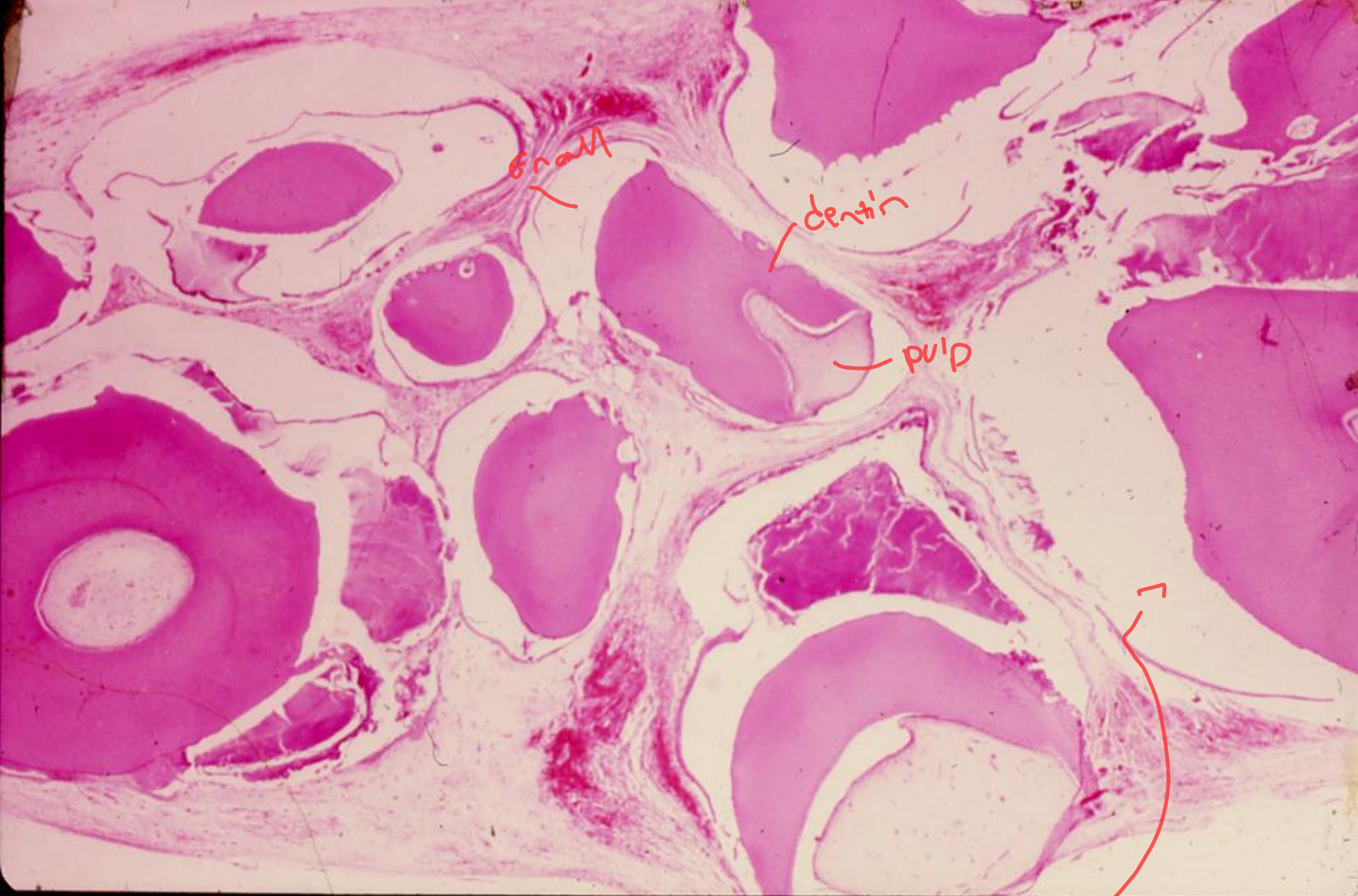


Compound odontome

enamel
D



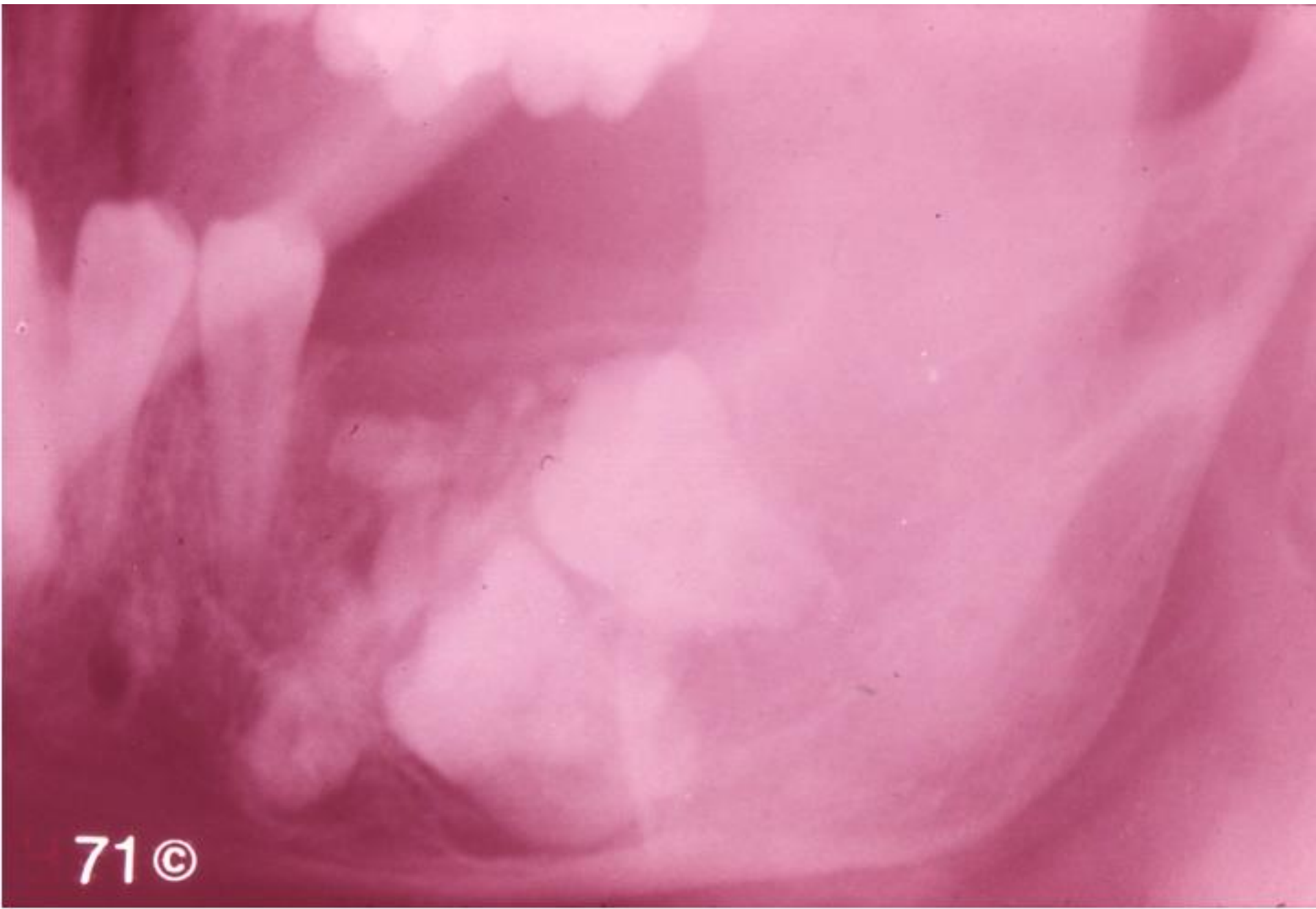
Complex odontome



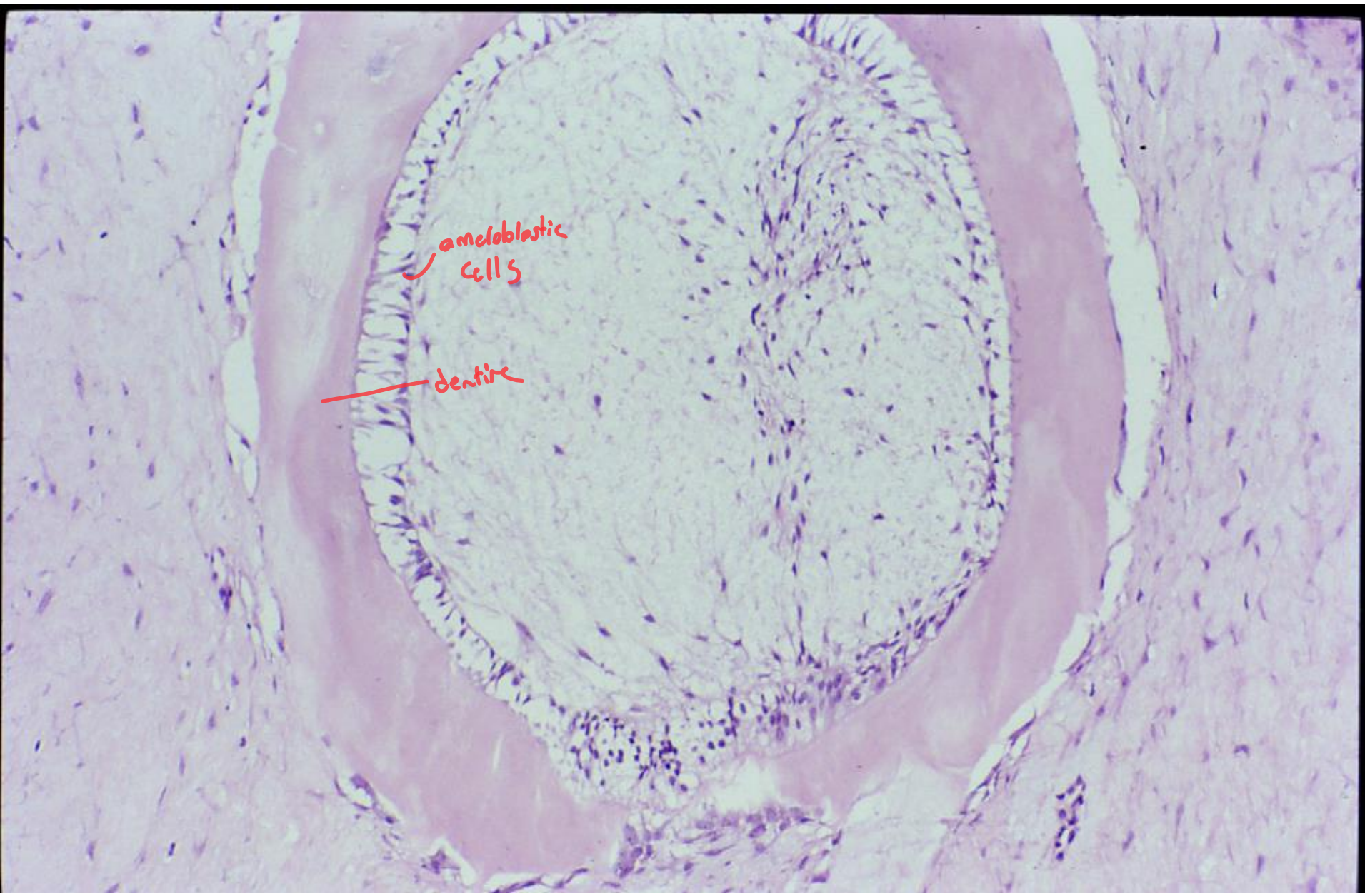
Compound odontome

ENAMEL

Ameloblastic fibro odontome and ameloblastic fibrodentinoma



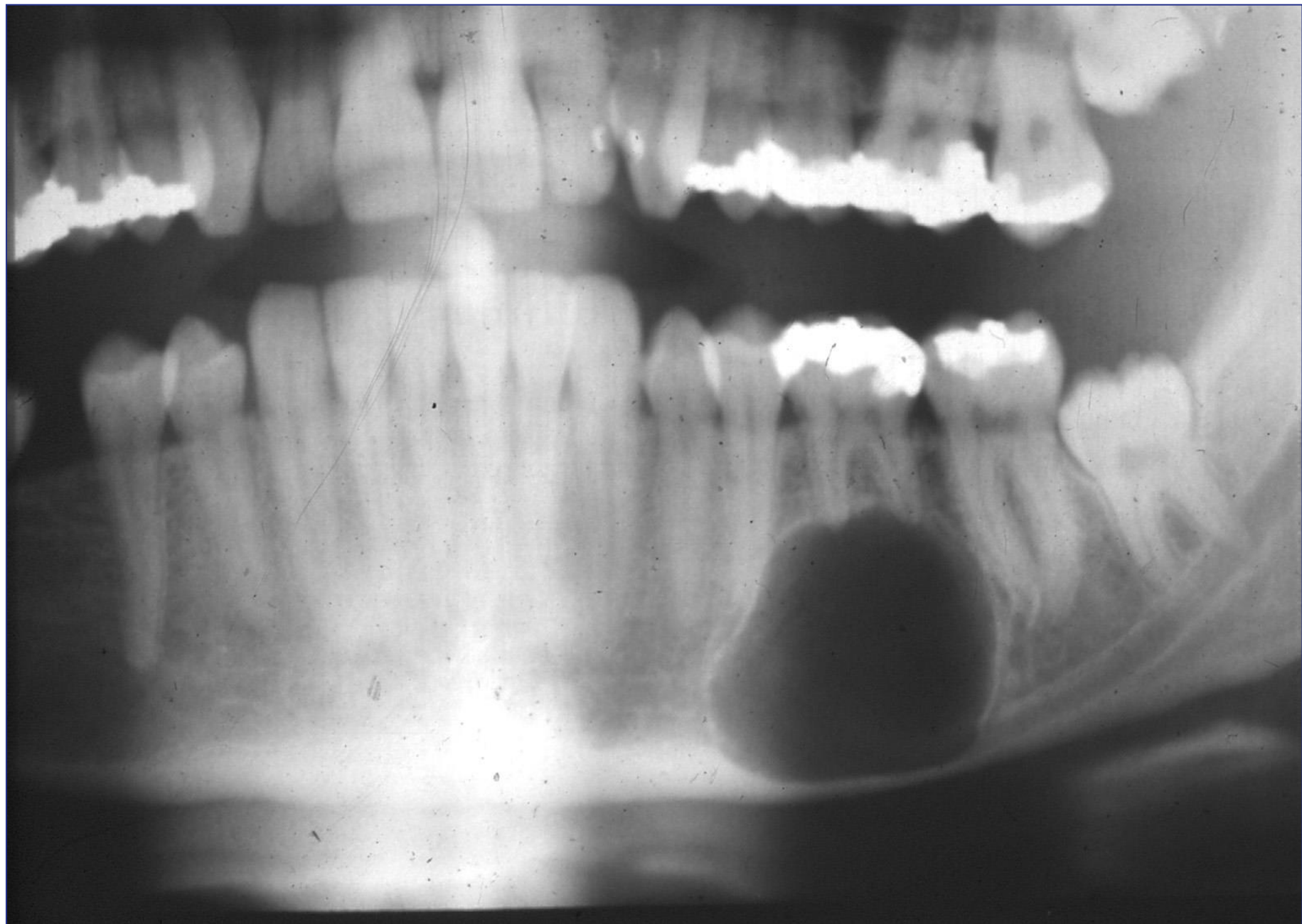
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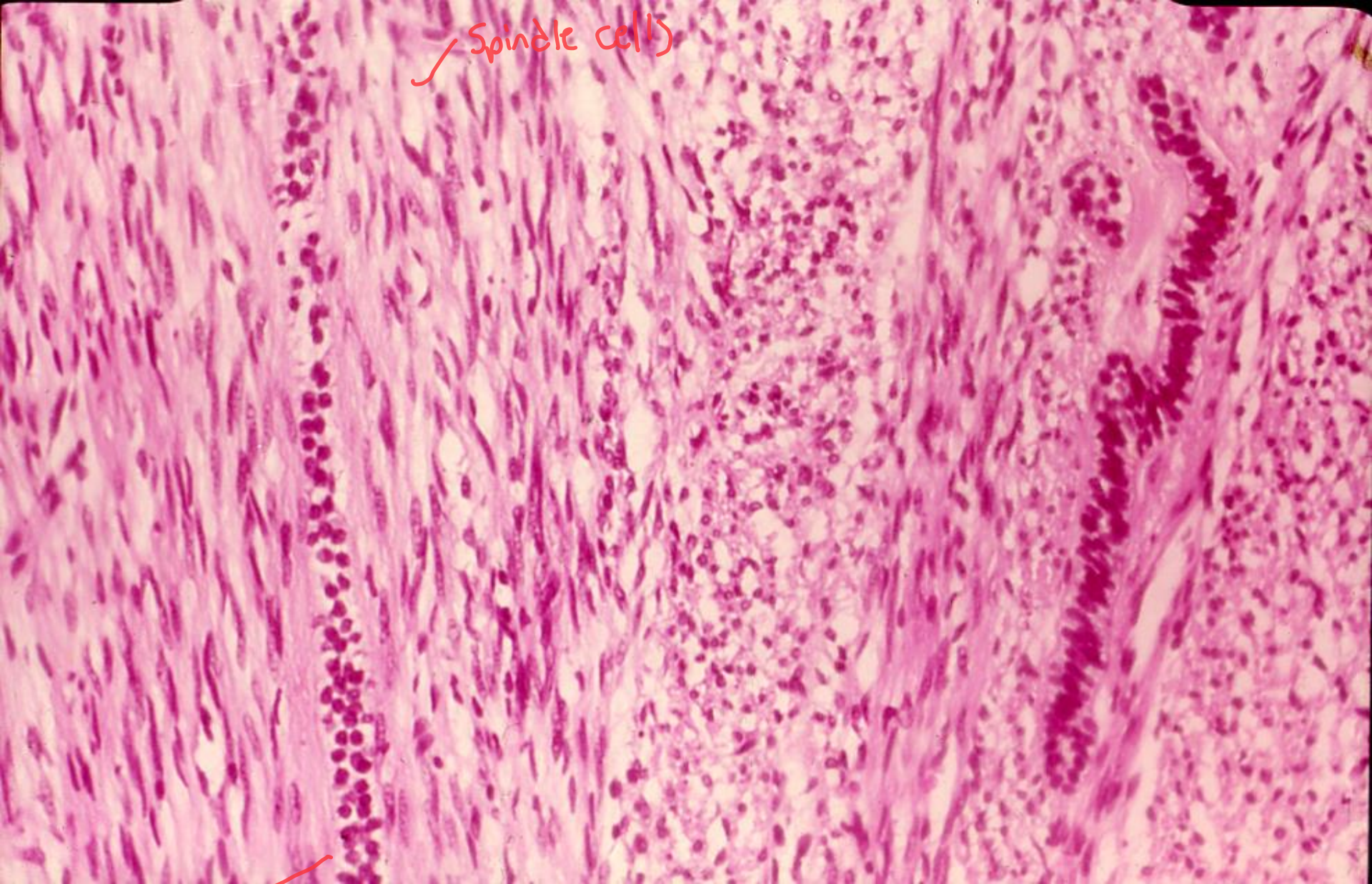


ameloblastic
cells

dentine

Odontogenic fibroma



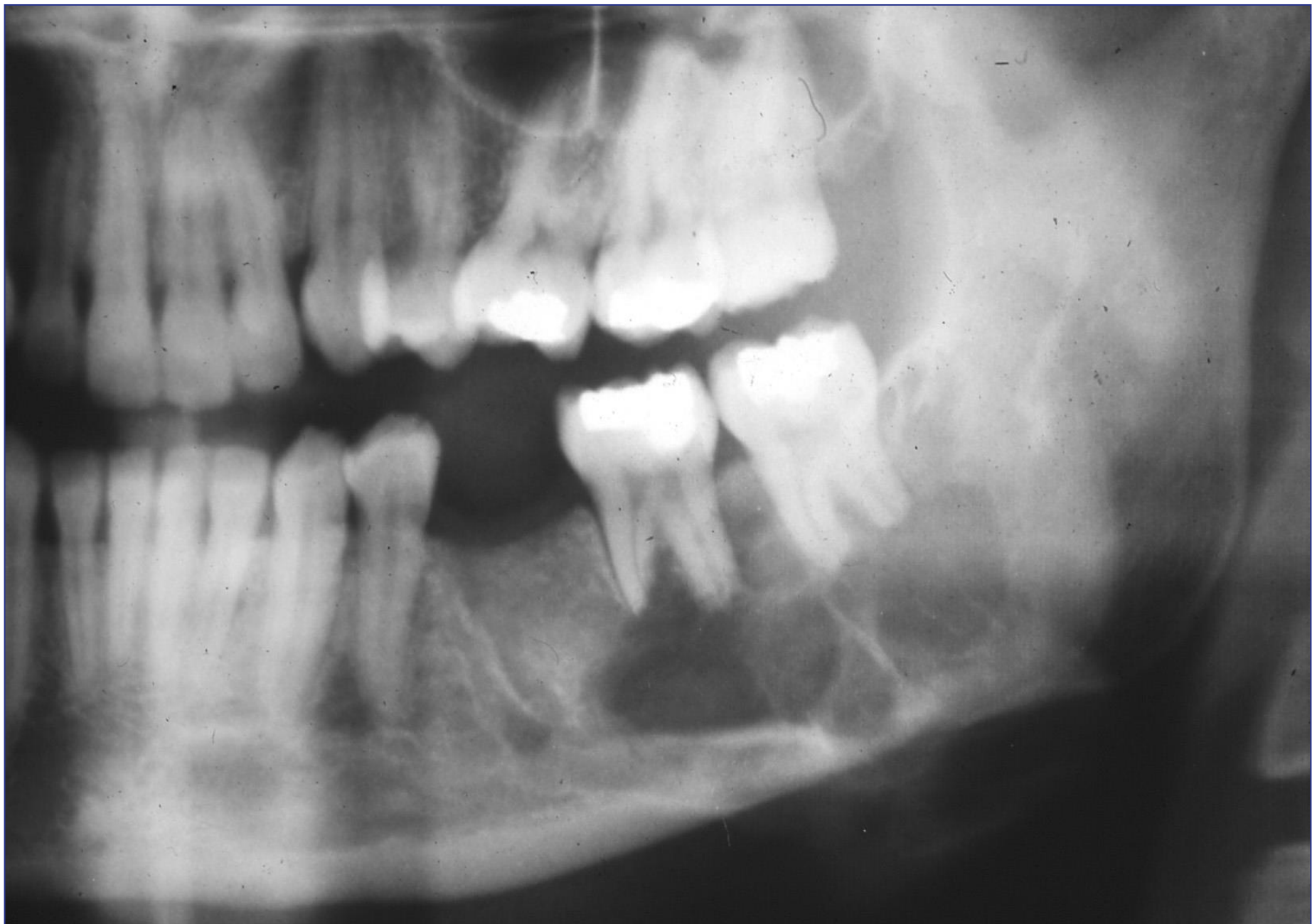


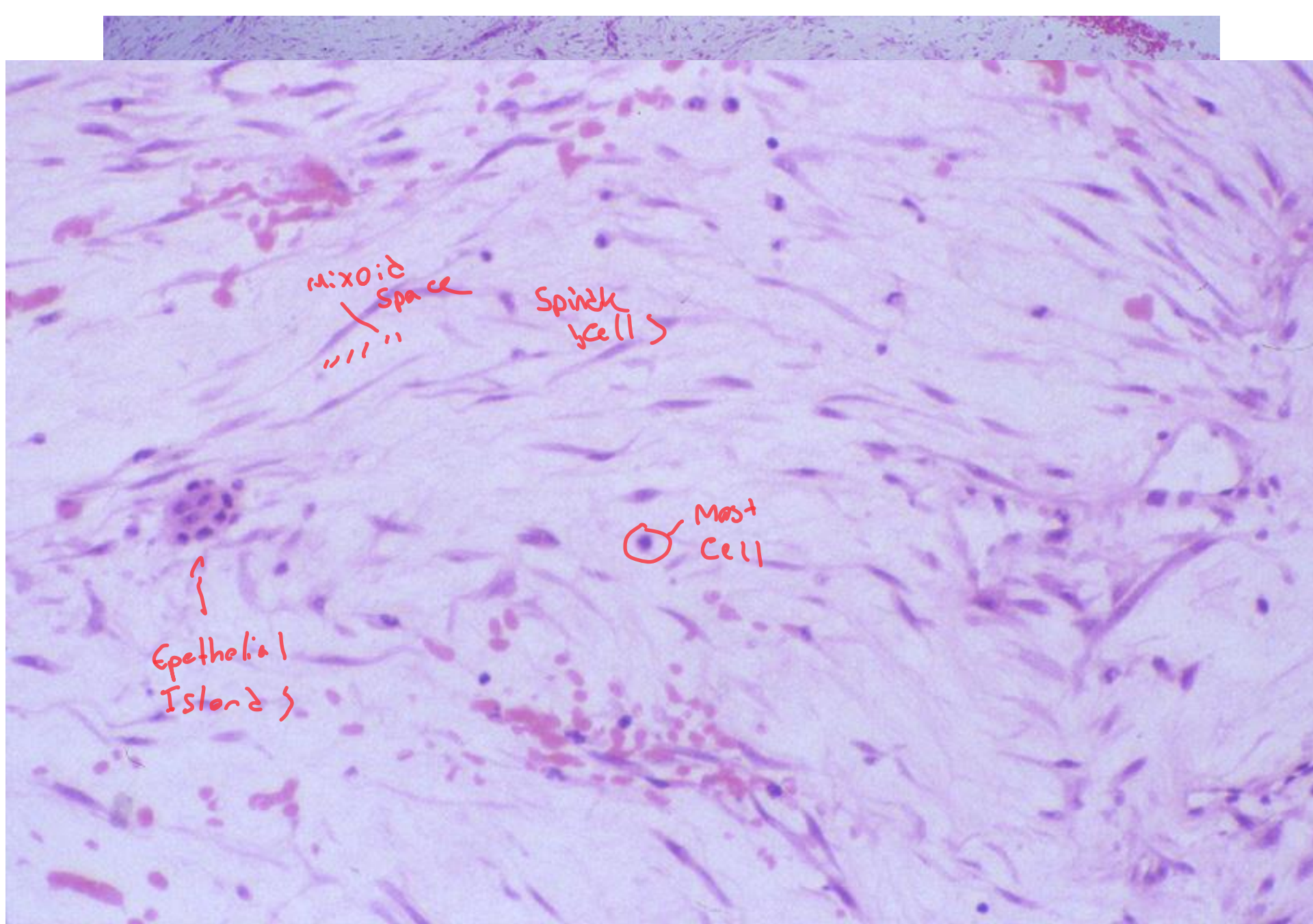
Spindle cells

Islands of odontogenic epithelium

Odontogenic fibroma

Odontogenic myxoma





mucoid
space

Spindle
cell

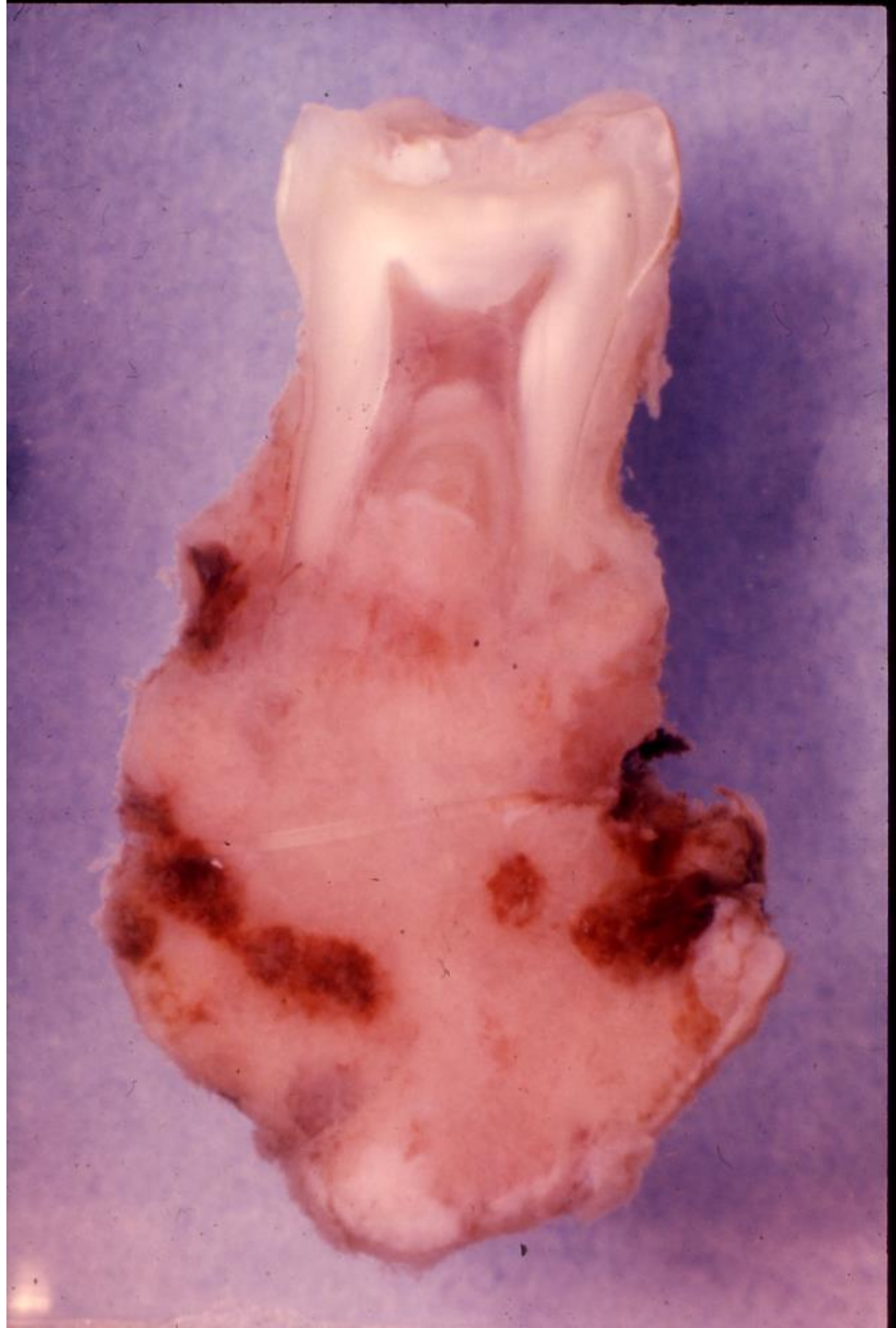
Mast
Cell

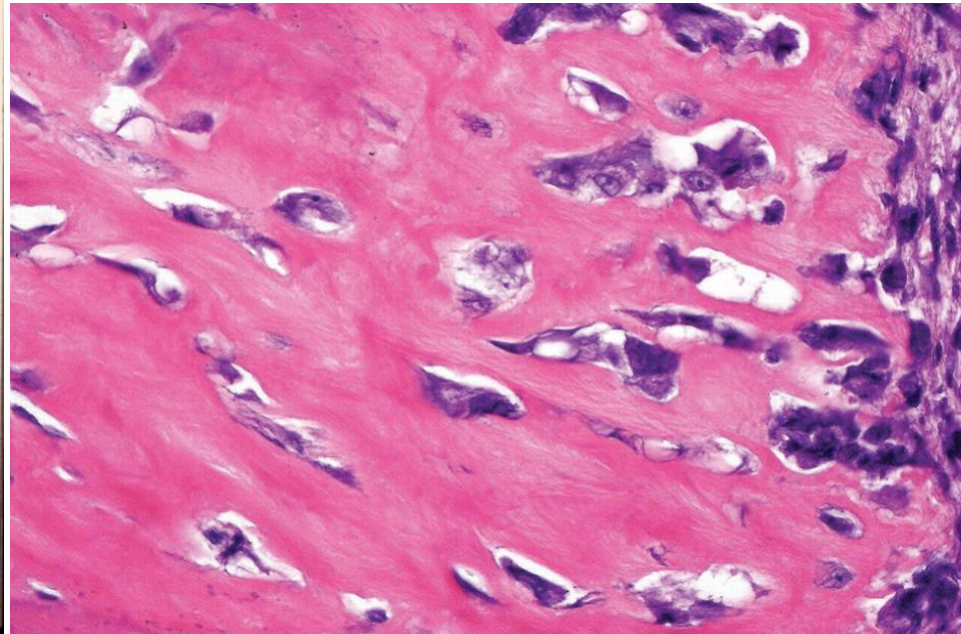
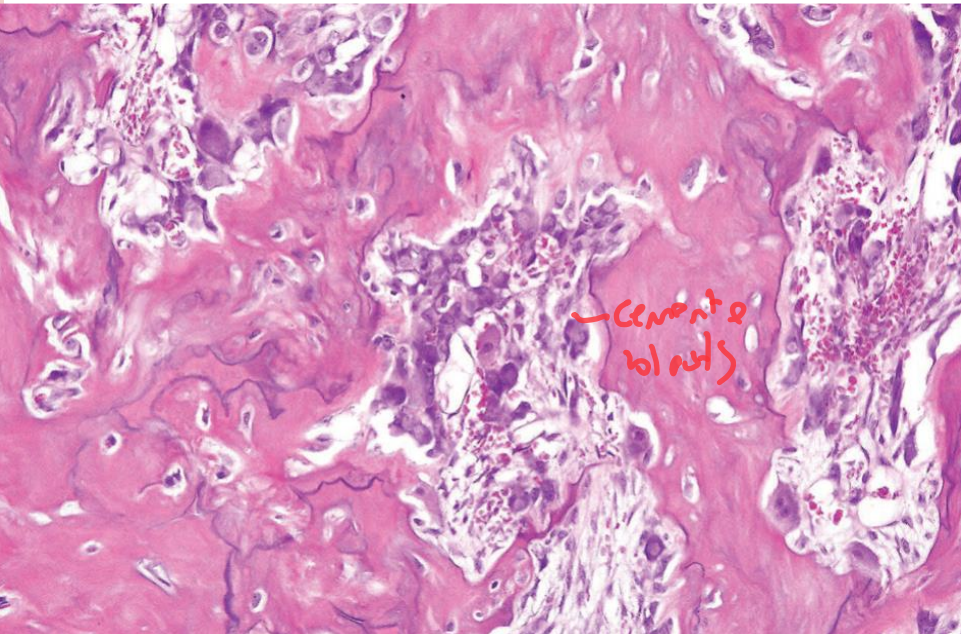
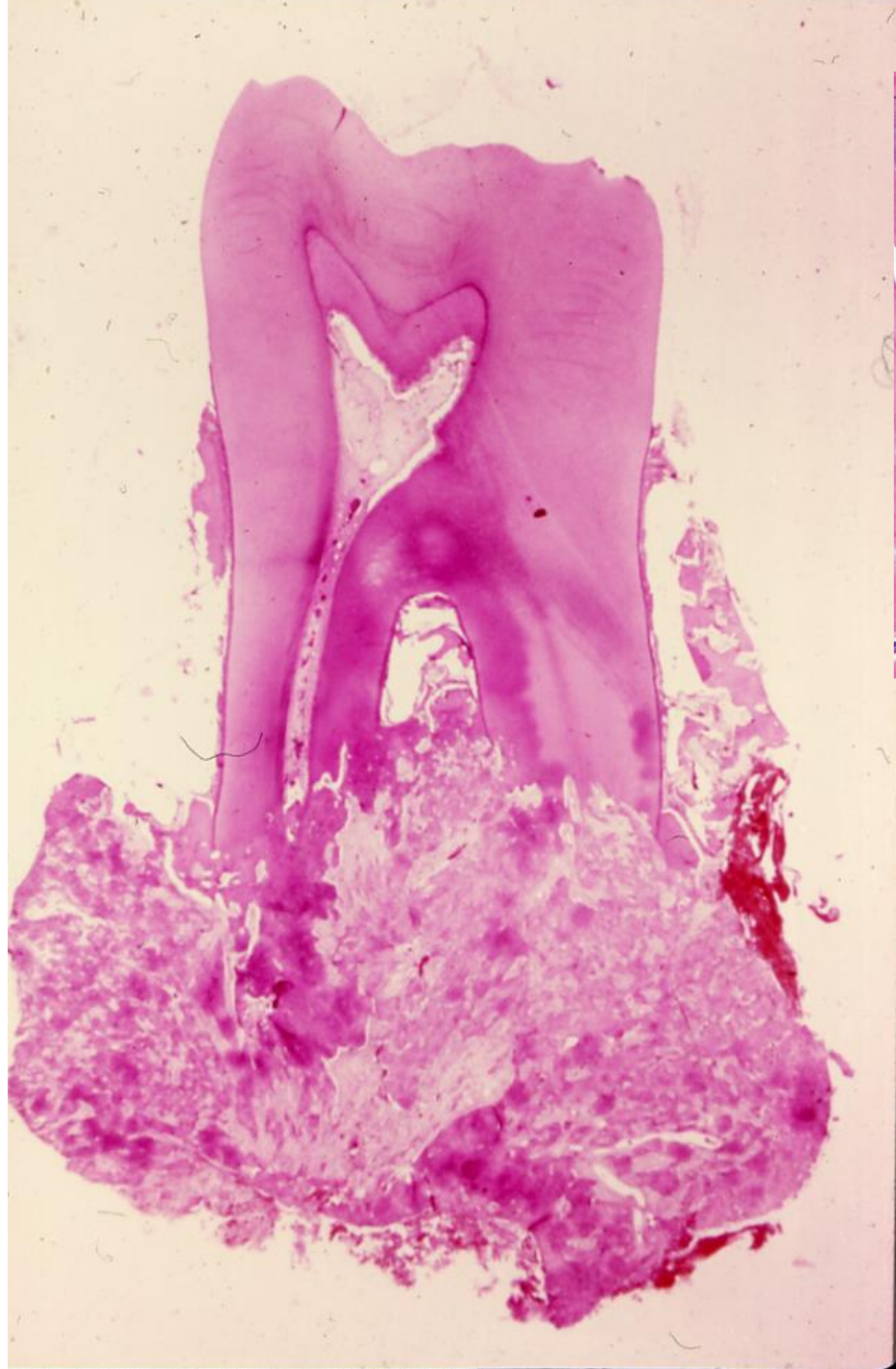
Epithelial
Island

Cementoblastoma



K20





CASE REPORT | VOLUME 65, ISSUE 10, P2080-2082, OCTOBER 2007

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An Unusual Recurrent Cementoblastoma Associated With a Developing Lower Second Molar Tooth: A Case Report

Halla Zaitoun, BDS, MFDS • Omar Kujan, DDS, MSc • Philip Sloan, BDS, PhD, FDSRCS, FRCPath

DOI: <https://doi.org/10.1016/j.joms.2006.06.288>

References

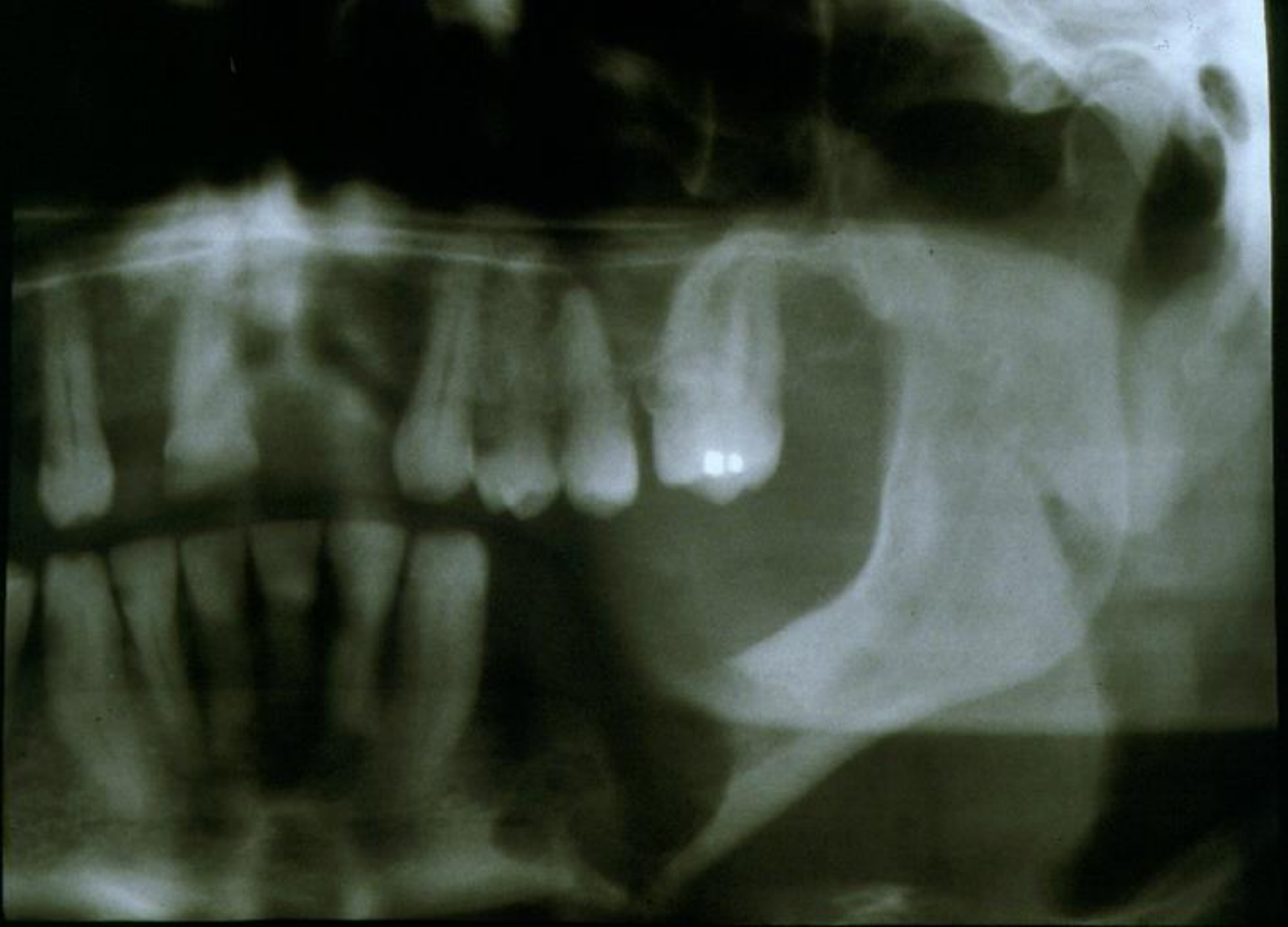
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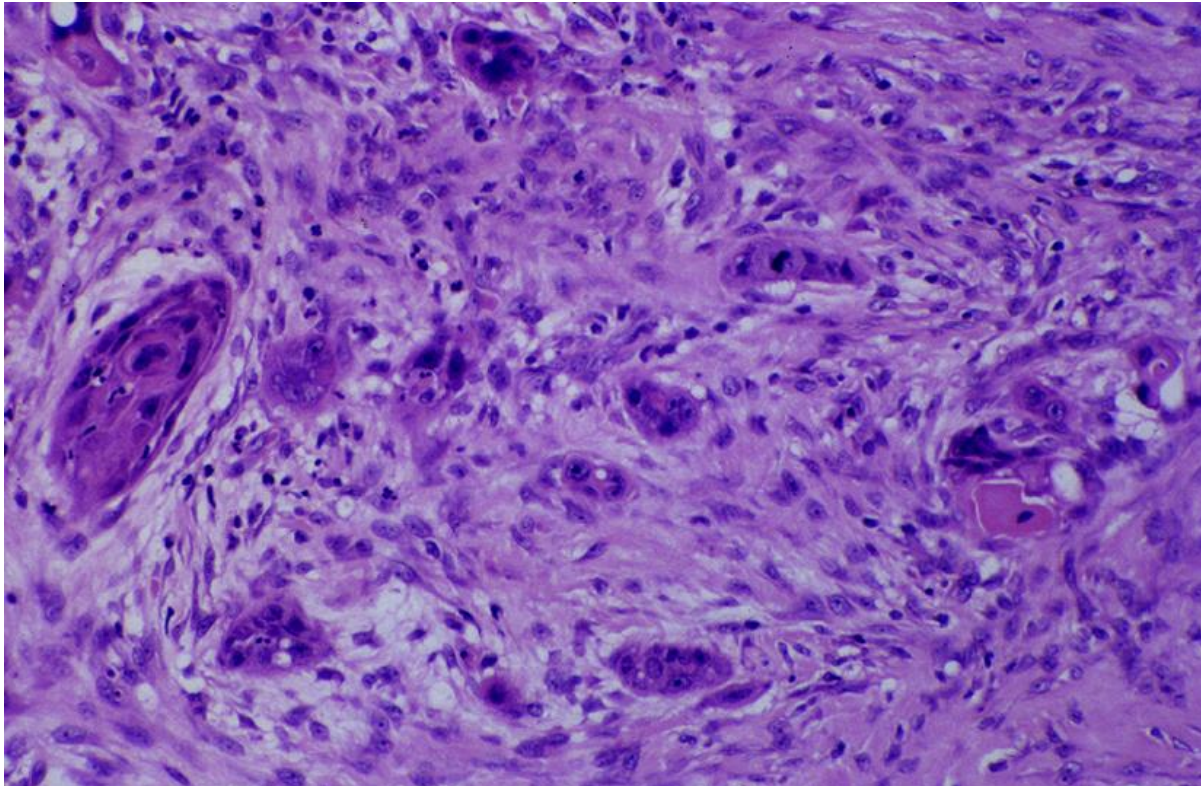
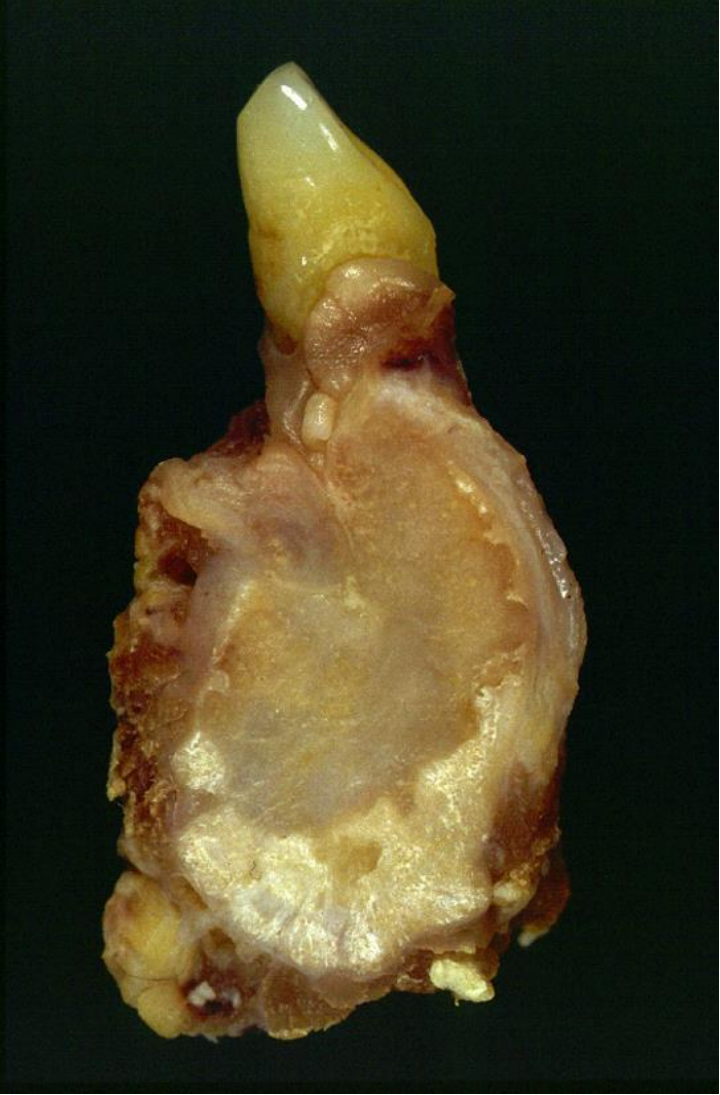
Cementoblastoma is a benign ectomesenchymal odontogenic neoplasm that forms a mass of cementum or cementum-like tissue continuous with the tooth root, usually a mandibular premolar or first molar.¹ It has been considered analogous to osteoblastoma and can be very destructive of tissue.² This lesion clinically presents as a tender, sometimes painful swelling at the buccal and lingual/palatal aspect of the alveolus.¹ It generally affects persons under age 30 years and has a higher prevalence in males (1.2:1). Radiographically, it appears as a radiopaque mass with a thin radiolucent rim attached to the roots of a tooth. The mass may be rounded or irregular in shape and mottled in texture.³ Several cases of tooth resorption, loss of root outline, and obliteration of the periodontal ligament space have been reported.¹ Histologically, the lesion is composed predominantly of sheets or trabeculae of cementum-like calcified tissue with variably prominent reversal lines, sometimes with a pagetoid appearance.¹ Cells including cementoblasts and cementoclasts are enclosed within the hard

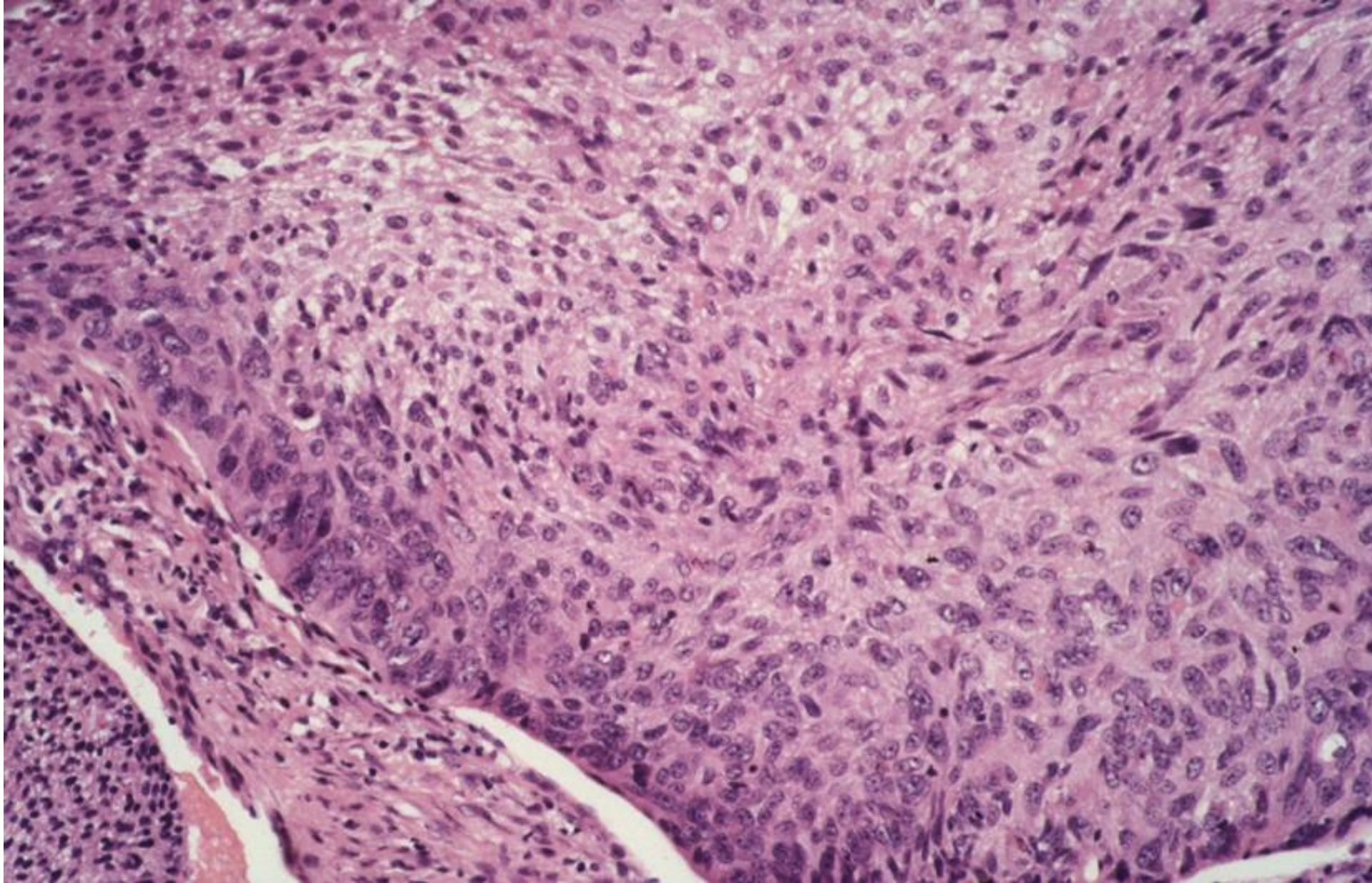
Malignant odontogenic tumours (carcinomas)



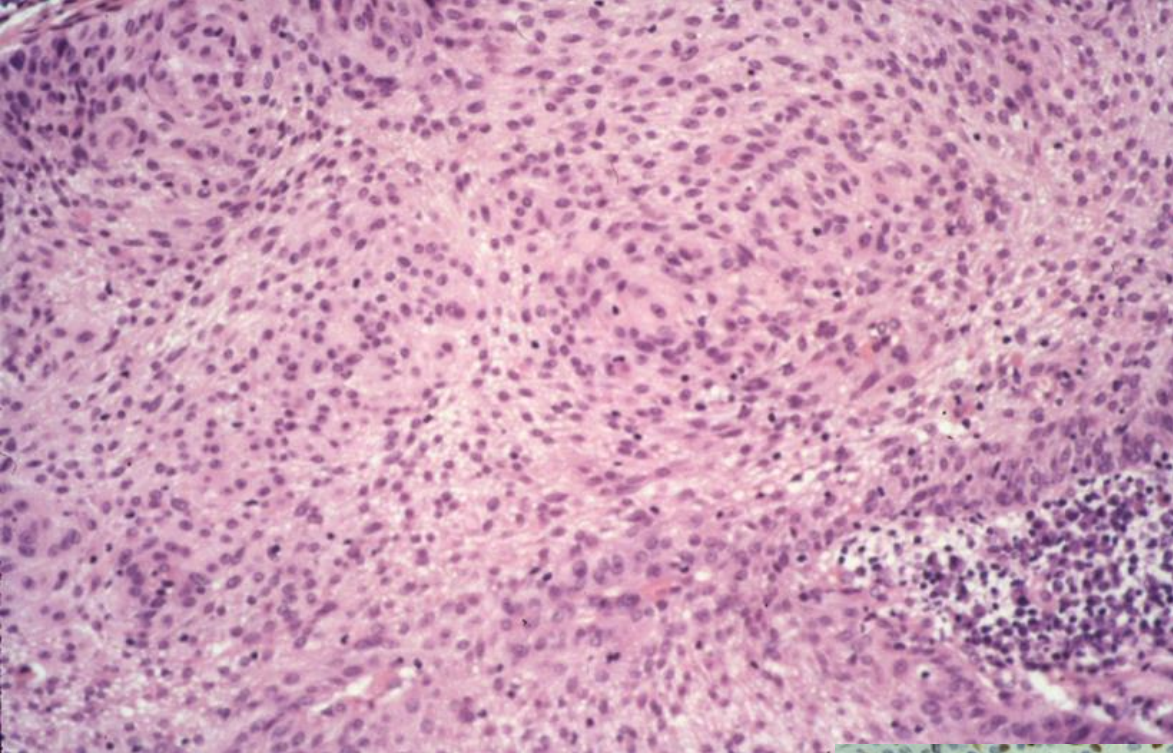
Odontogenic carcinoma - pathol. fracture





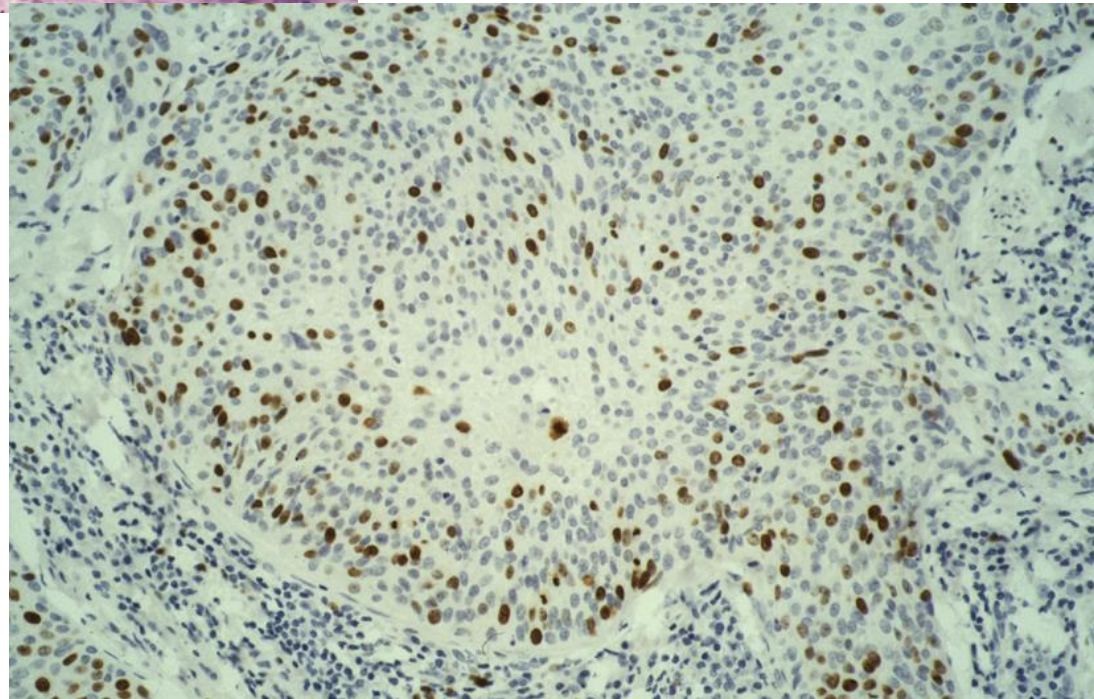


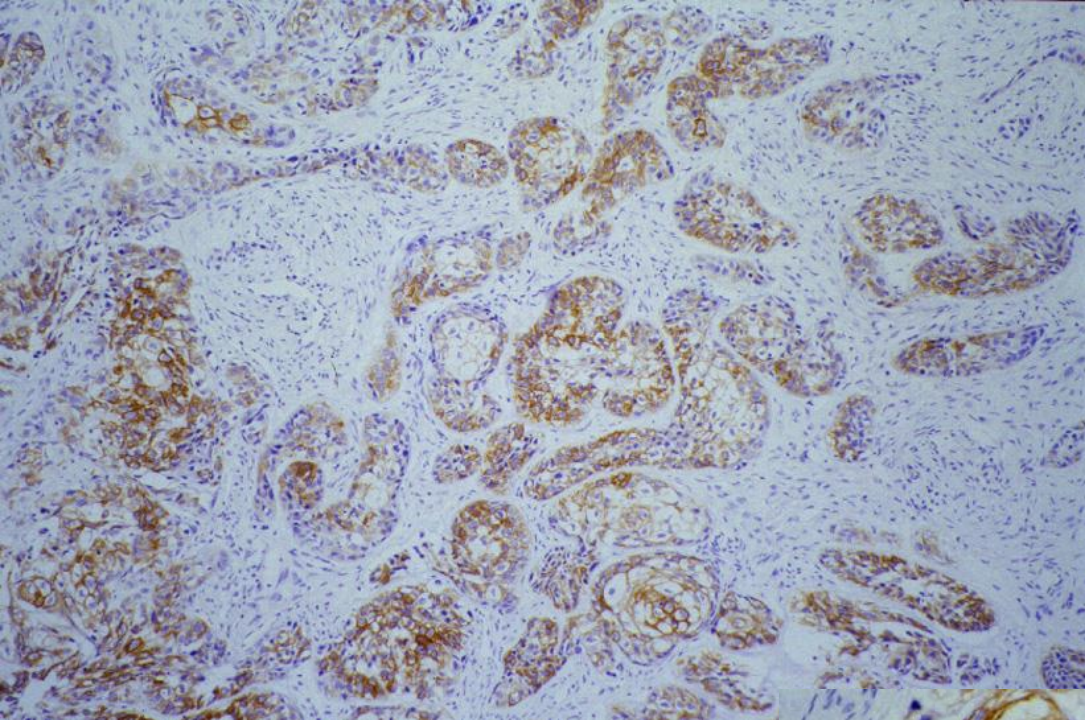
Ameloblastic carcinoma



Ameloblastic carcinoma

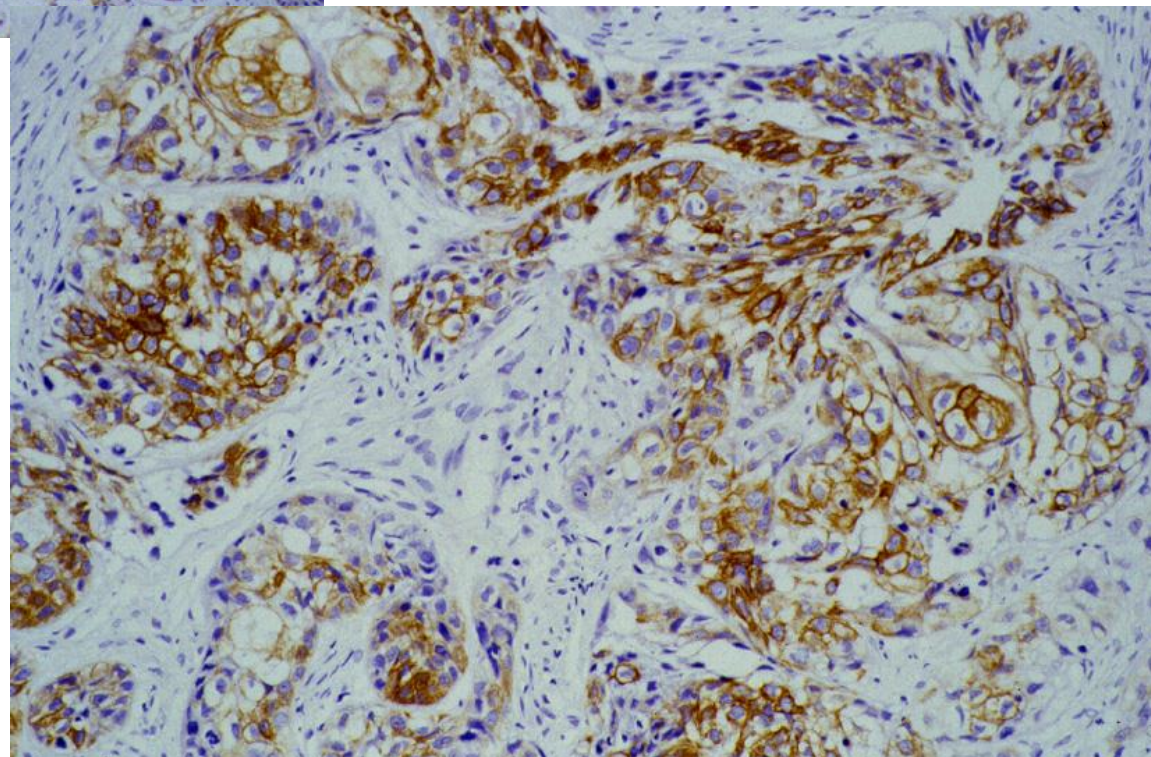
Frequent mitoses





CCOC

Keratin 19, a marker
for odontogenic
epithelium



Questions

