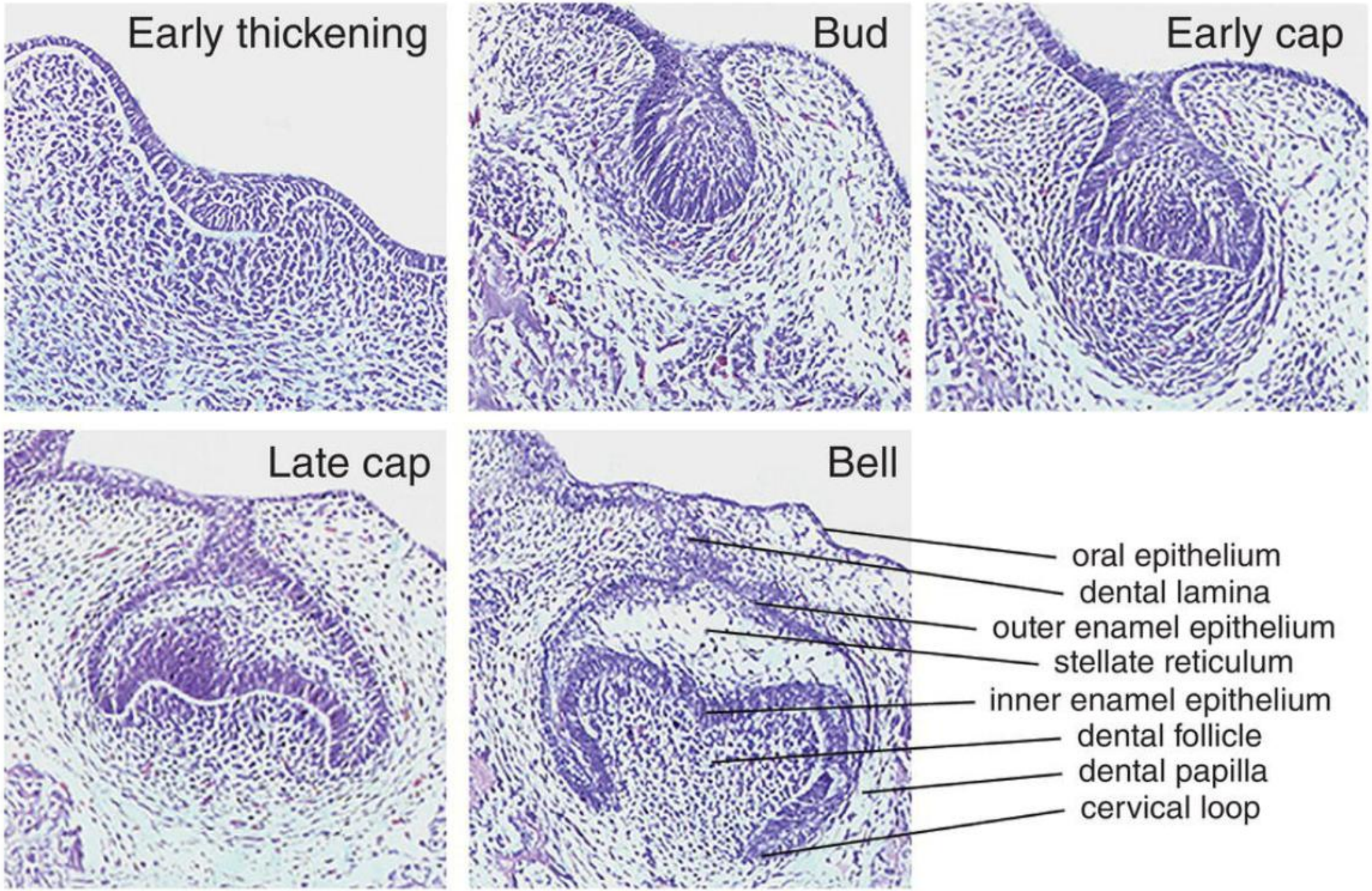
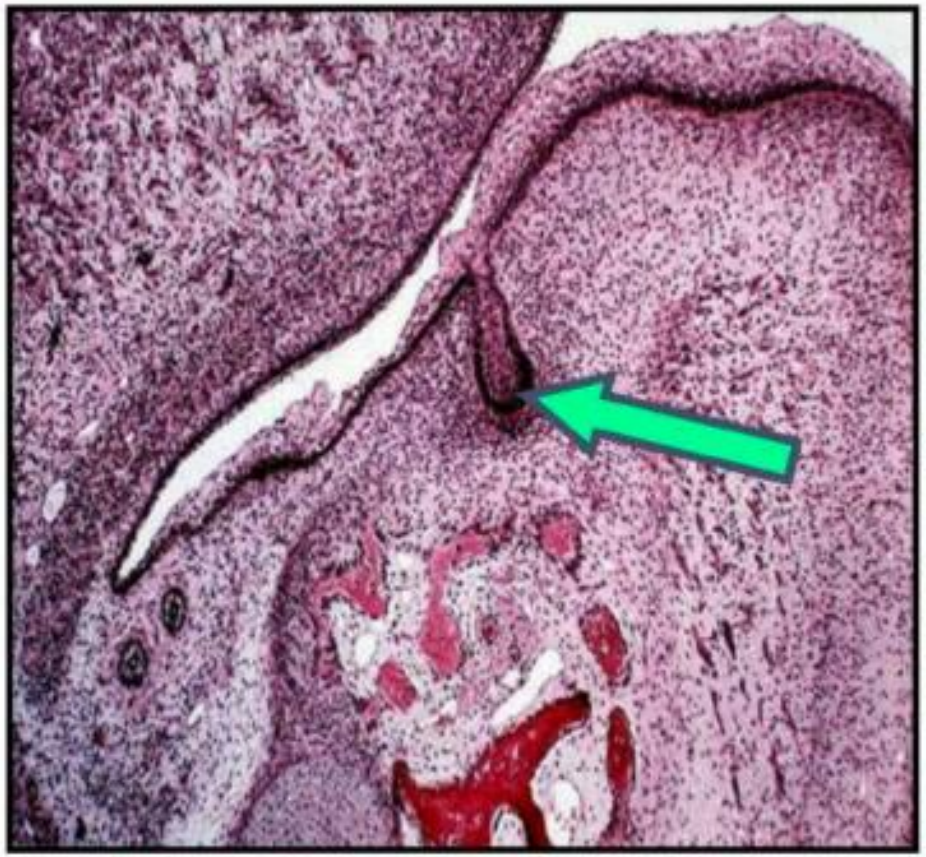
Development of tooth
Slide discussion

DR SAJDA GAJDHAR

SESSION LEARNING OUTCOMES

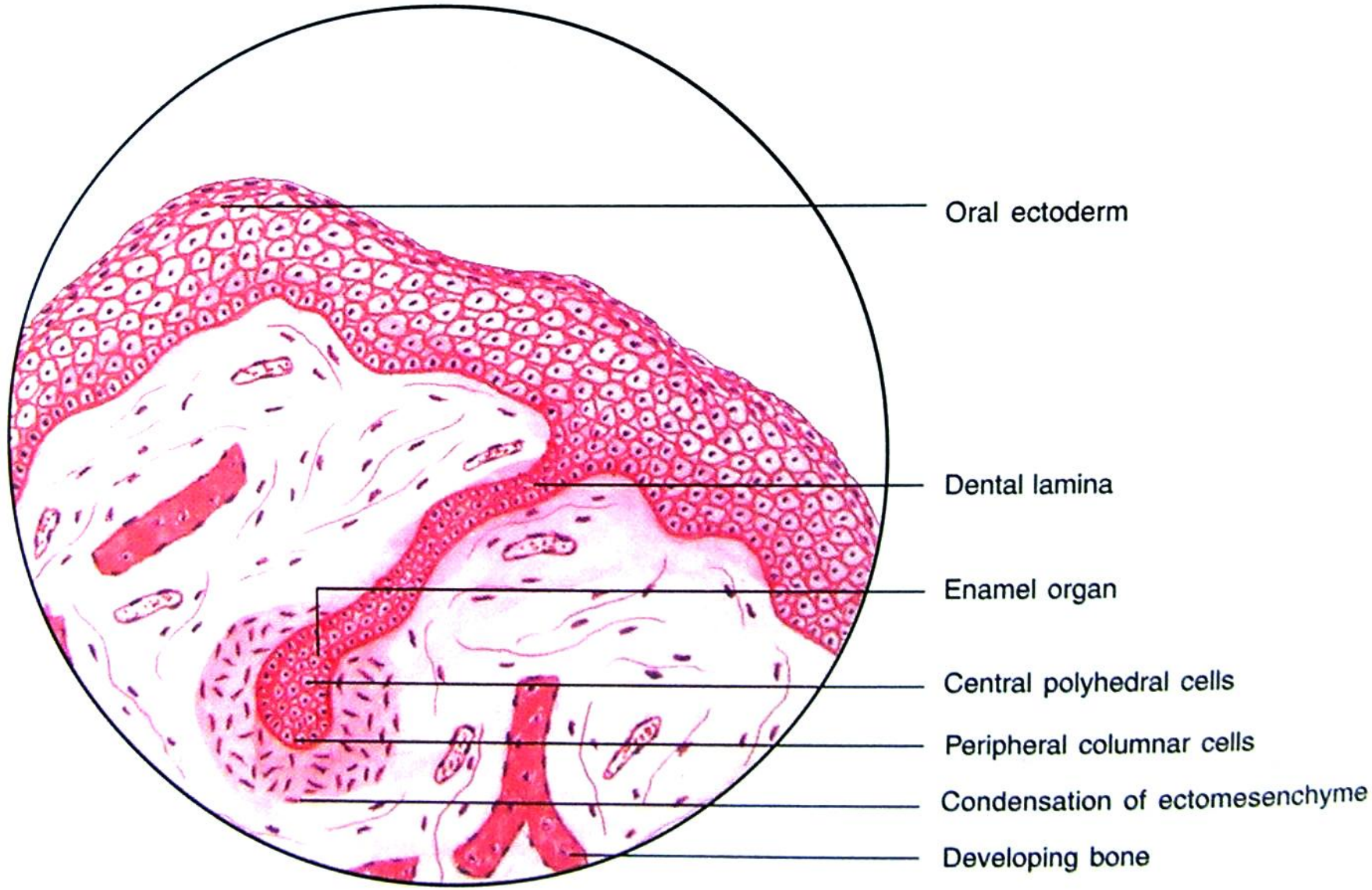
19: Tooth development-I		
CLO	**SLO**	**By the end of this Lab session [redacted] students should be able to:**
1.1, 1.3, 2.1, 2.2	19.1	Illustrate the histologic stages of tooth development including bud stage, cap stage, early bell stage and advanced bell stage
	19.2	Examine the differences present in the structures in bud, cap stage, early bell stage and advanced bell stage under a microscope
Essential reading: - Tencate's Oral histology ; pages 70-94 - James K Avery; pages 63-80		


Early thickening
Bud
Early cap
Late cap
Bell
oral epithelium
dental lamina
outer enamel epithelium
stellate reticulum
inner enamel epithelium
dental follicle
dental papilla
cervical loop

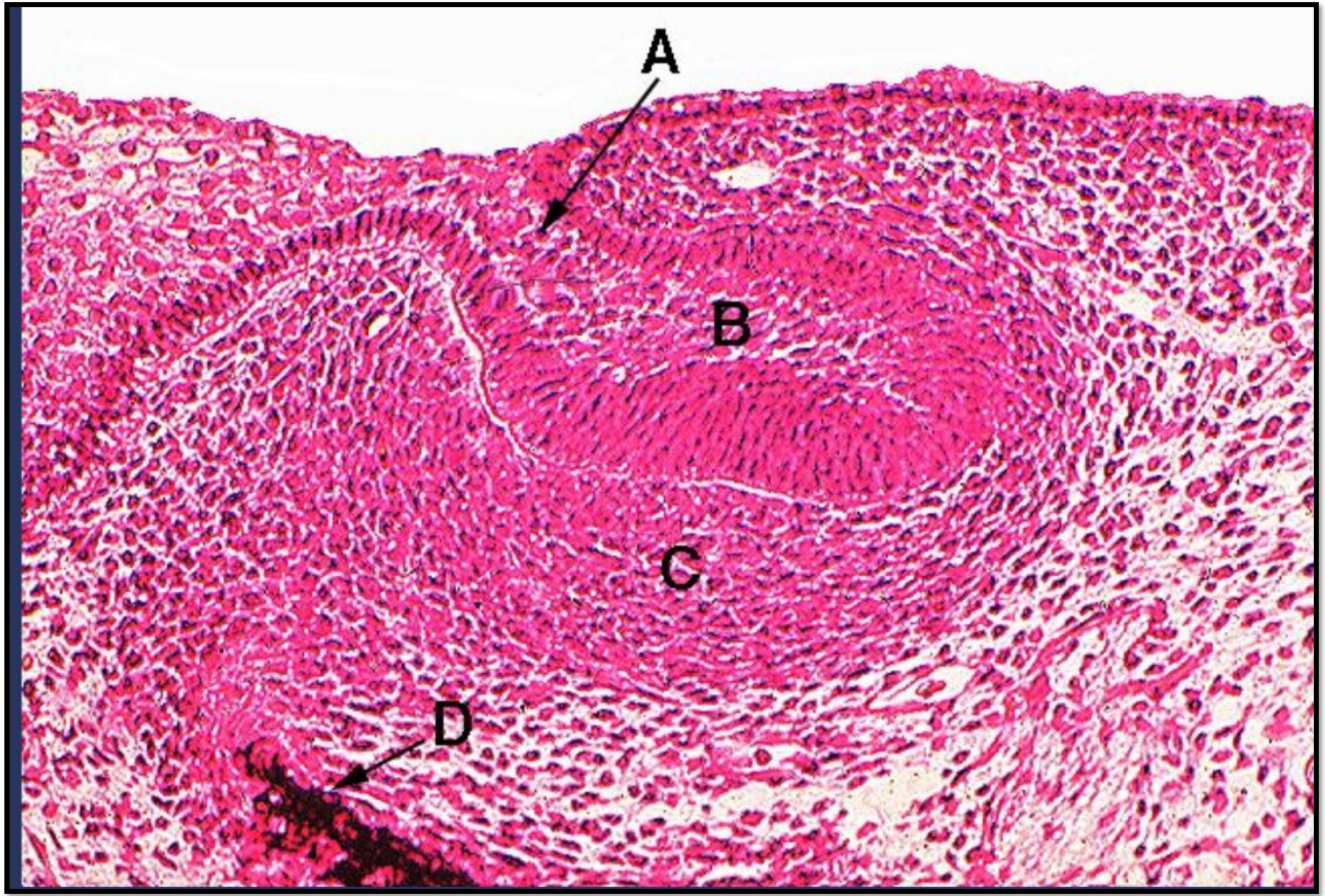


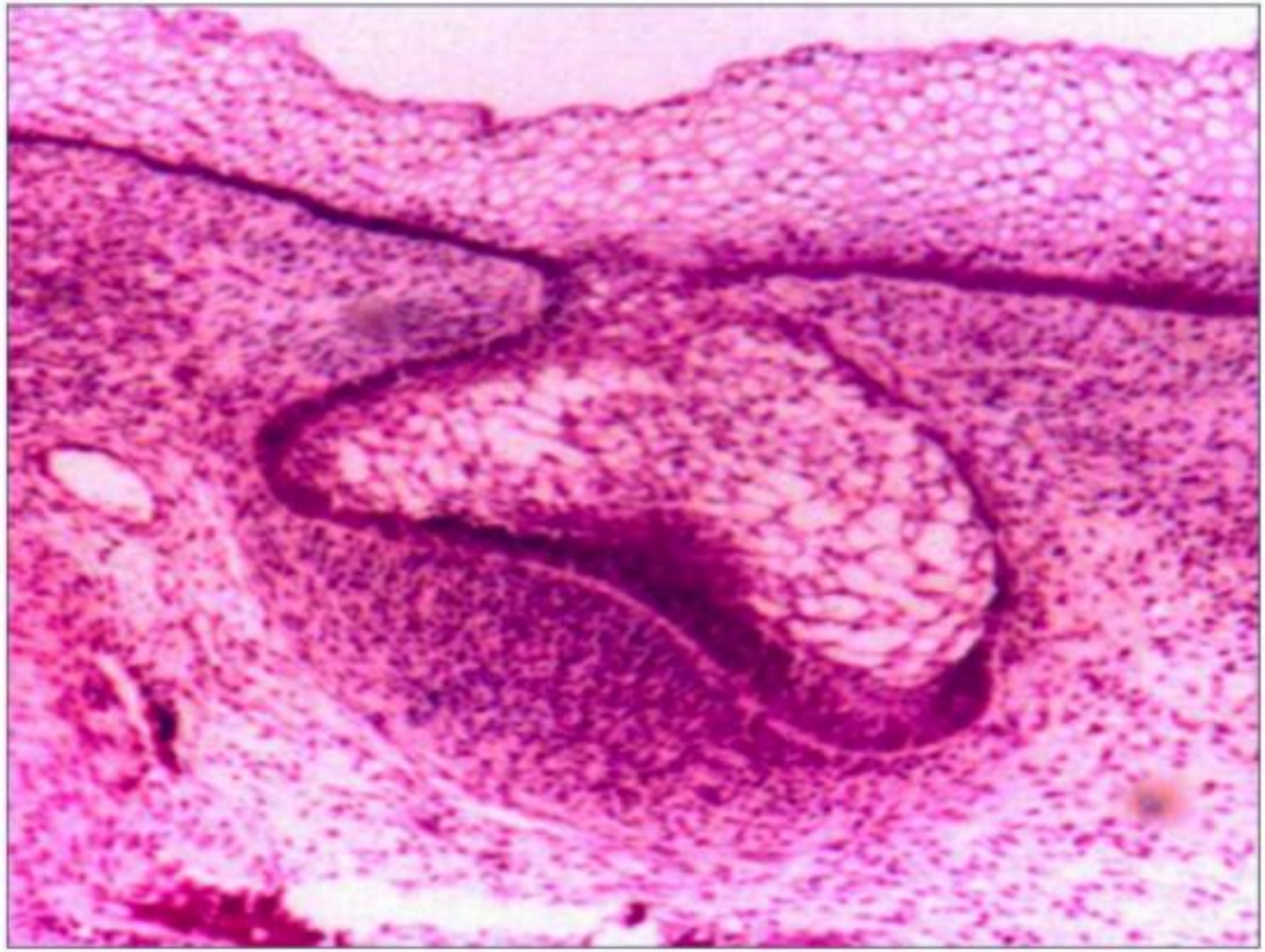
Bud stage

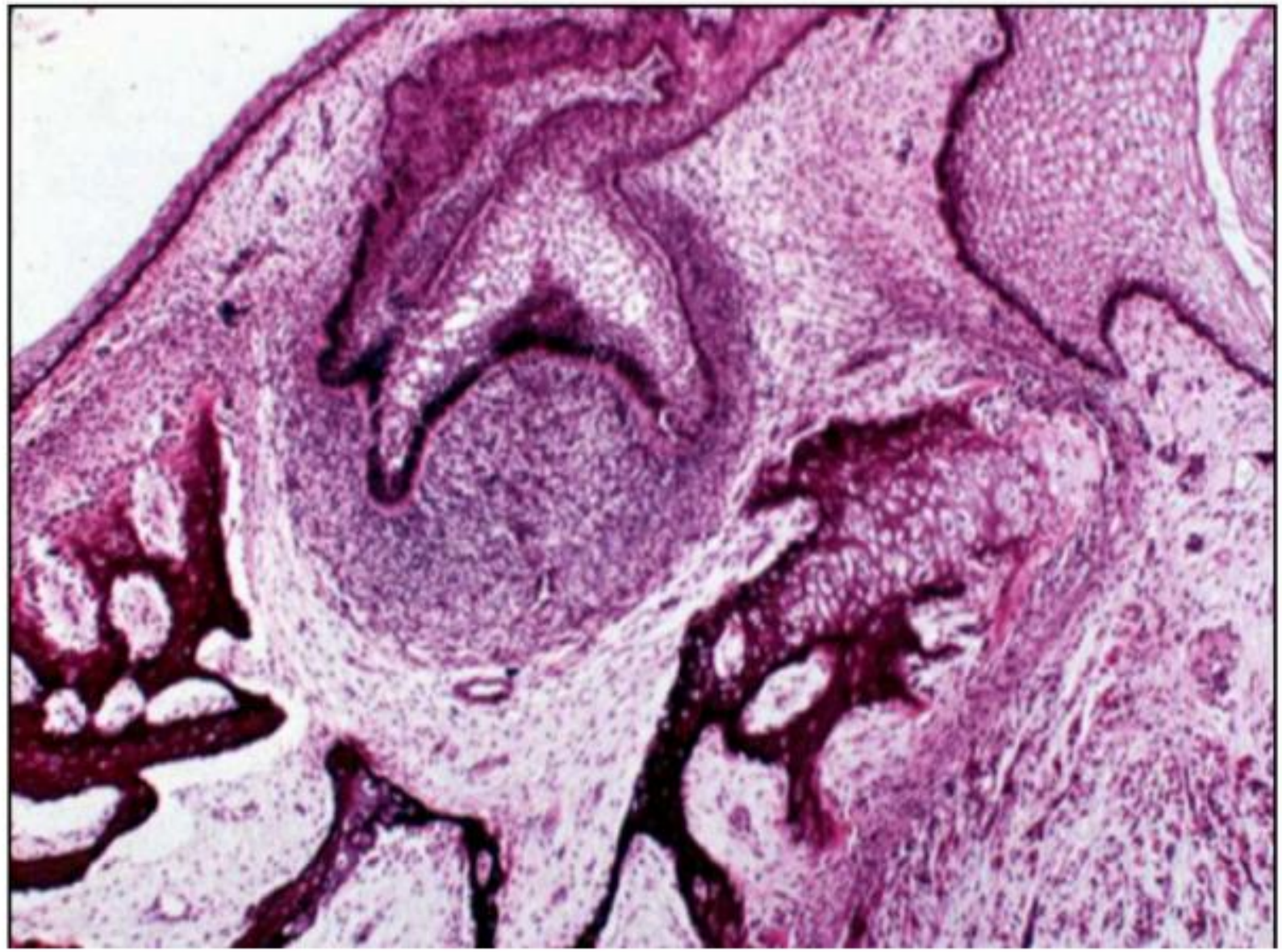
Cap Stage

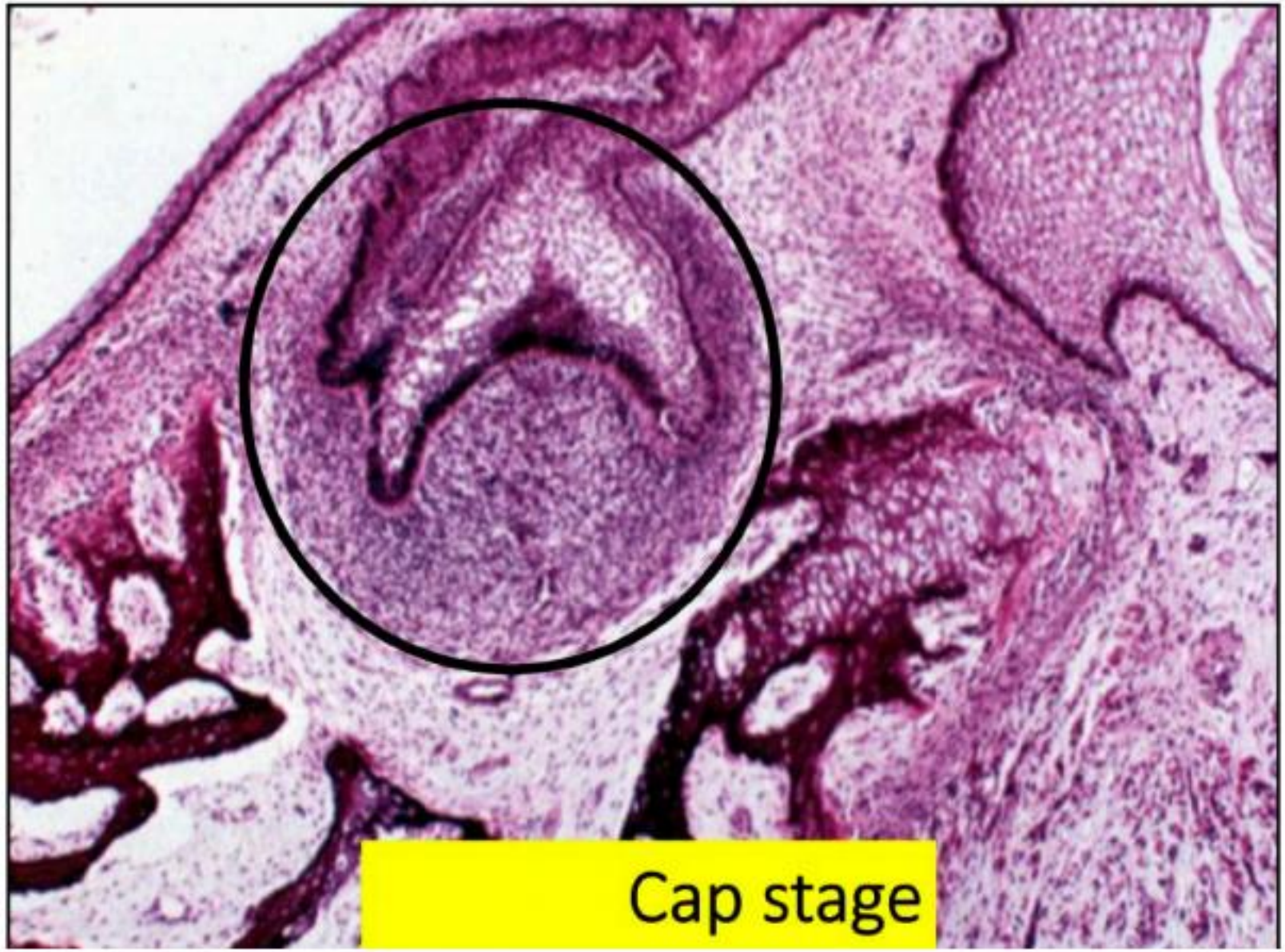


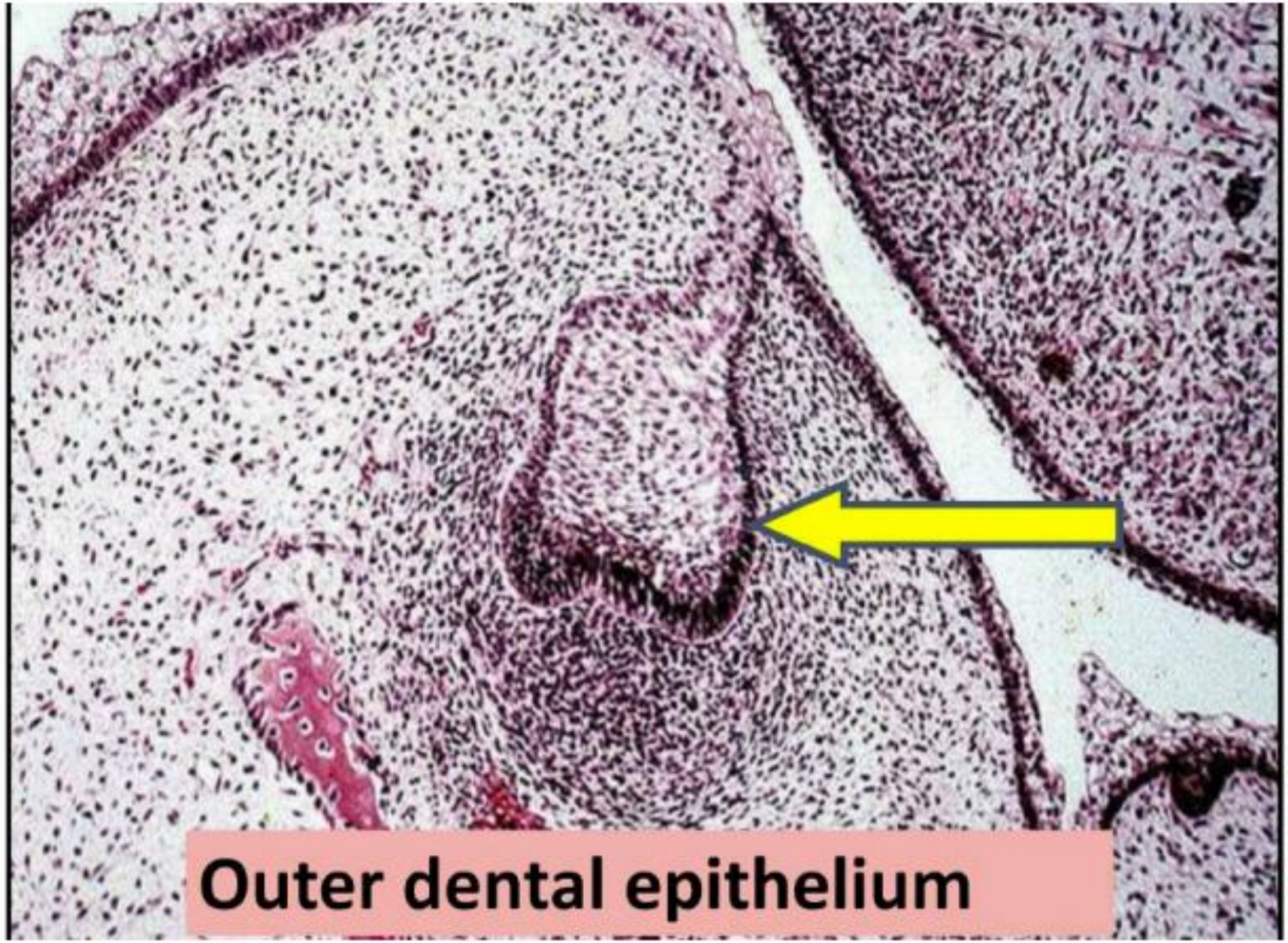
Bud stage of tooth development

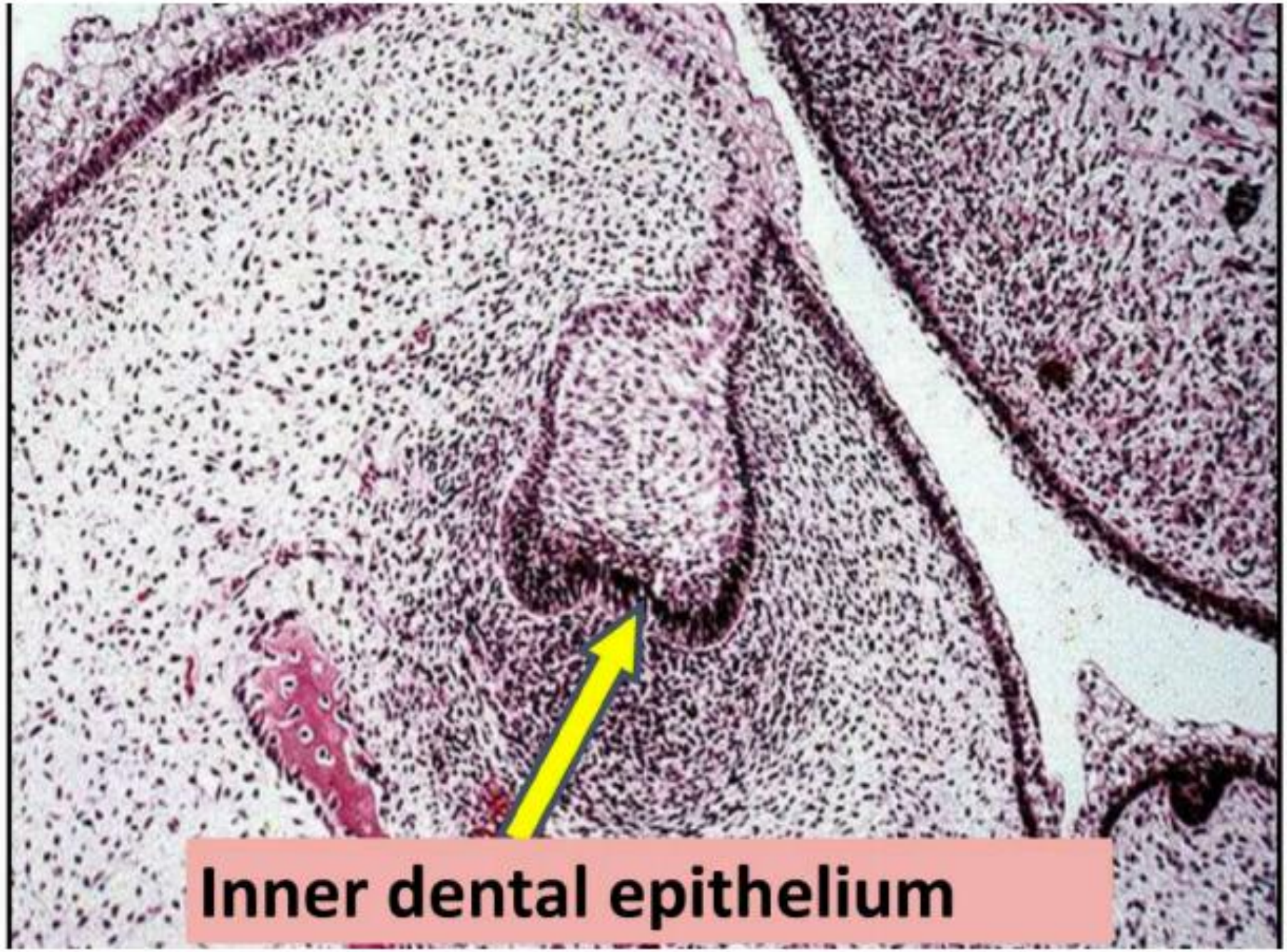

A
B
C
D

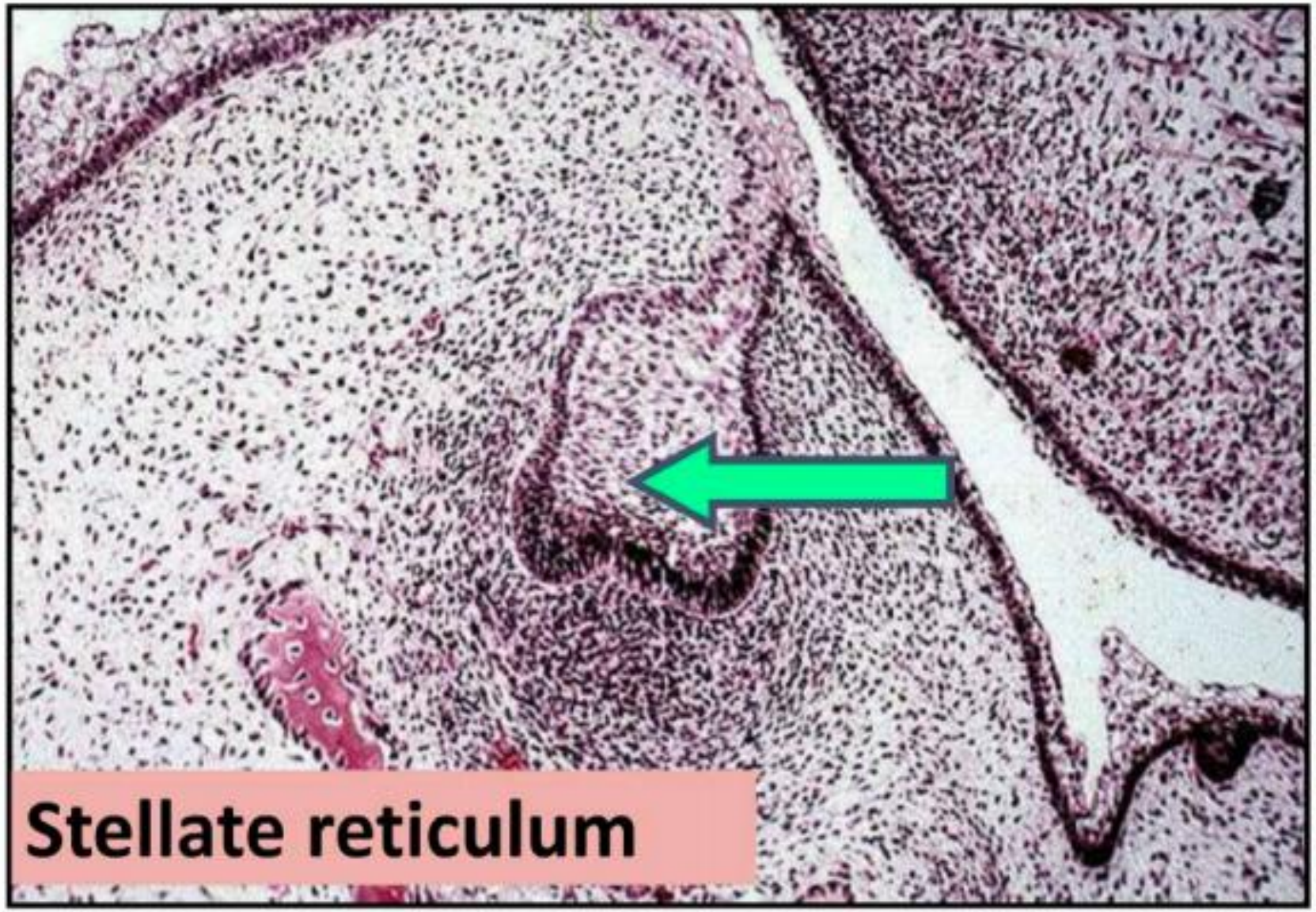


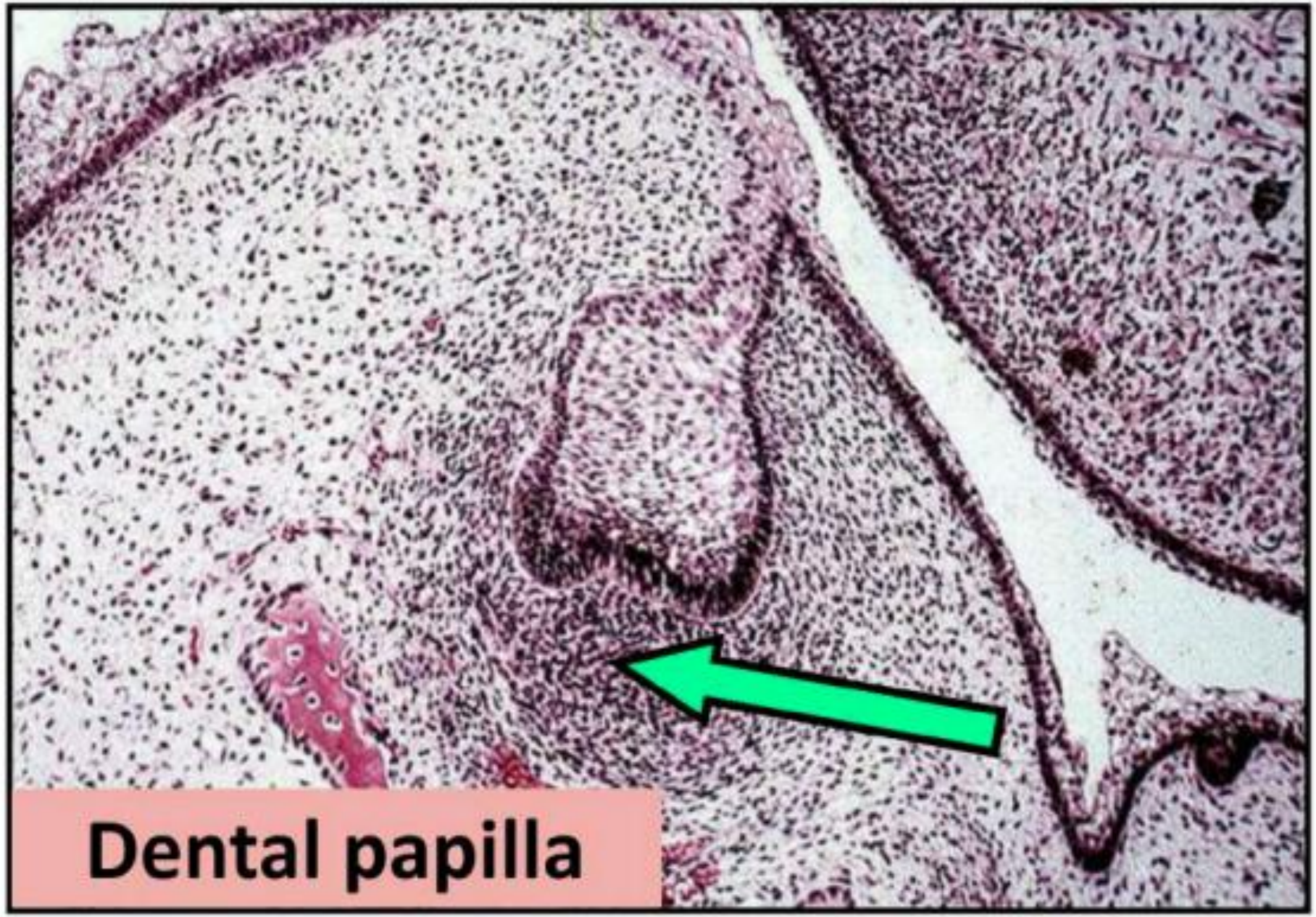


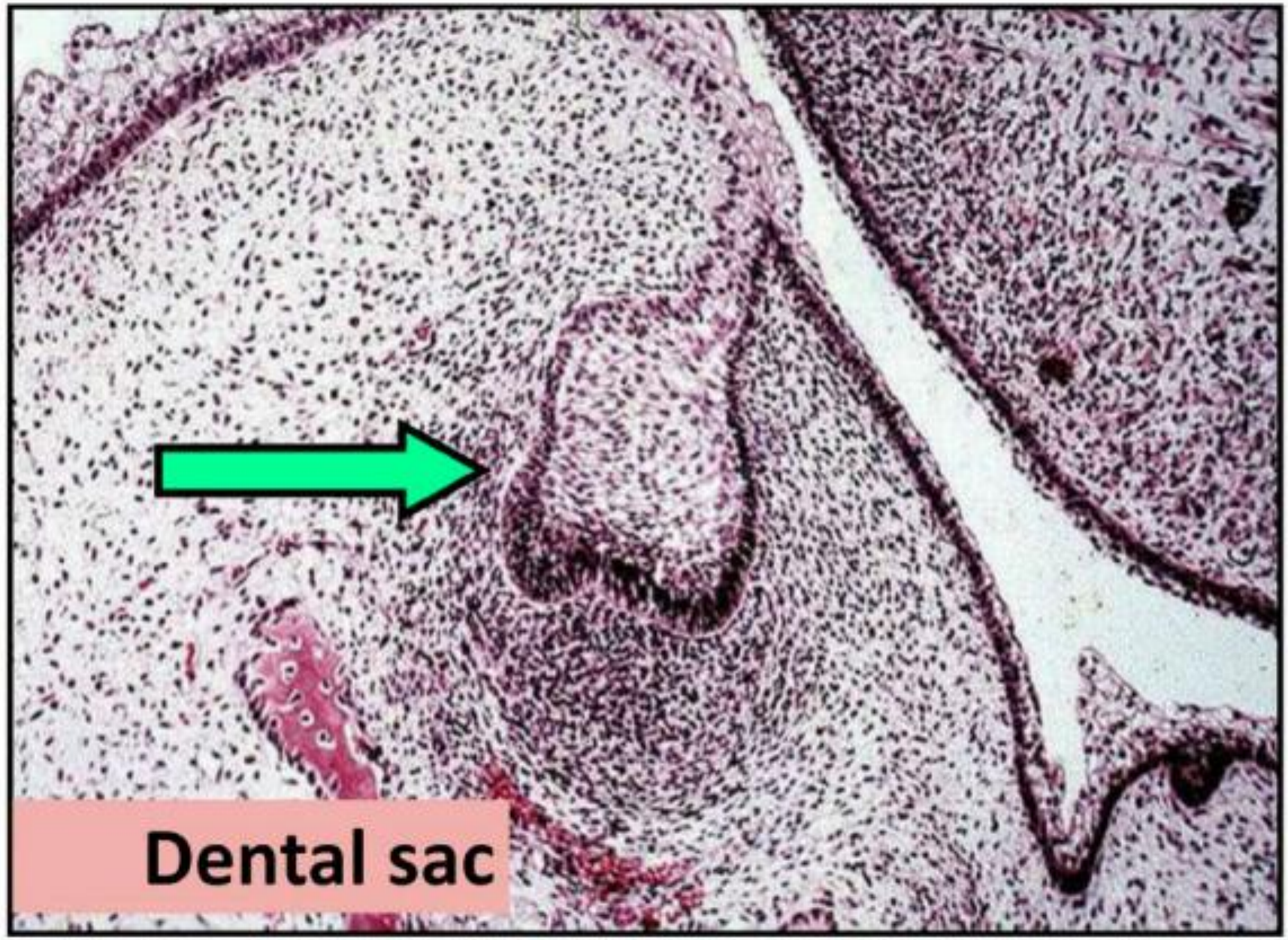

Cap stage

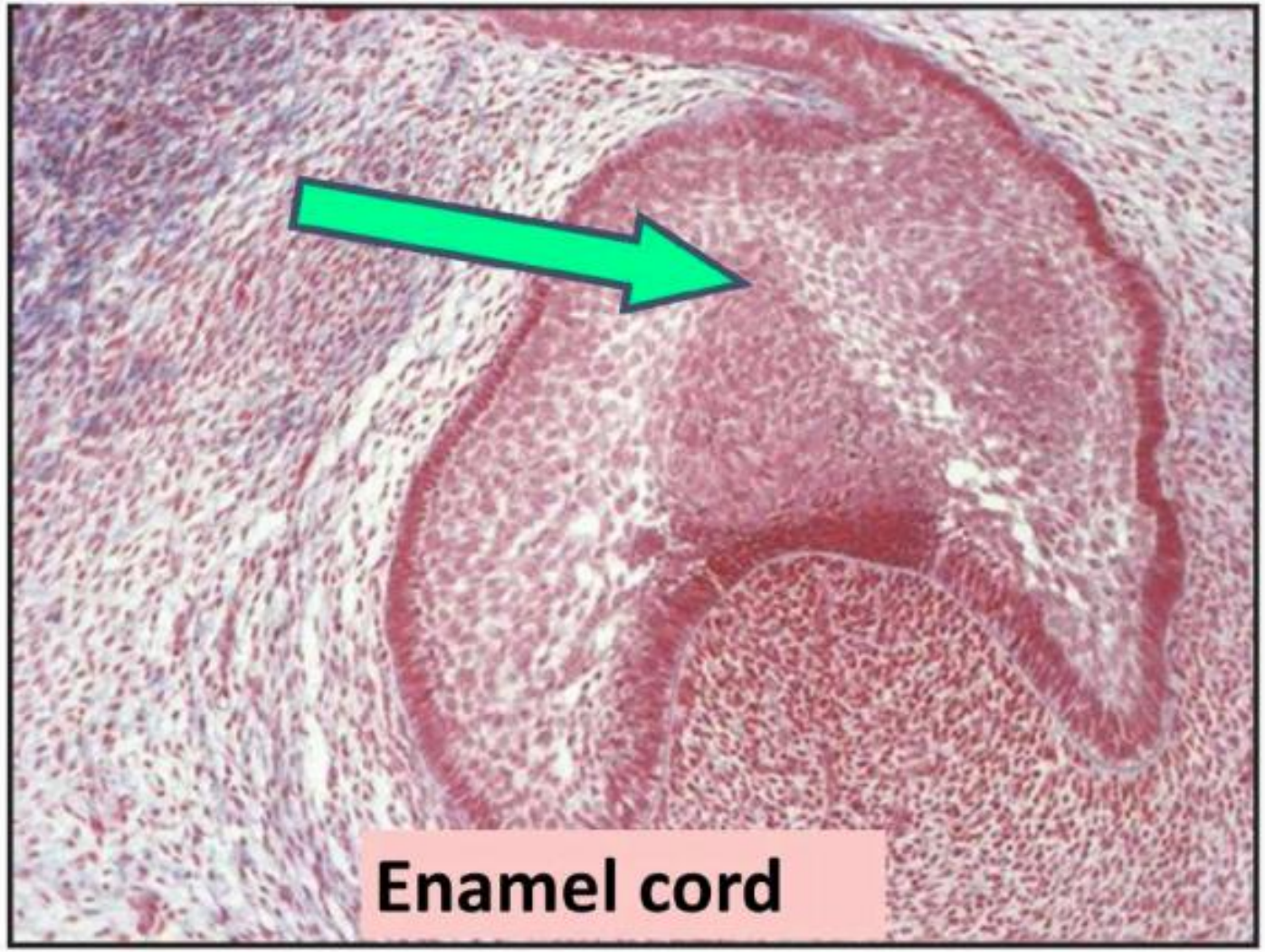

Outer dental epithelium

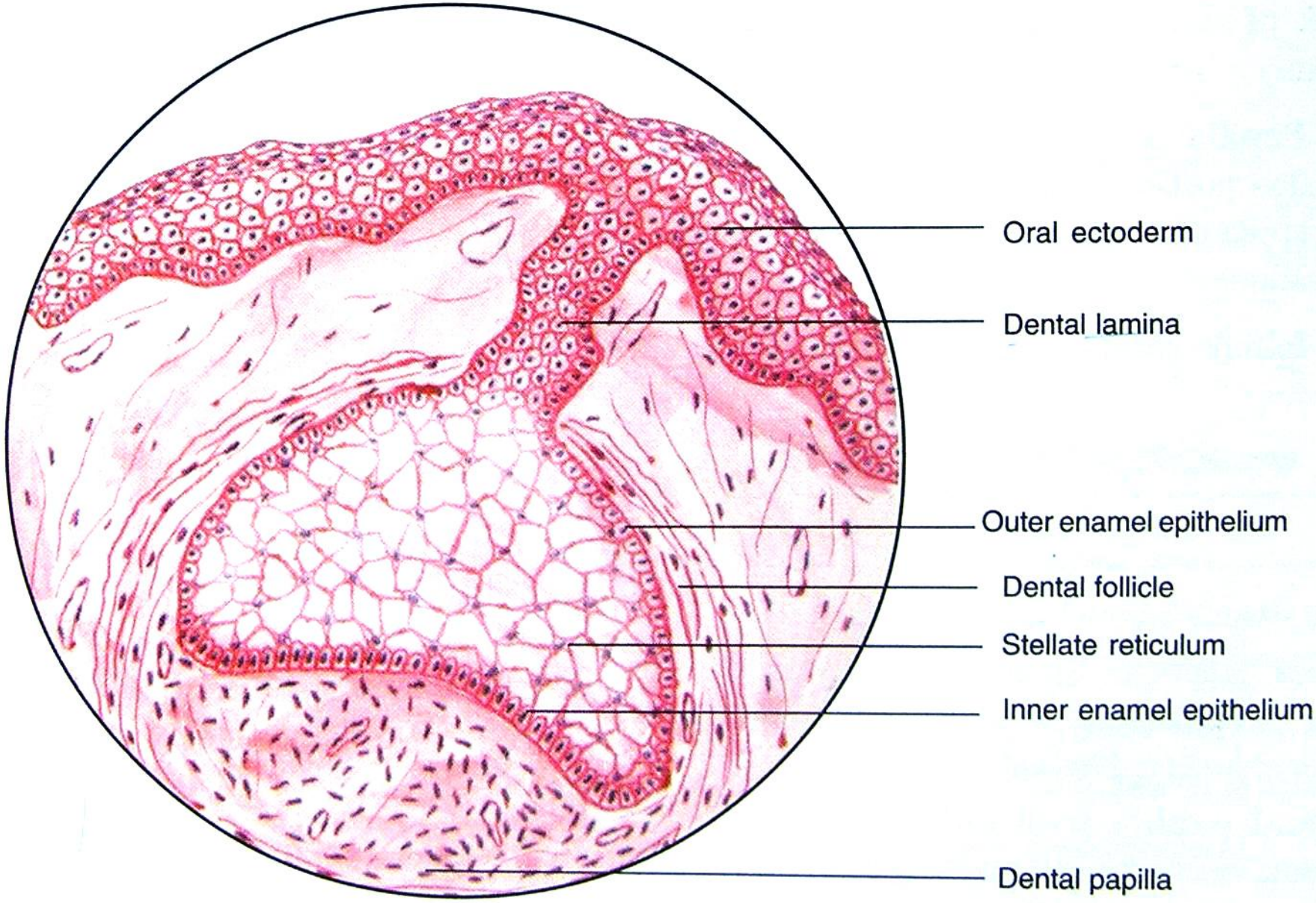

Inner dental epithelium


Stellate reticulum

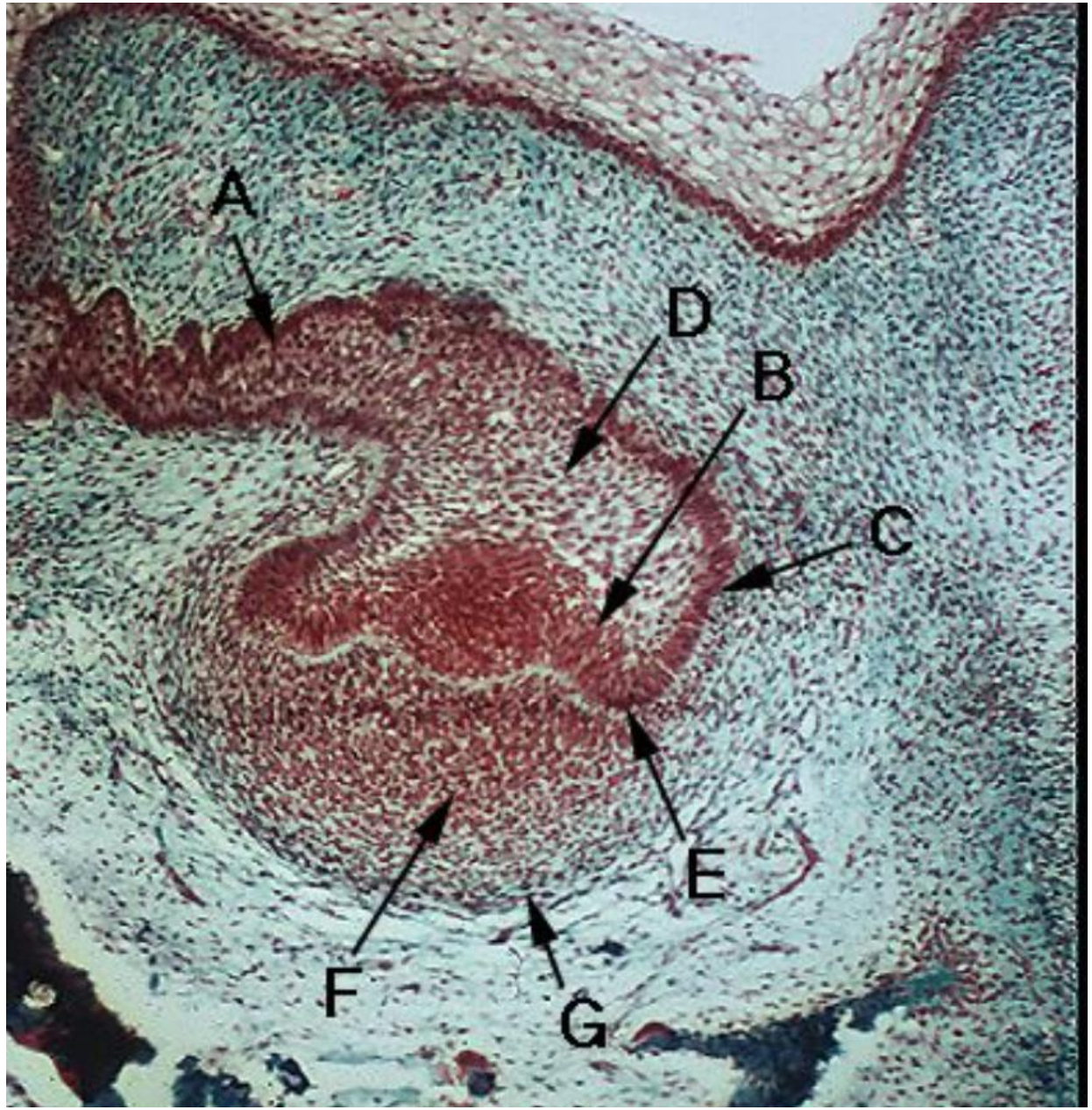

Dental papilla


Dental sac


Enamel cord



Cap stage of tooth development


A
D
B
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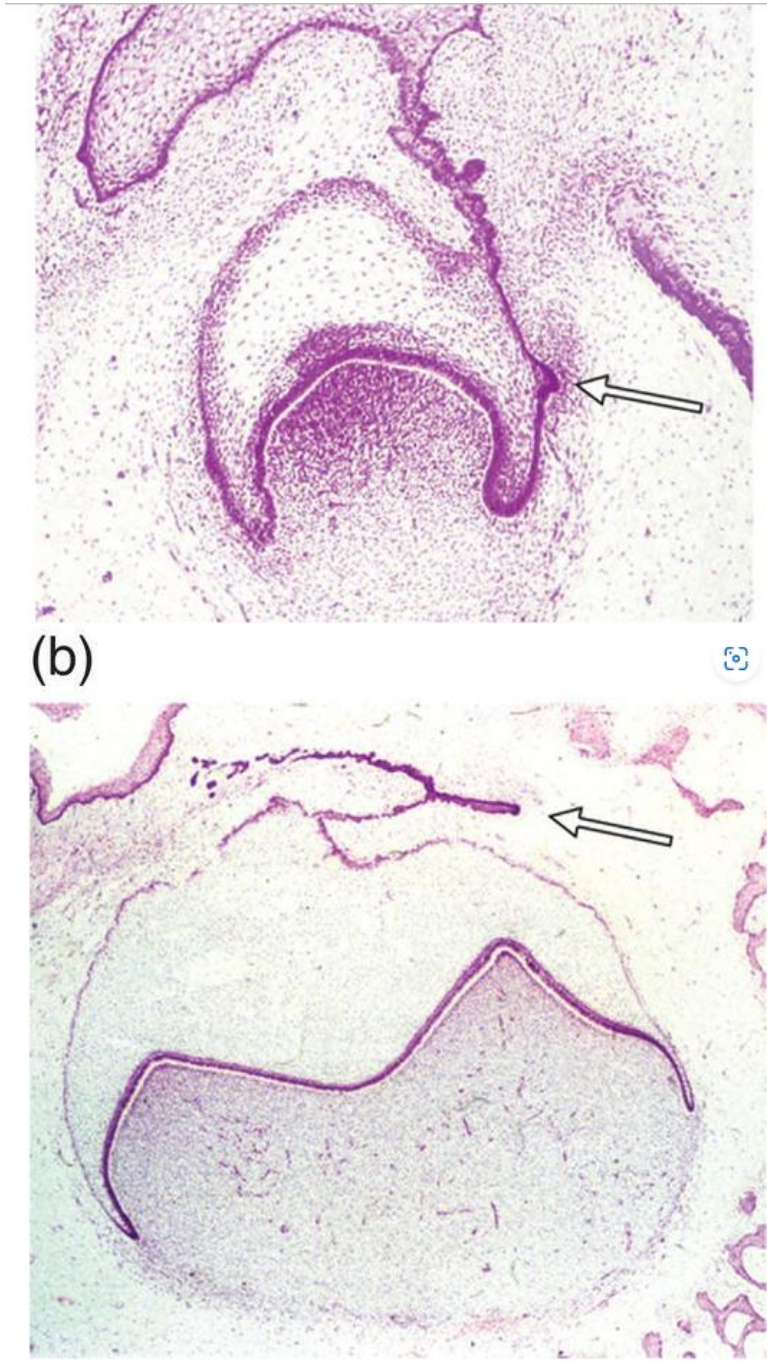
G



Successional teeth form via localized proliferation within the dental lamina associated with each primary tooth germ (a, arrow). Accessional teeth form as a posterior extension of the dental lamina (b, arrow) (hematoxylin and eosin).

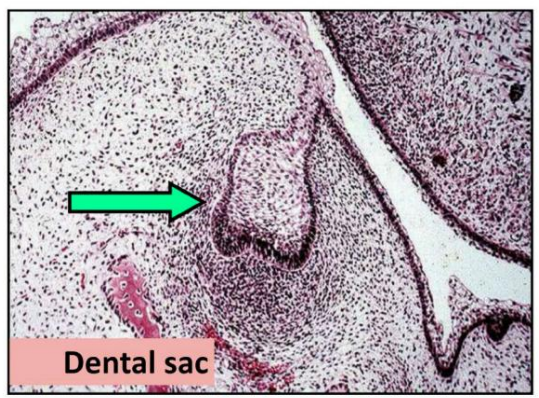
Description:

1. Oral cavity lined by a non-keratinized epithelium
2. Cap like structure of epithelial cells in the underlying ectomesenchyme
3. Connecting band between surface epithelium and cap like structure
4. Cap like structure is made up of cuboidal cells at the convexity, columnar cells at the concavity and network of interconnected star shaped cells in the center
5. A condensation of cells at the centre of the concavity which extend as flat cells to the convexity of the cap structure
6. Densely condensed ectomesenchymal cells inside and outside the cap

Critical analysis:

- Oral ectoderm (1)
- Enamel organ (2)
- Dental lamina (3)
- Outer enamel epithelium, inner enamel epithelium, stratum intermedium and stellate reticulum in enamel organ (4)
- Enamel knot and enamel cord (5)
- Dental papilla and dental sac (6)

Identification: H and E stained section shows cap stage of tooth development




THANK
YOU!