

Дополнителен материјал за практична настава по хистологија и ембриологија (2)

**Изготвила Катедрата за хистологија и ембриологија
Медицински факултет – Универзитет „Св. Кирил и Методиј“ - Скопје**

ЕНДОКРИН СИСТЕМ

Hypothalamus

Antidiuretic hormone (ADH)
Oxytocin (OT)
Regulatory hormones

Pituitary gland

Anterior pituitary secretes:

Adrenocorticotropic hormone (ACTH)
Follicle-stimulating hormone (FSH)
Growth hormone (GH)
Luteinizing hormone (LH)
Melanocyte-stimulating hormone (MSH)
Prolactin (PRL)
Thyroid-stimulating hormone (TSH)

Posterior pituitary releases:

Antidiuretic hormone (ADH)
Oxytocin (OT)

Pineal gland

Melatonin



Parathyroid glands

(located on posterior surface of thyroid)
Parathyroid hormone (PTH)

Thyroid gland

Calcitonin (CT)
Thyroid hormone (TH)

(Thymus)

Thymopoietin
Thymosins

(Heart)

Atrial natriuretic peptide

Adrenal glands

Cortex:

Corticosteroids

Medulla:

Epinephrine (E)

Norepinephrine (NE)

Gastrointestinal (GI) tract

Cholecystokinin (CCK)
Gastric inhibitory peptide (GIP)
Gastrin
Secretin
Vasoactive intestinal peptide (VIP)

(Kidney)

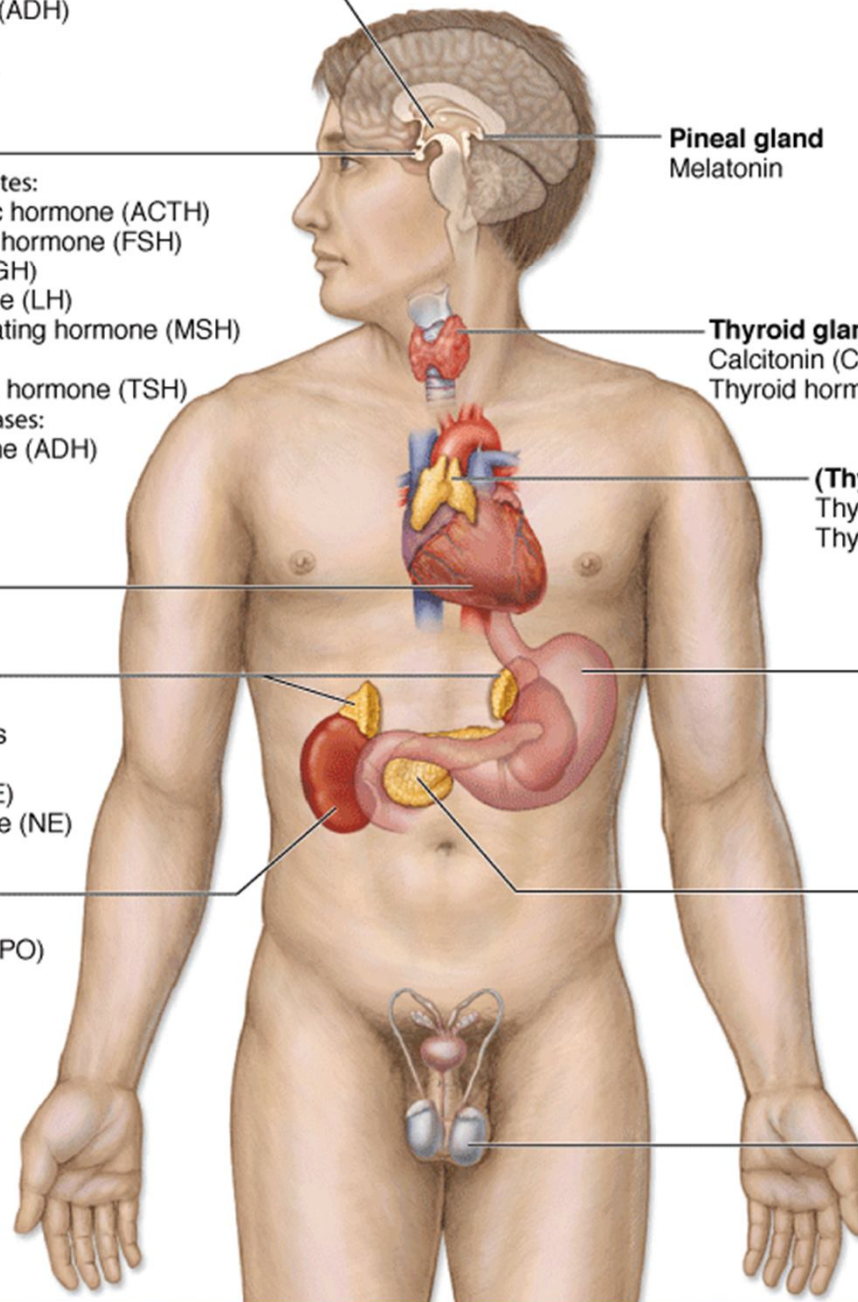
Calcitriol
Erythropoietin (EPO)
Renin

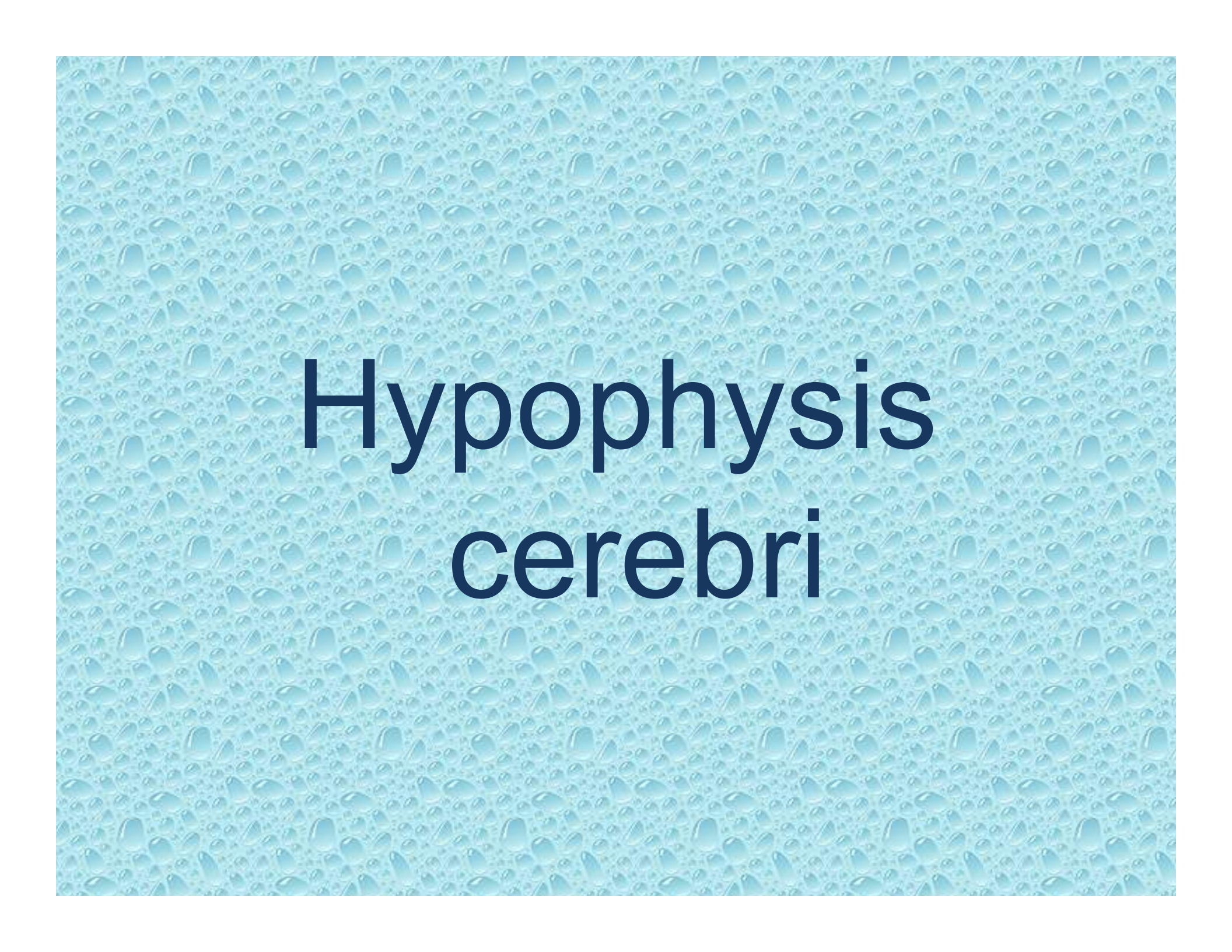
Pancreatic islets

Glucagon
Insulin
Somatostatin
Pancreatic polypeptide

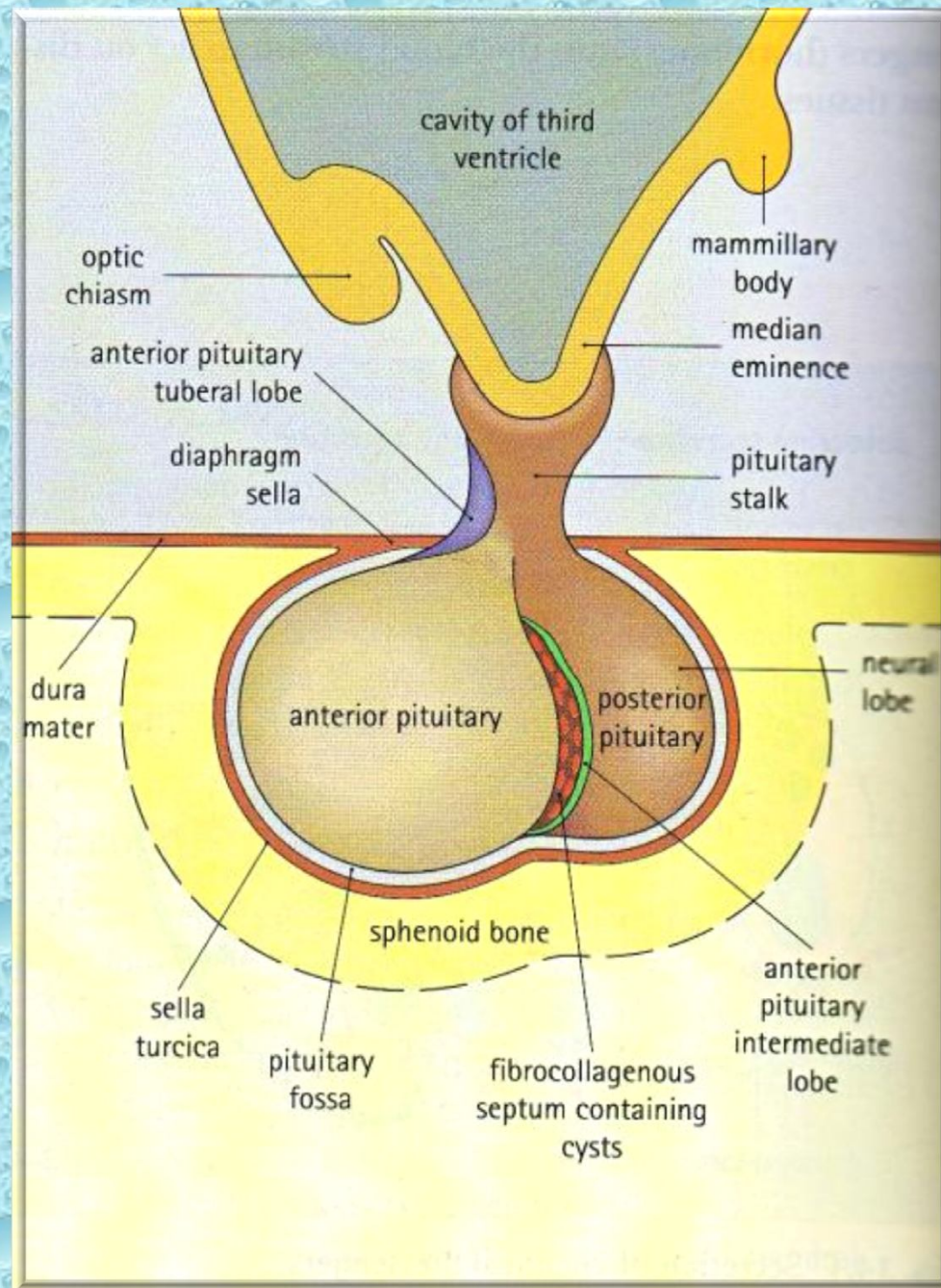
(Testes) (ovaries-women)

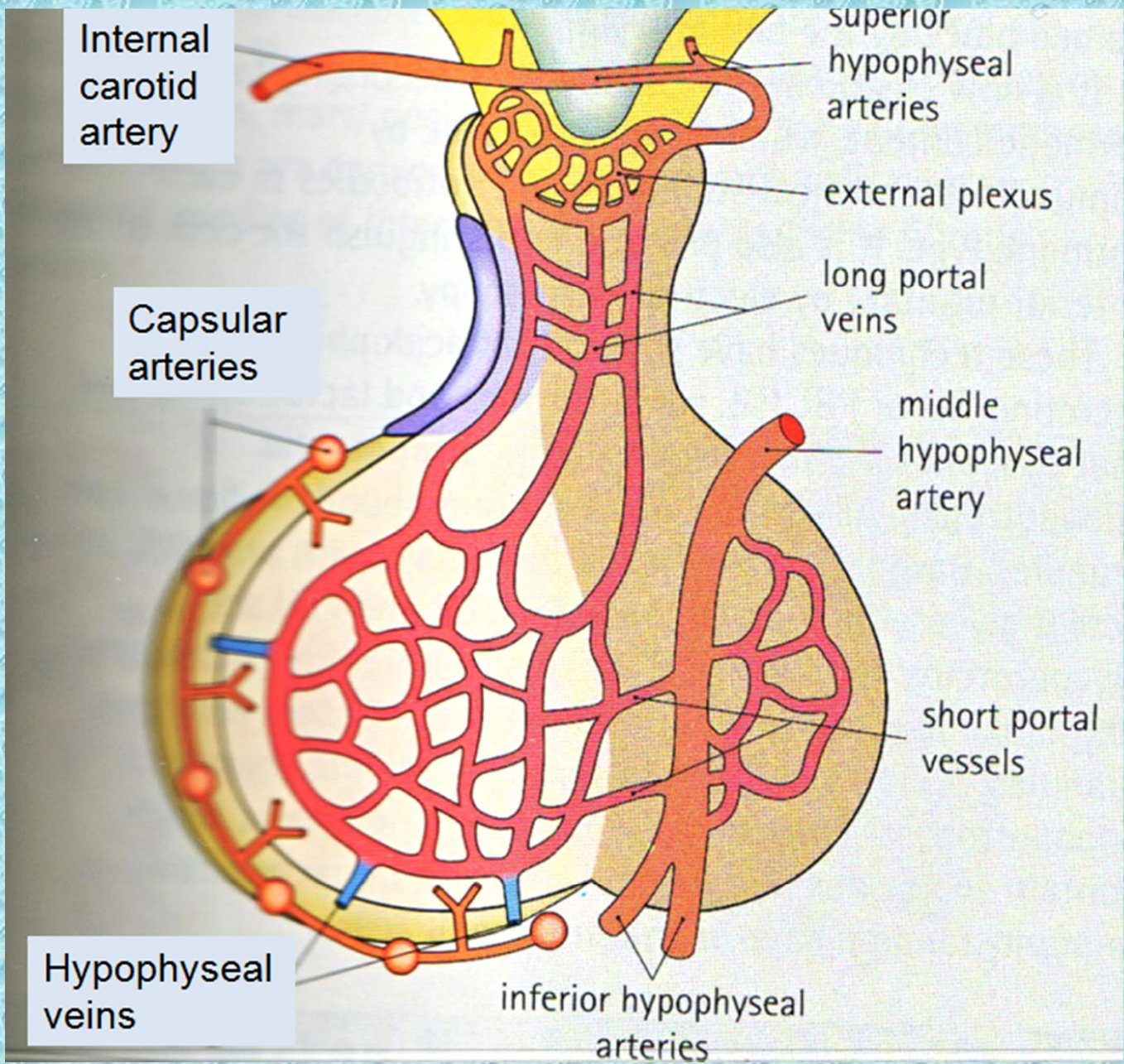
Androgens
Inhibin



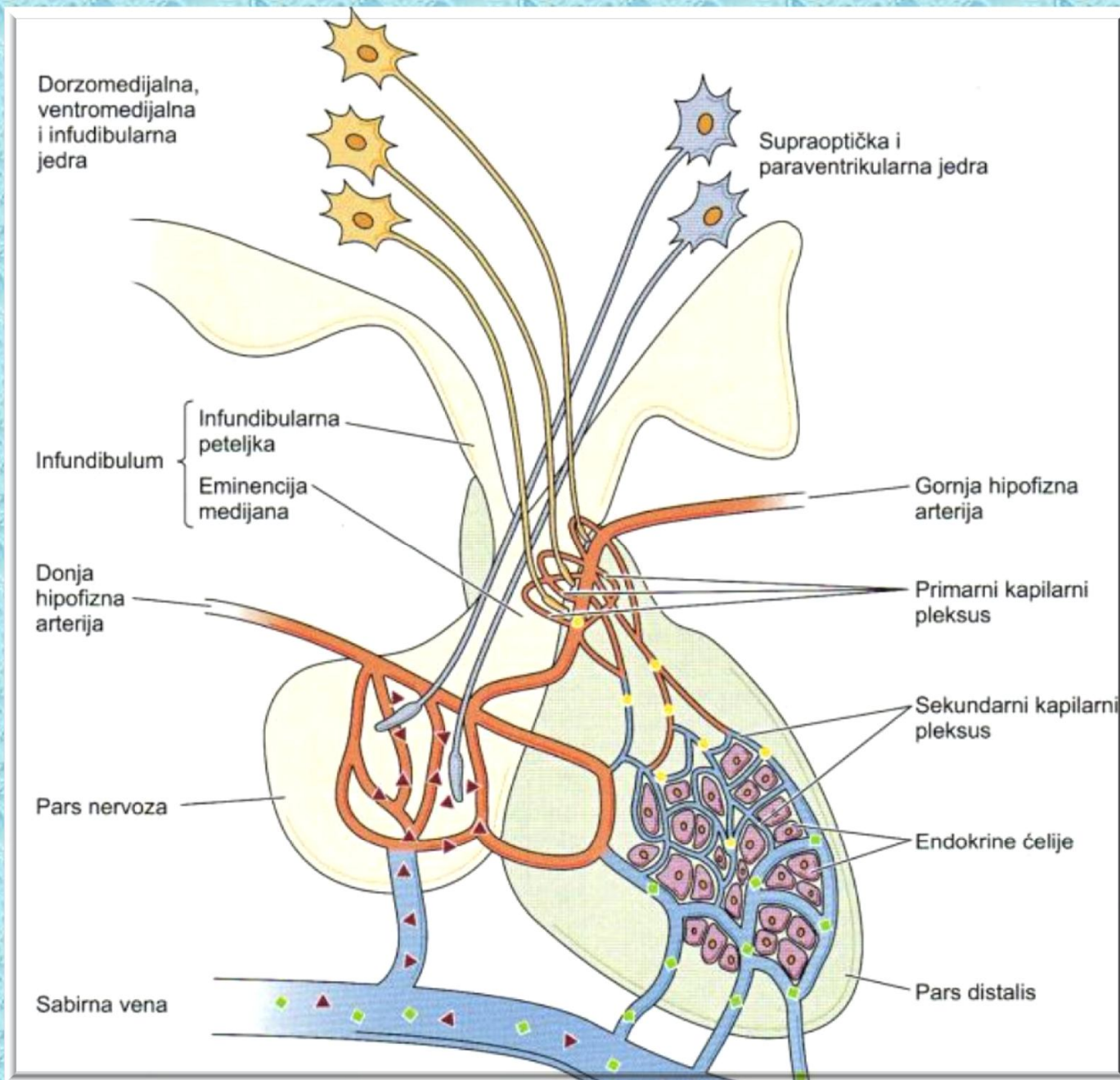


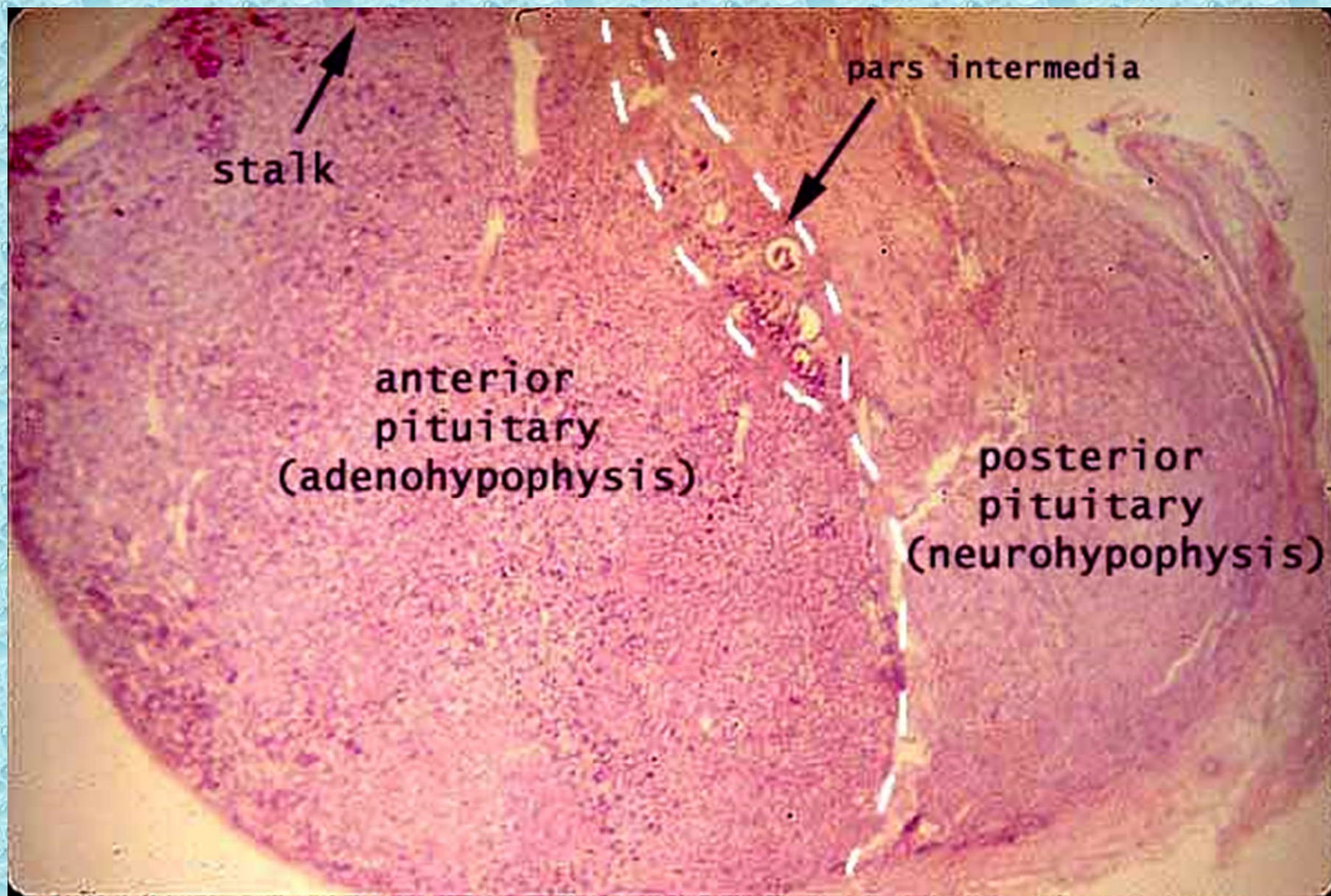
Hypophysis cerebri



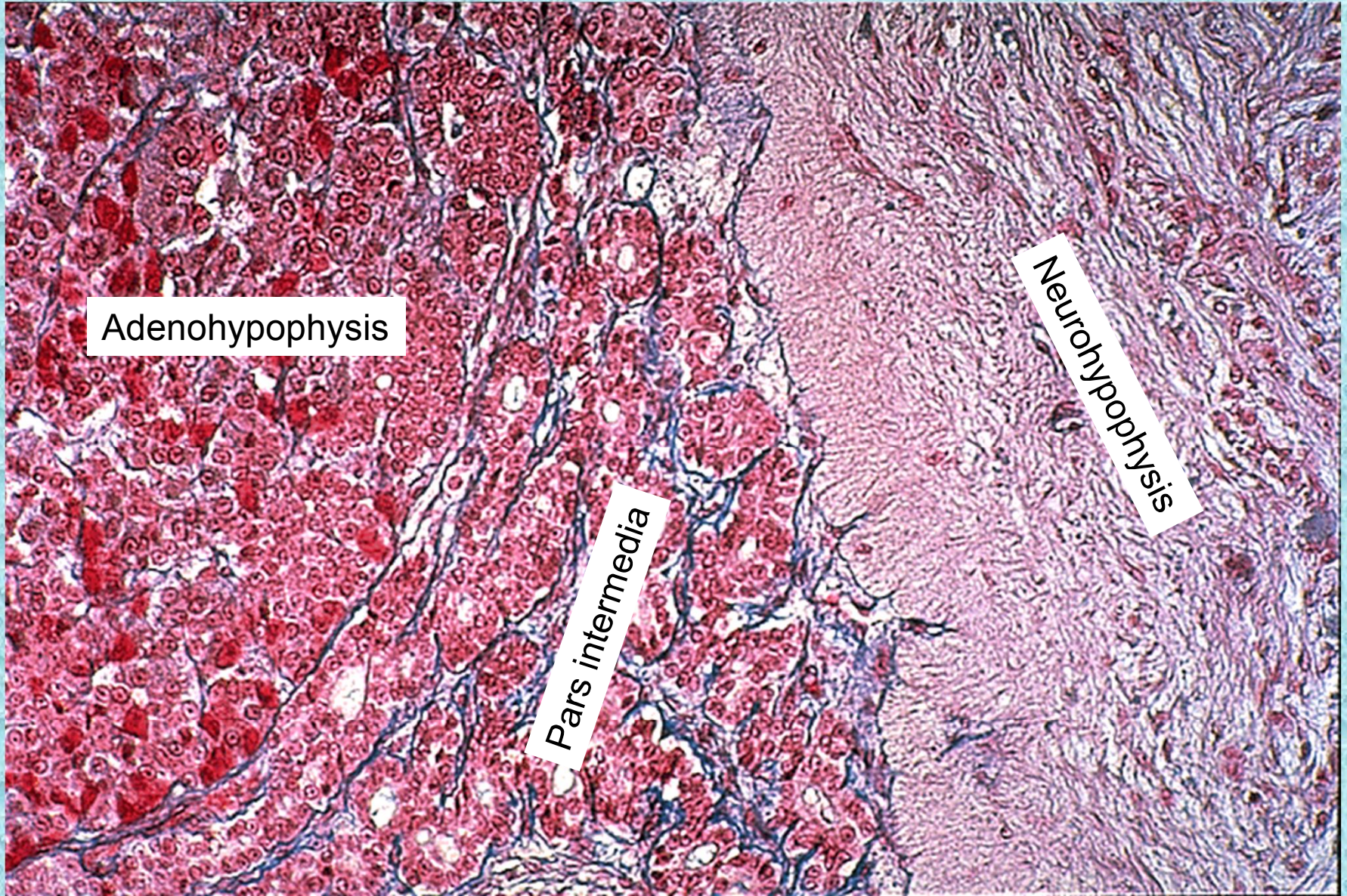


Крвоснабдување на хипофизата





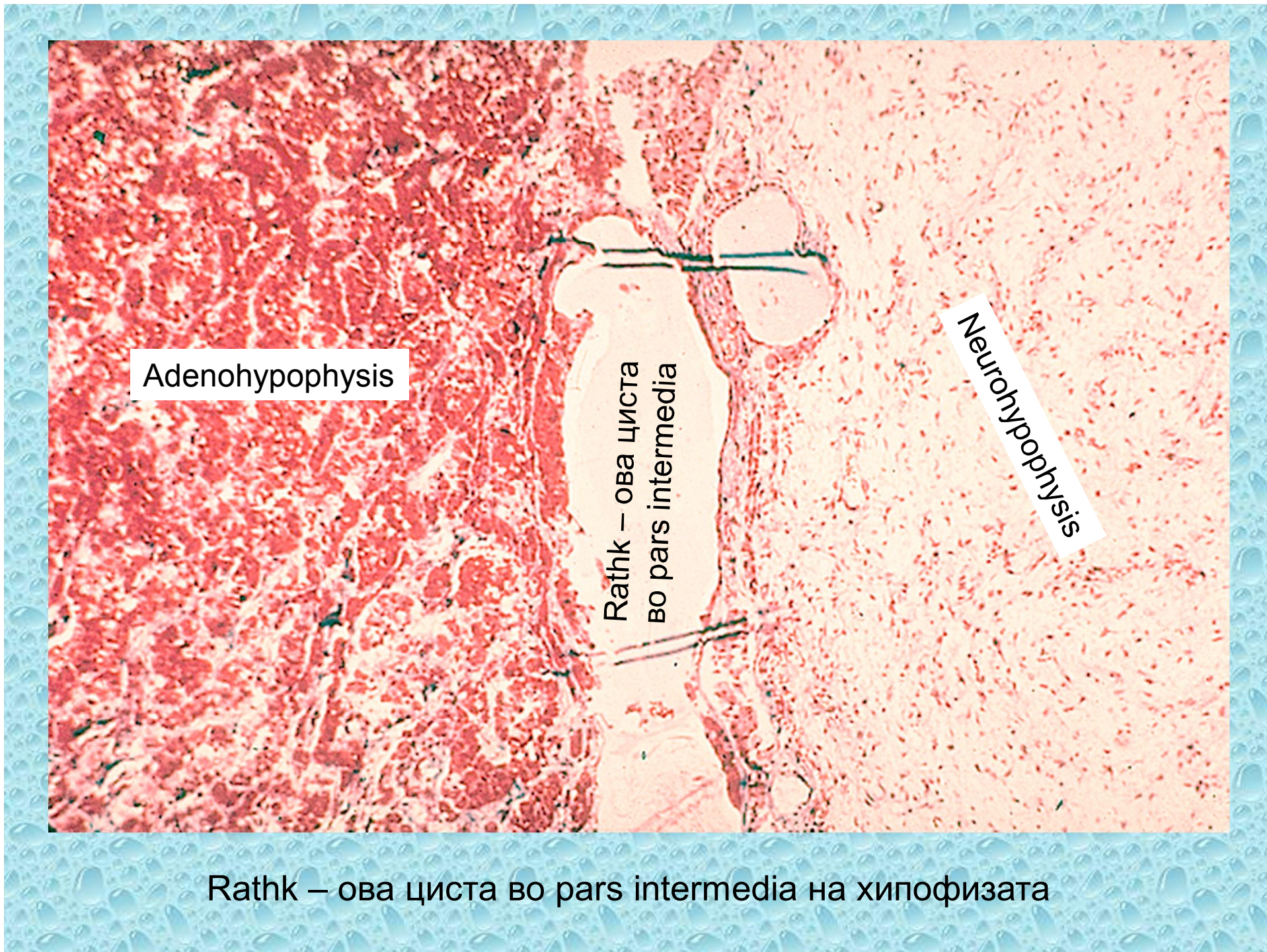
Микрофотографија со трите главни делови на хипофизата



Adenohypophysis

Pars intermedia

Neurohypophysis

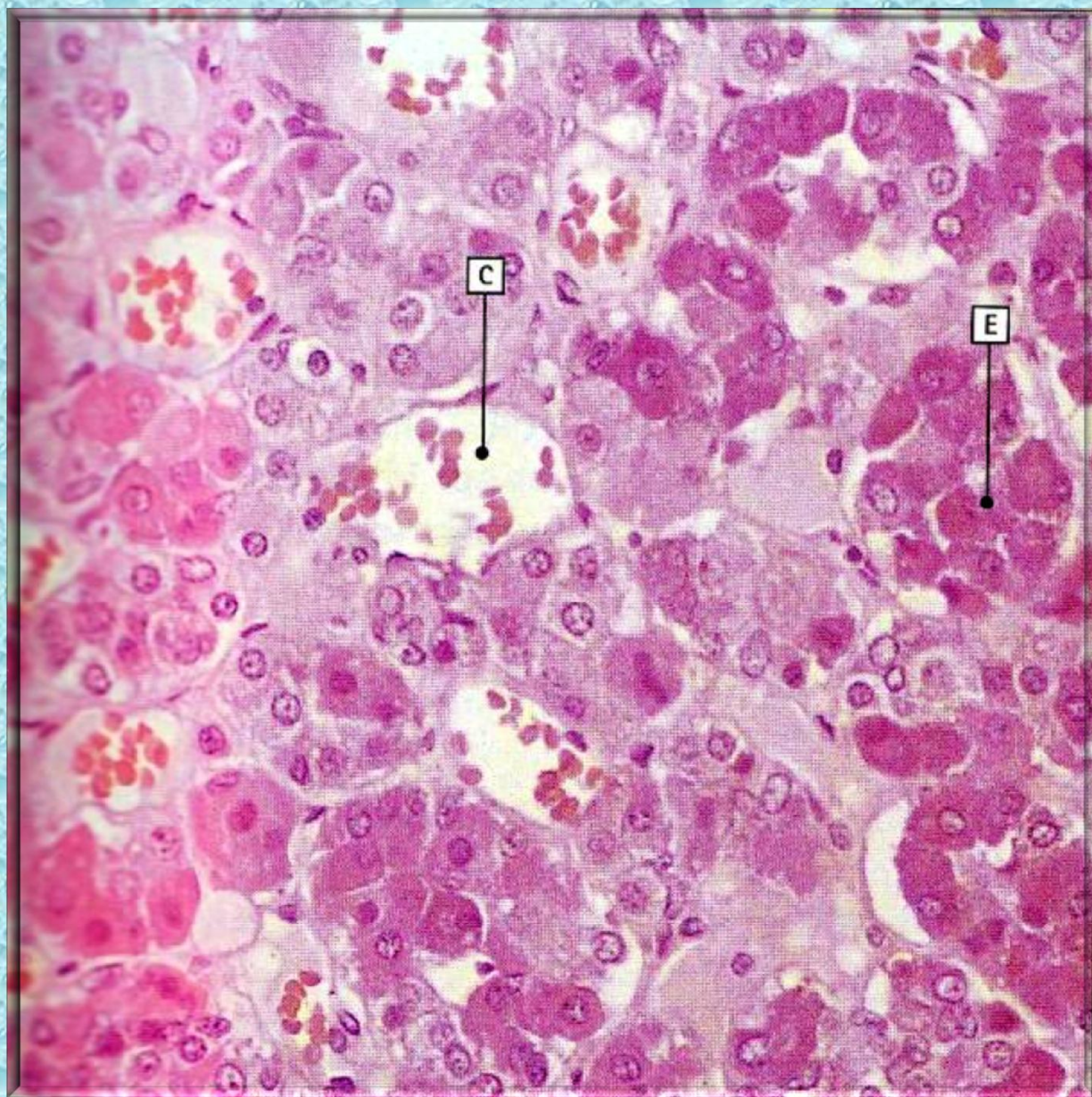


Adenohypophysis

Rathk – ова циста
во pars intermedia

Neurohypophysis

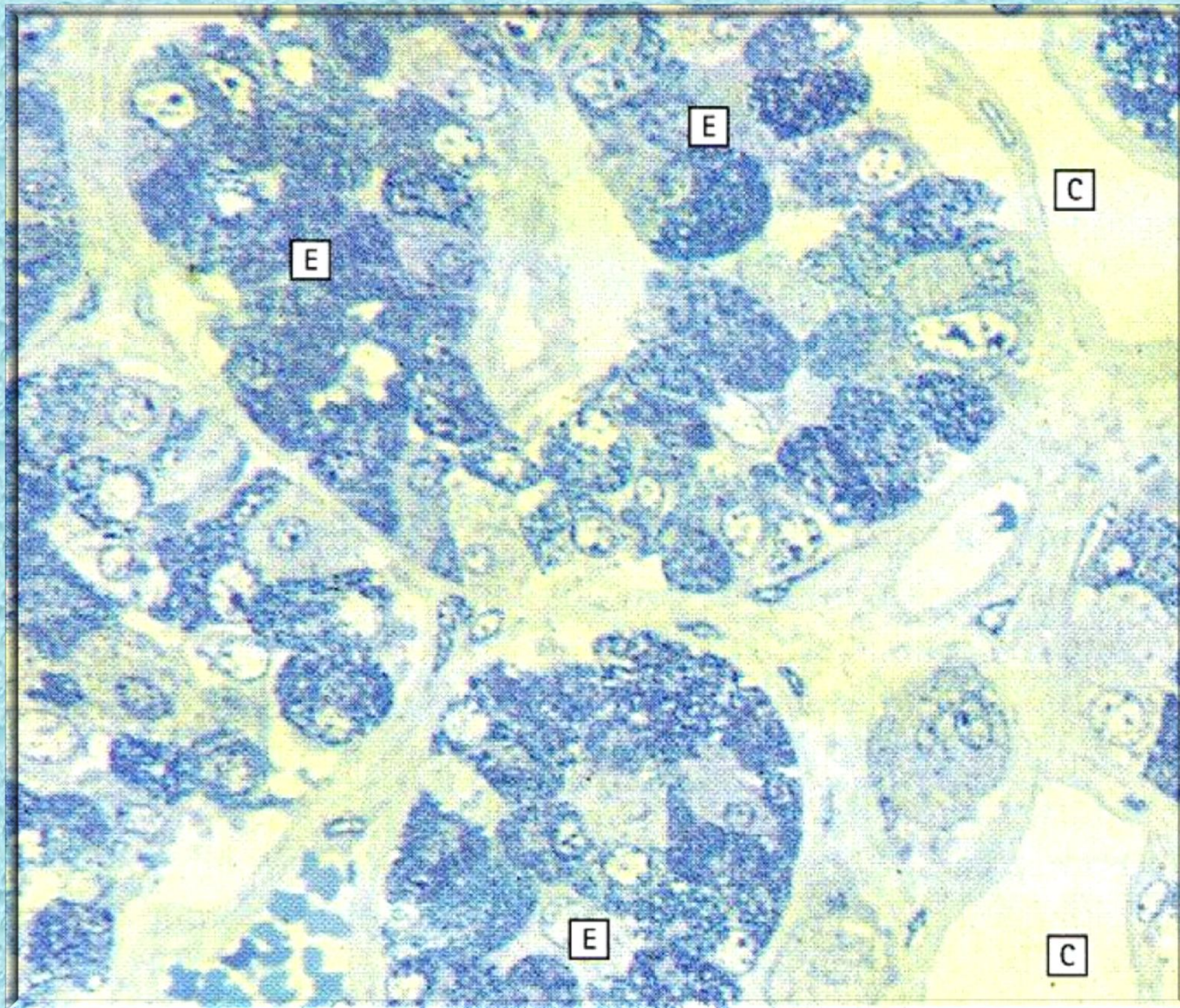
Rathk – ова циста во pars intermedia на хипофизата



Аденохипофиза

Бојење – HE

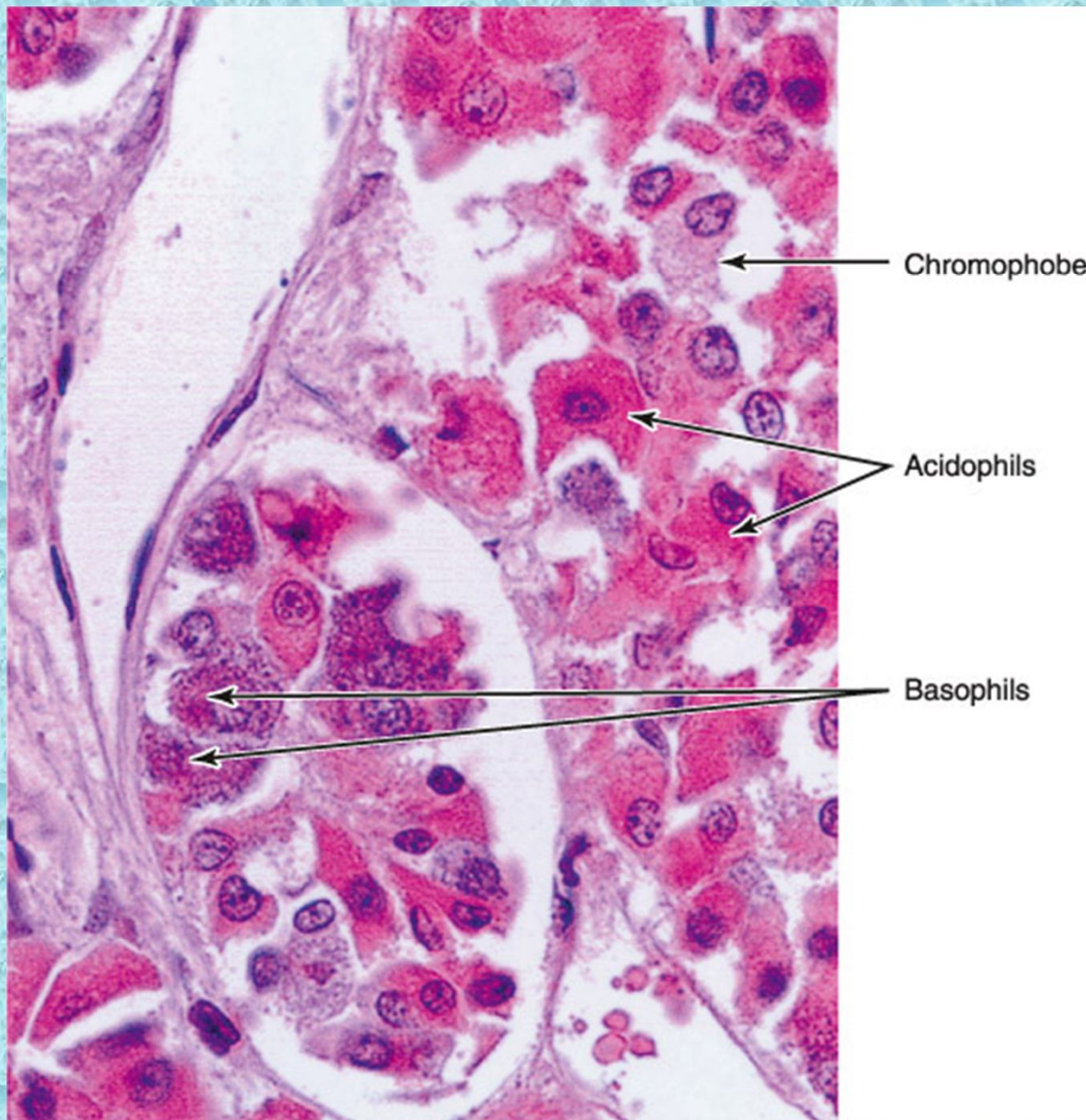
- E – групации од ендокрини клетки
- C – синусоидни капилари



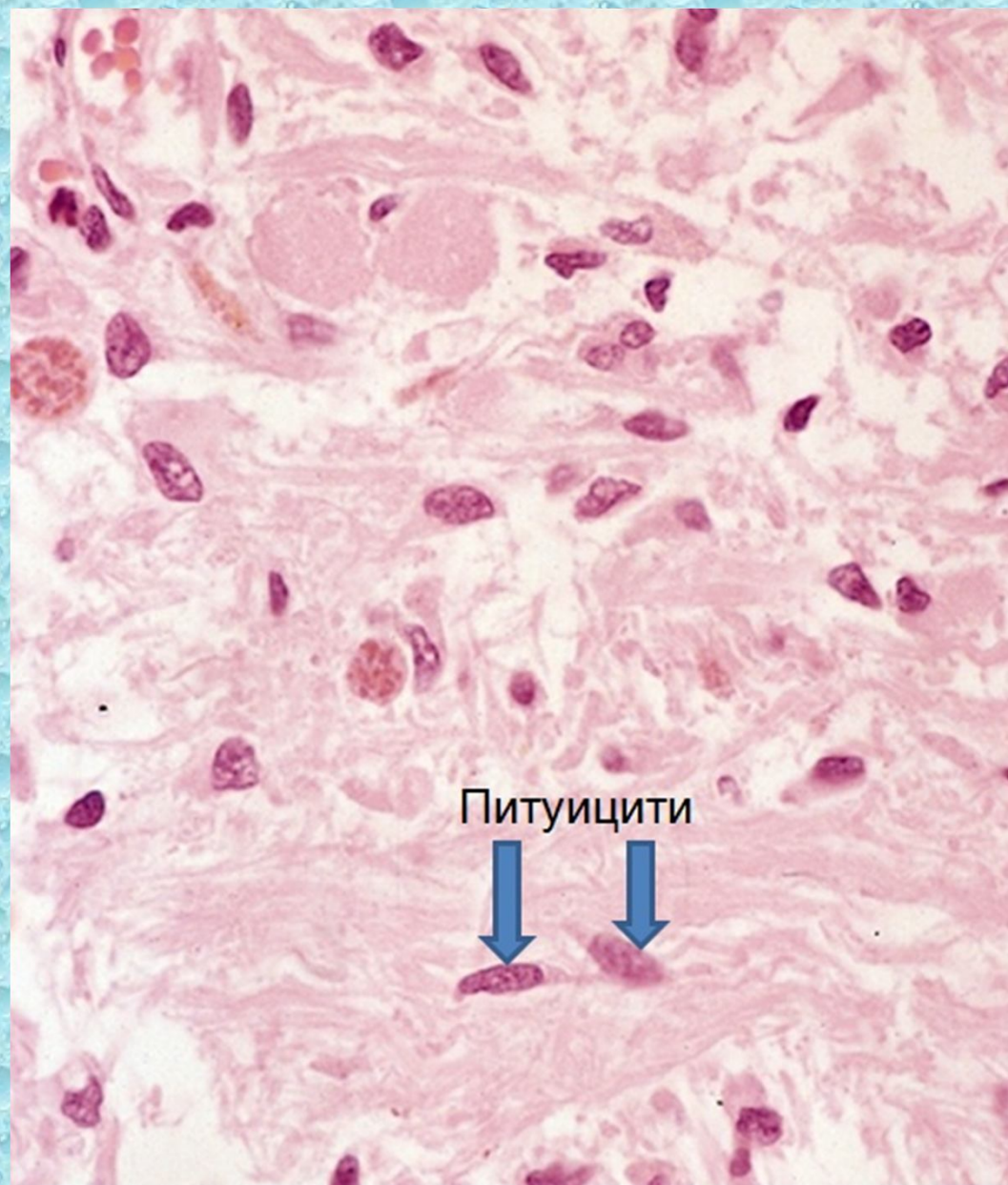
Аденохипофиза

Боєње:
toluidine blue

- E – групации од ендокрини клетки
- C – синусоидни капилари

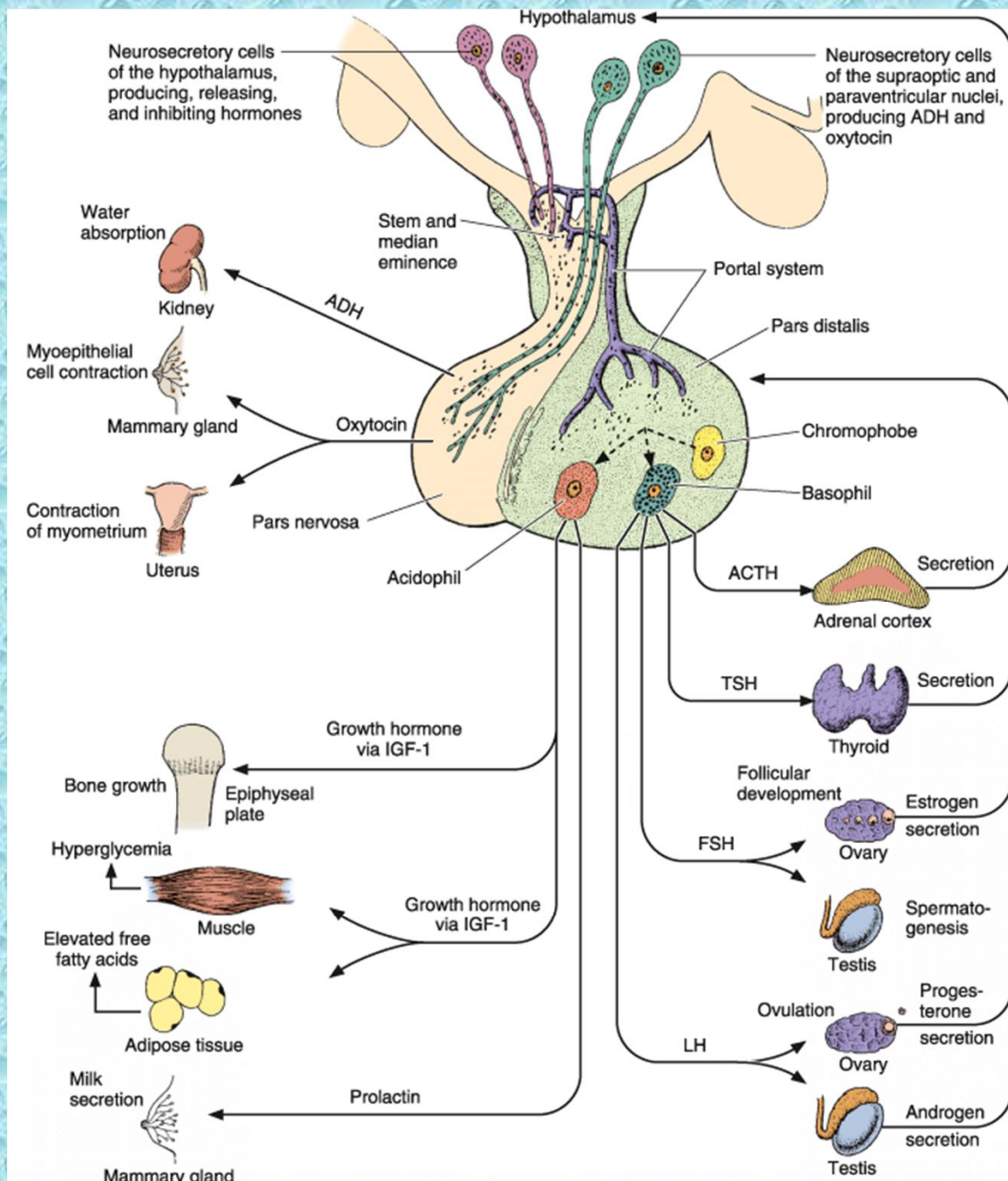


Типови на ендокрини клетки во аденохипофизата



Питуицити

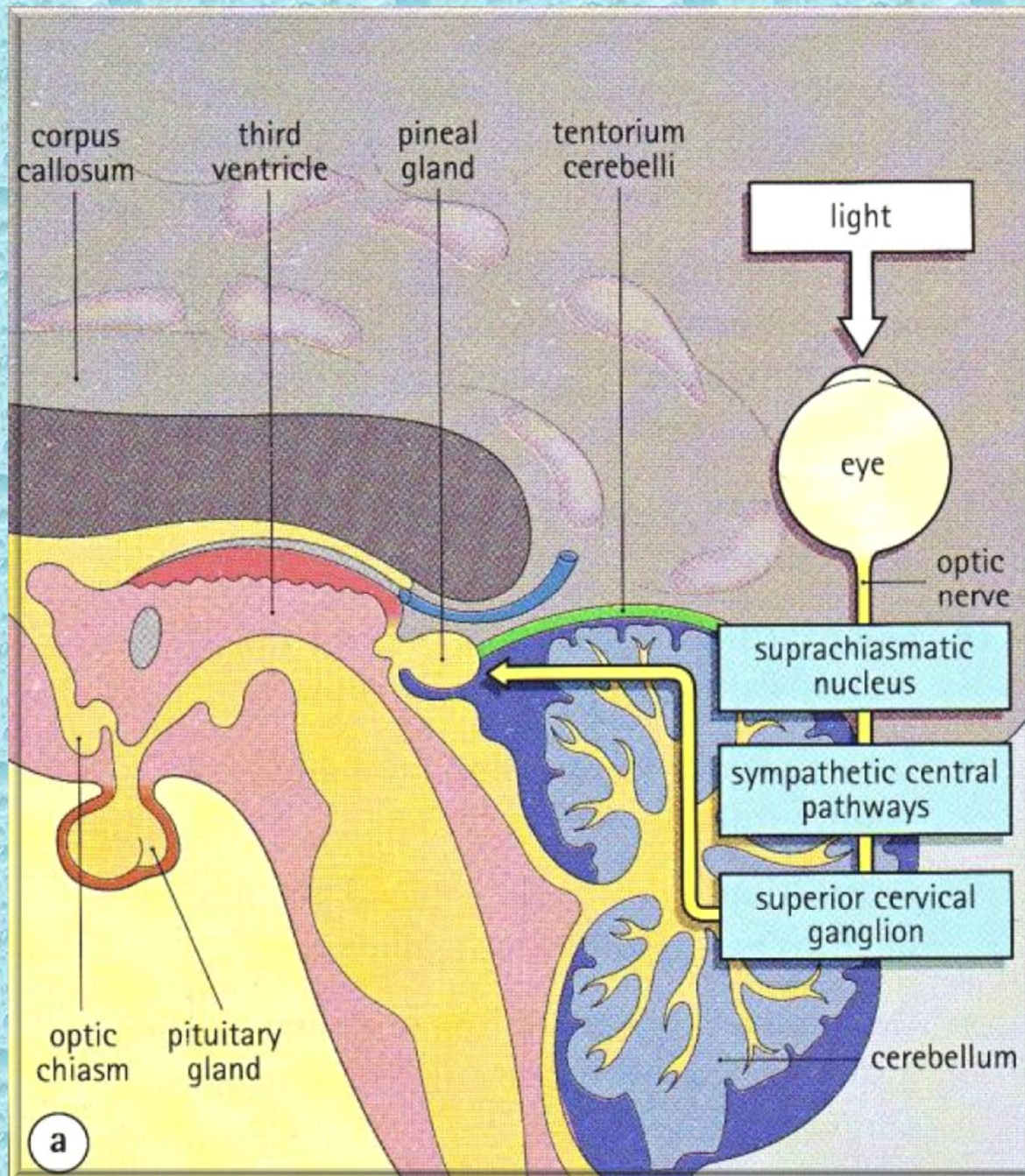
Неурохипофиза

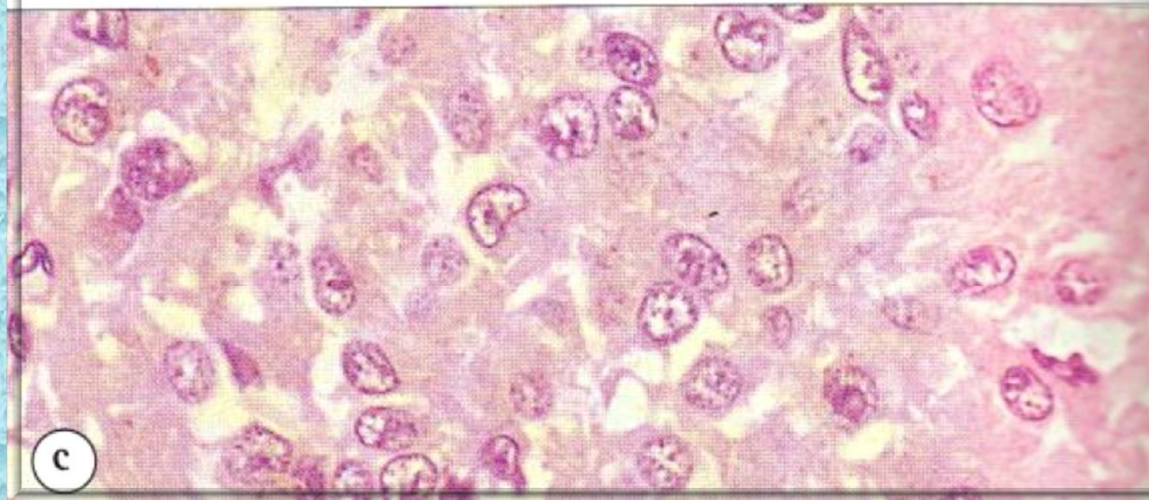
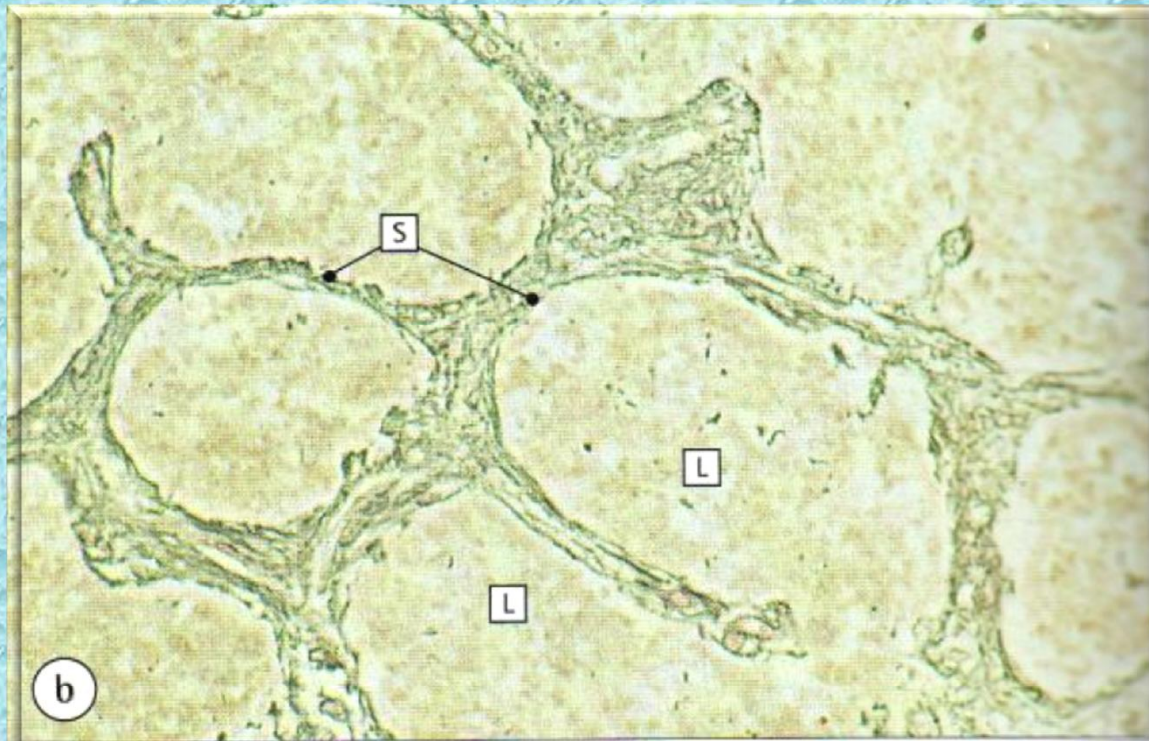


Ефектите на различните хипофизни хормони на целните органи и повратните (feedback) механизми кои го контролираат нивното лачење.



**Glandula pinealis, s.
epiphuyysis**

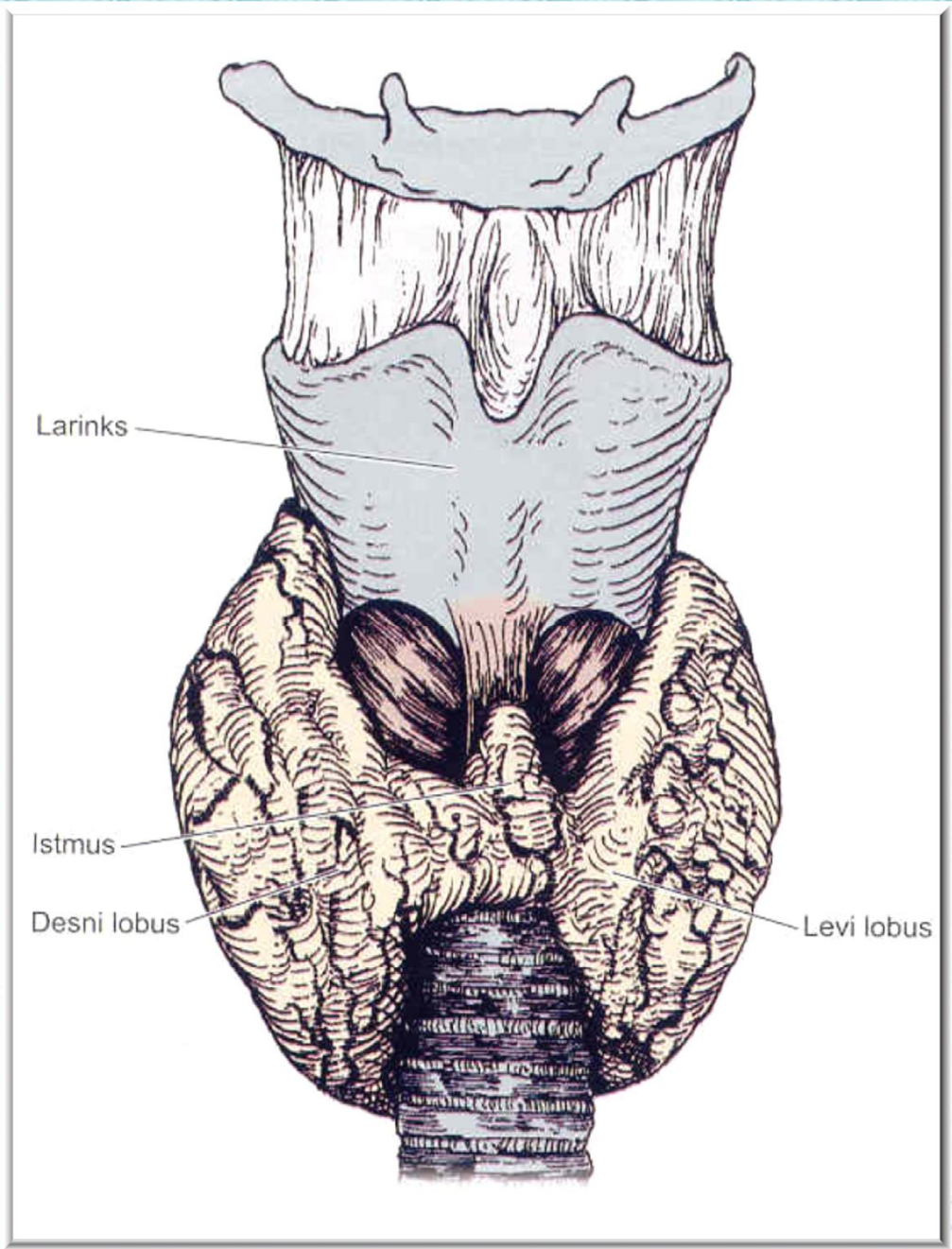




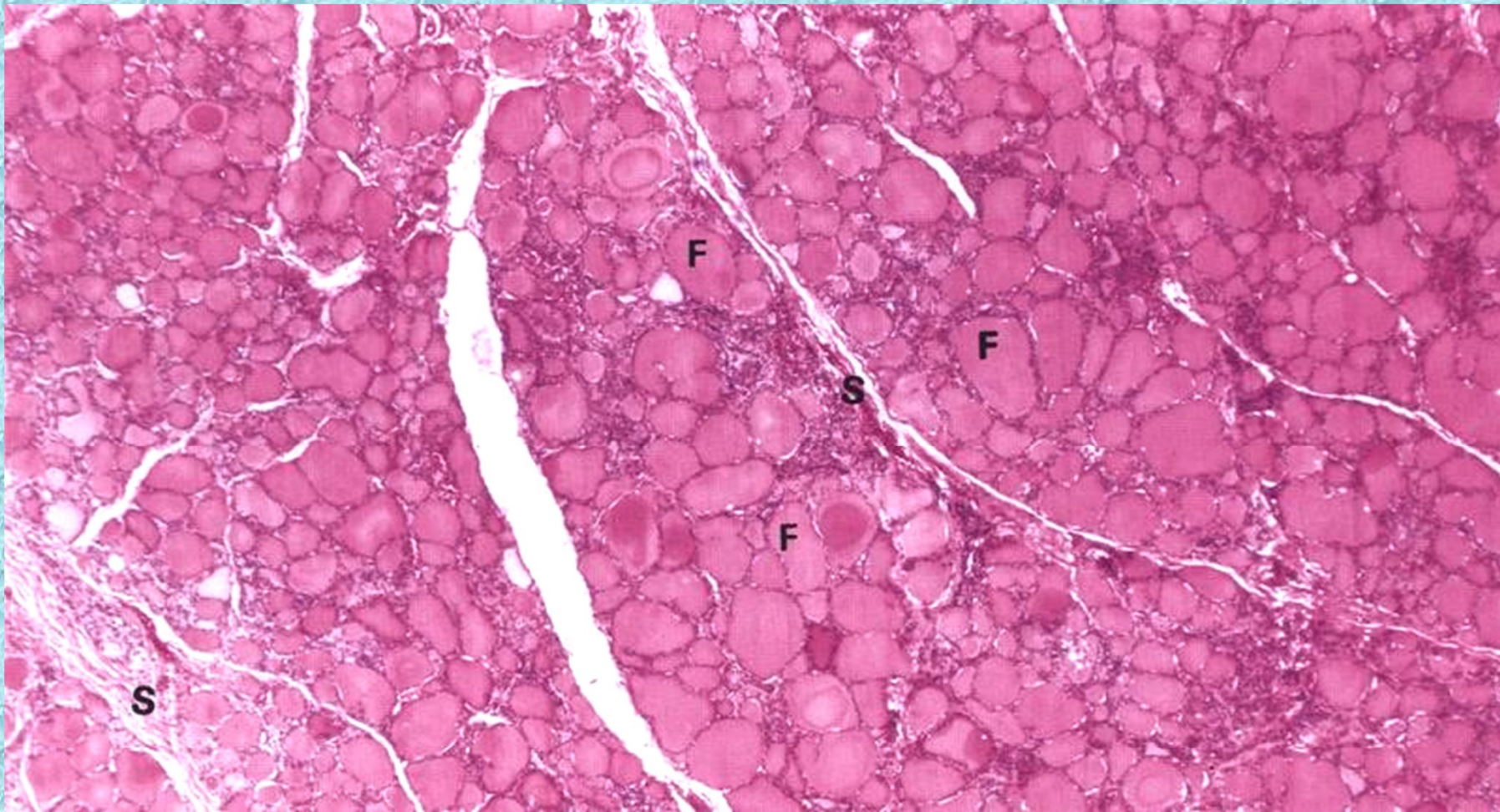
- S – септи
- L – лобули од пинеалоцити



Glandula thyreoidea



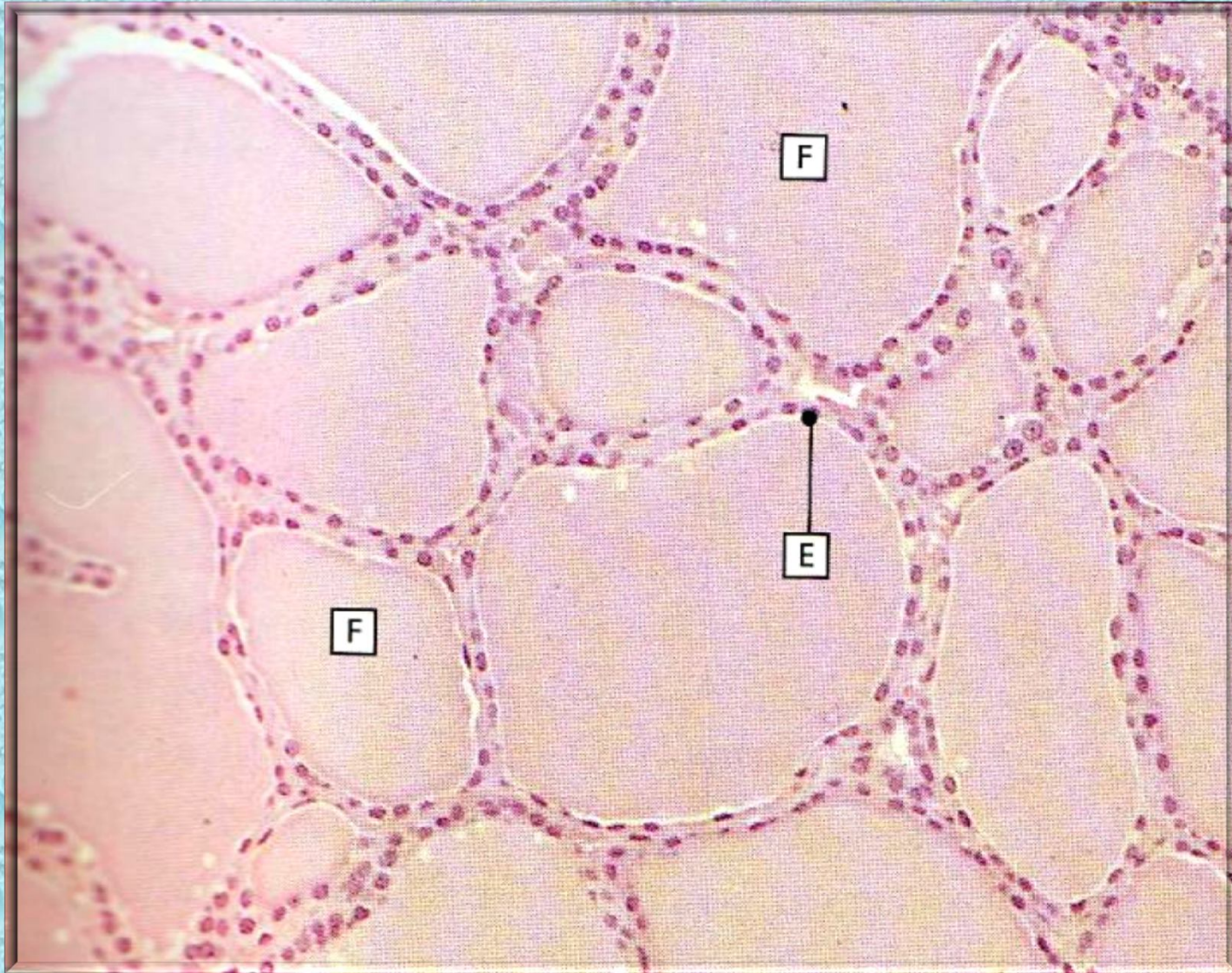
Панорамична микрофотографија на glandula thyreoidea



□ S – септи

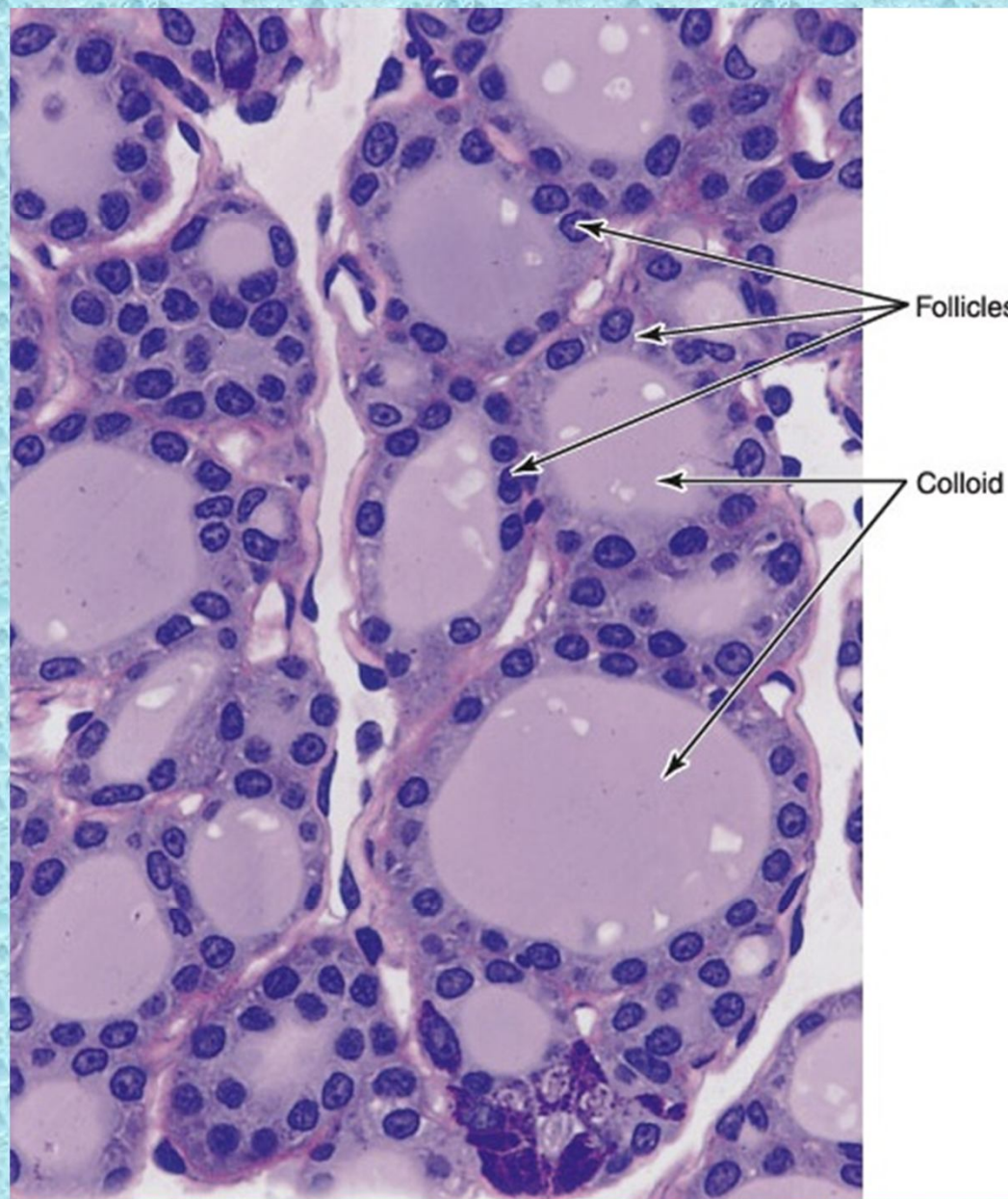
□ F – тиреоидни фоликули

Glandula thyreoidea (поголемо зголемување)



- E – фоликуларен епител - тиреоцити
- F – тиреоидни фоликули исполнети со колоид

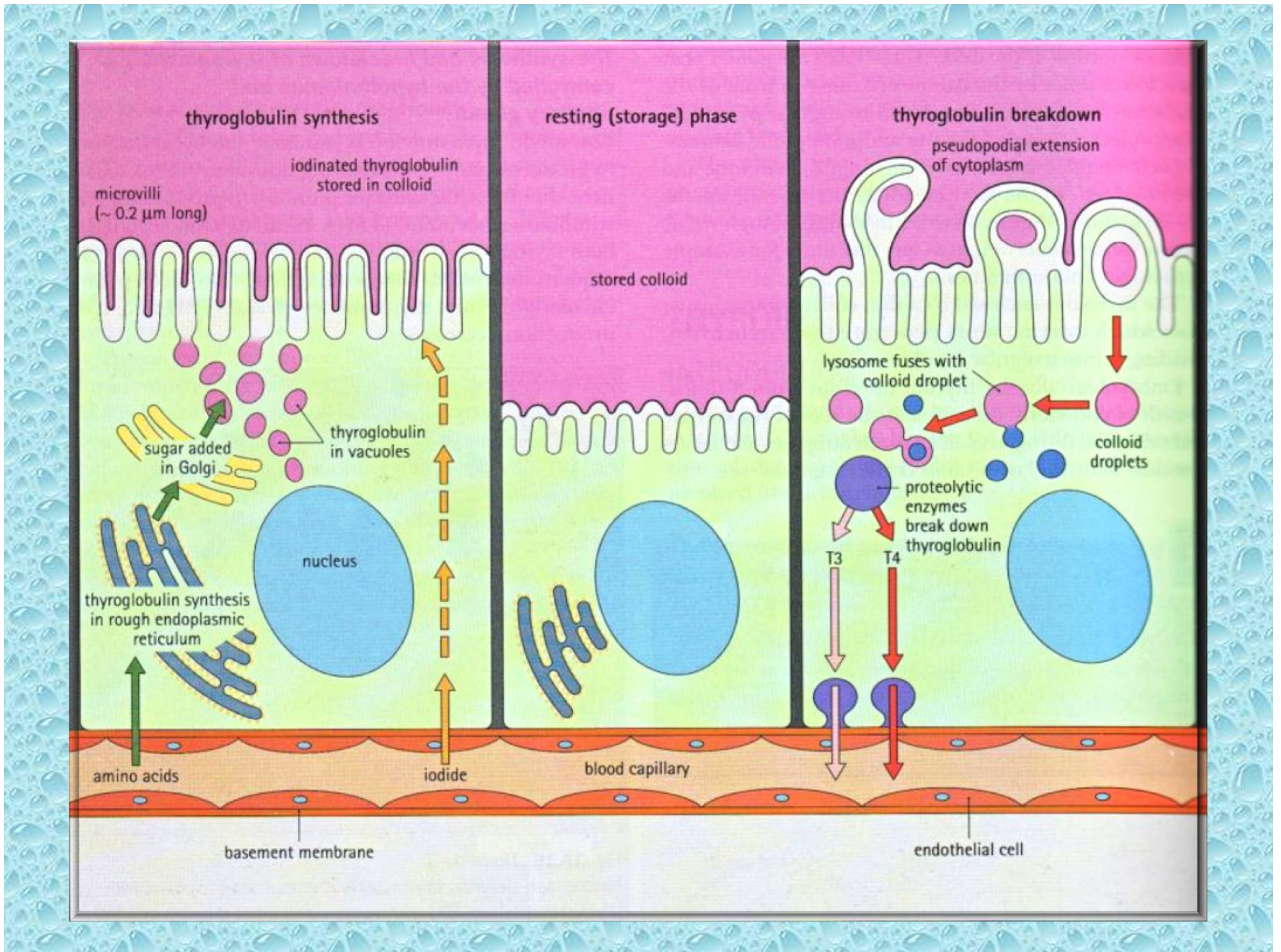
Glandula thyreoidea (поголемо зголемување)

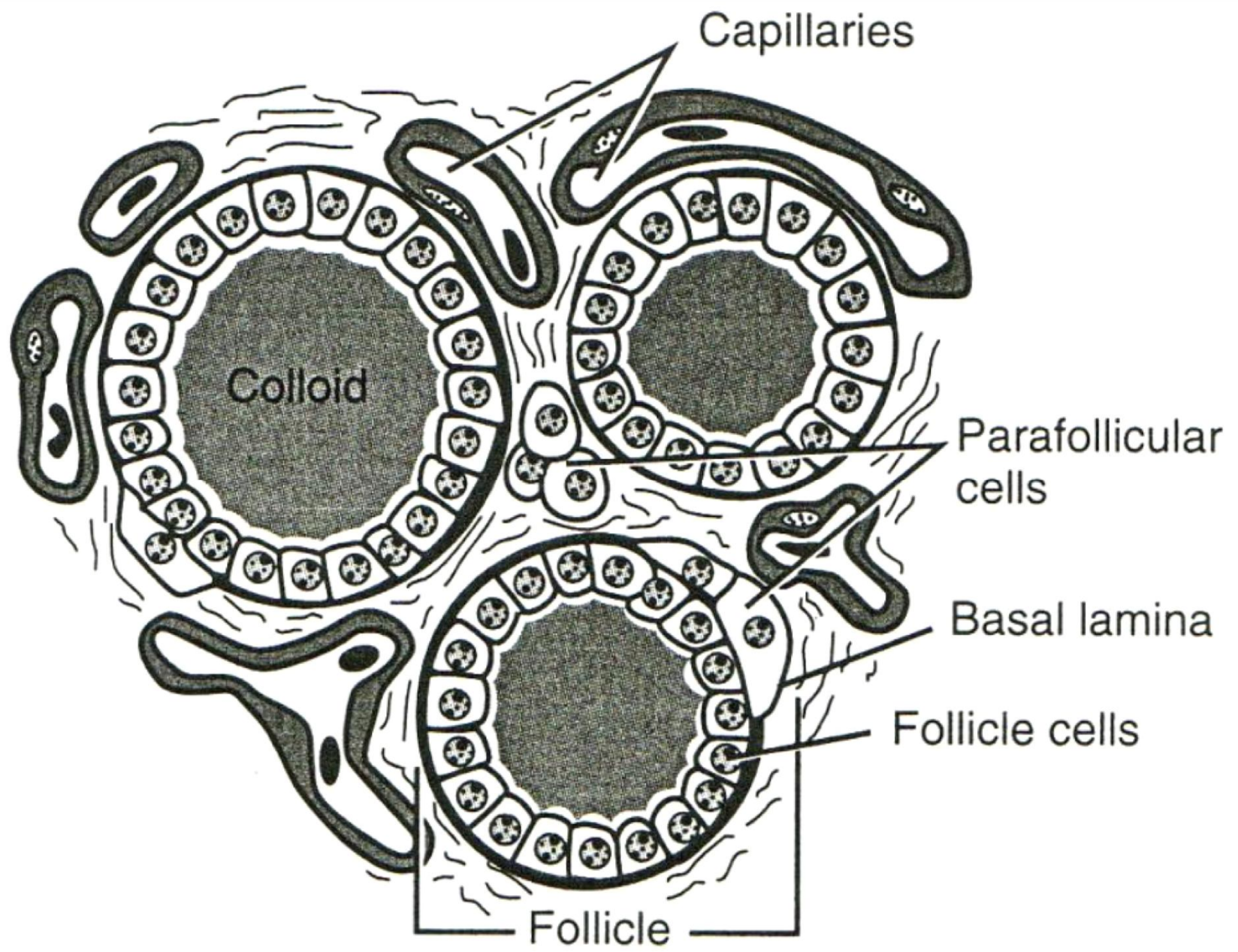


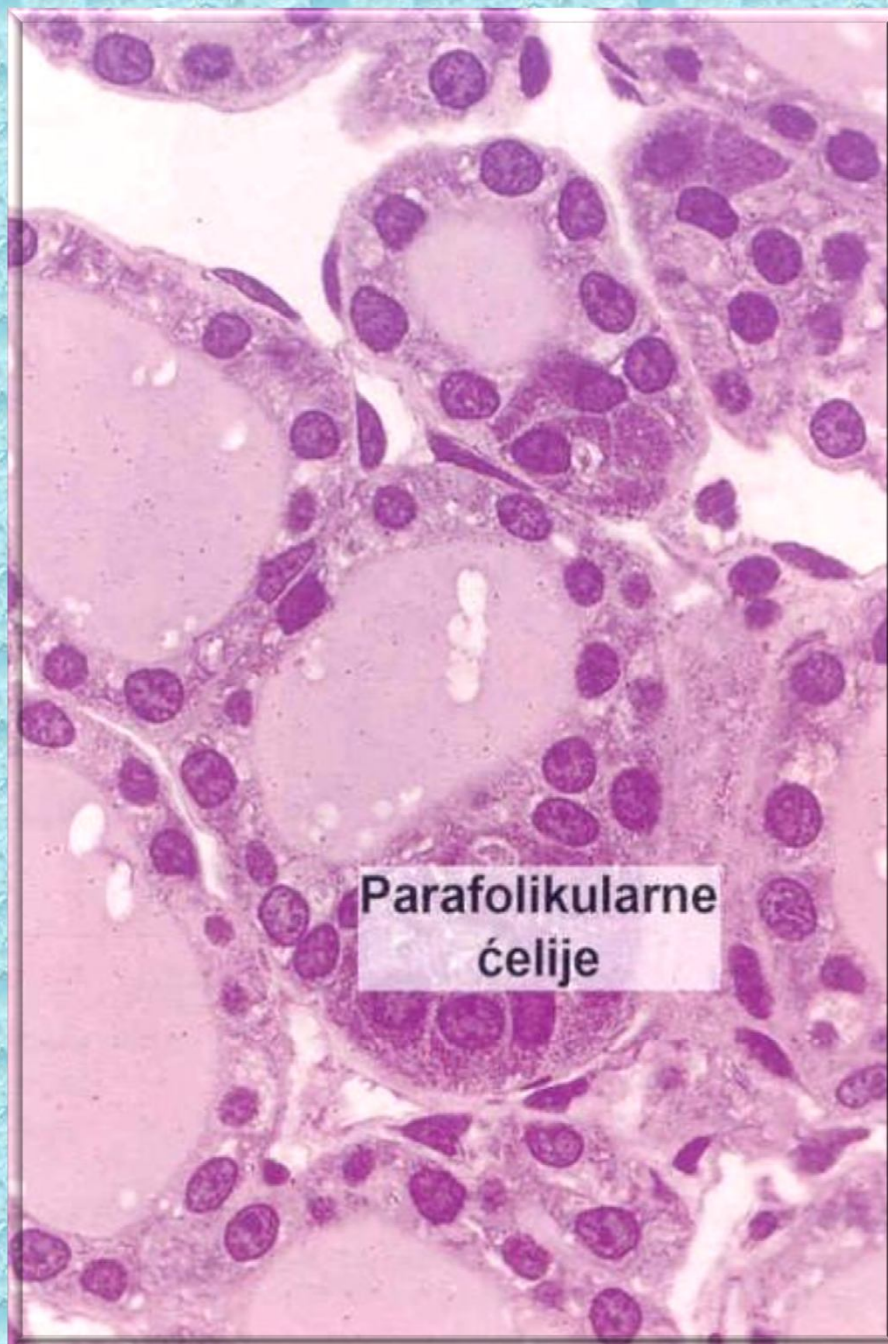
Дел од тиреоиден фоликул



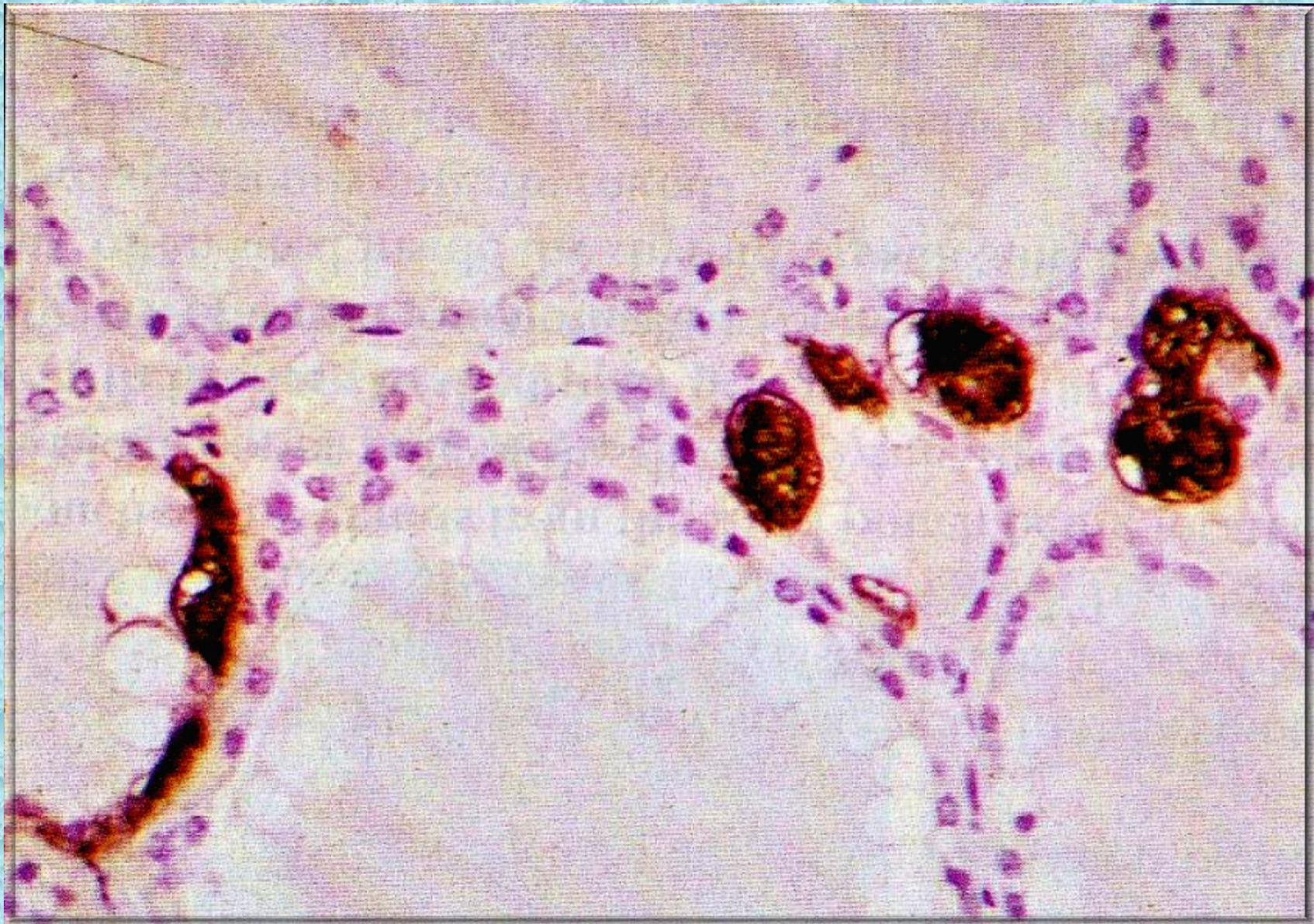
- TE – фоликуларен епител - тиреоцити
- BM – базална мембрана
- TC – колоид
- C – капилар







Parafolikularne
ćelije



Тиреоидни С – клетки
(имунохистохемиско бојење)

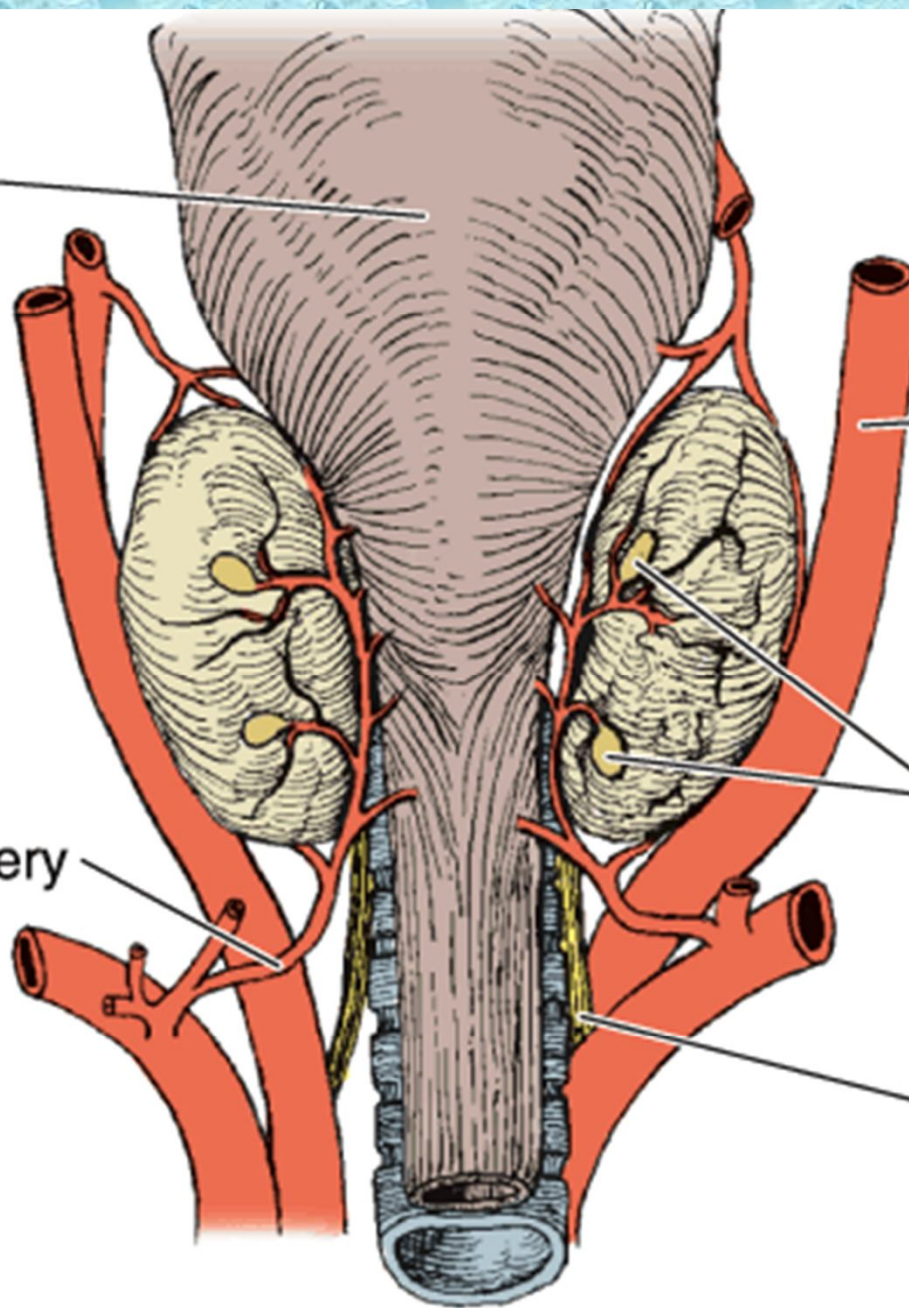


Тиреоидни С – клетки
(TEM)



Glandula parathyroidea

Pharynx

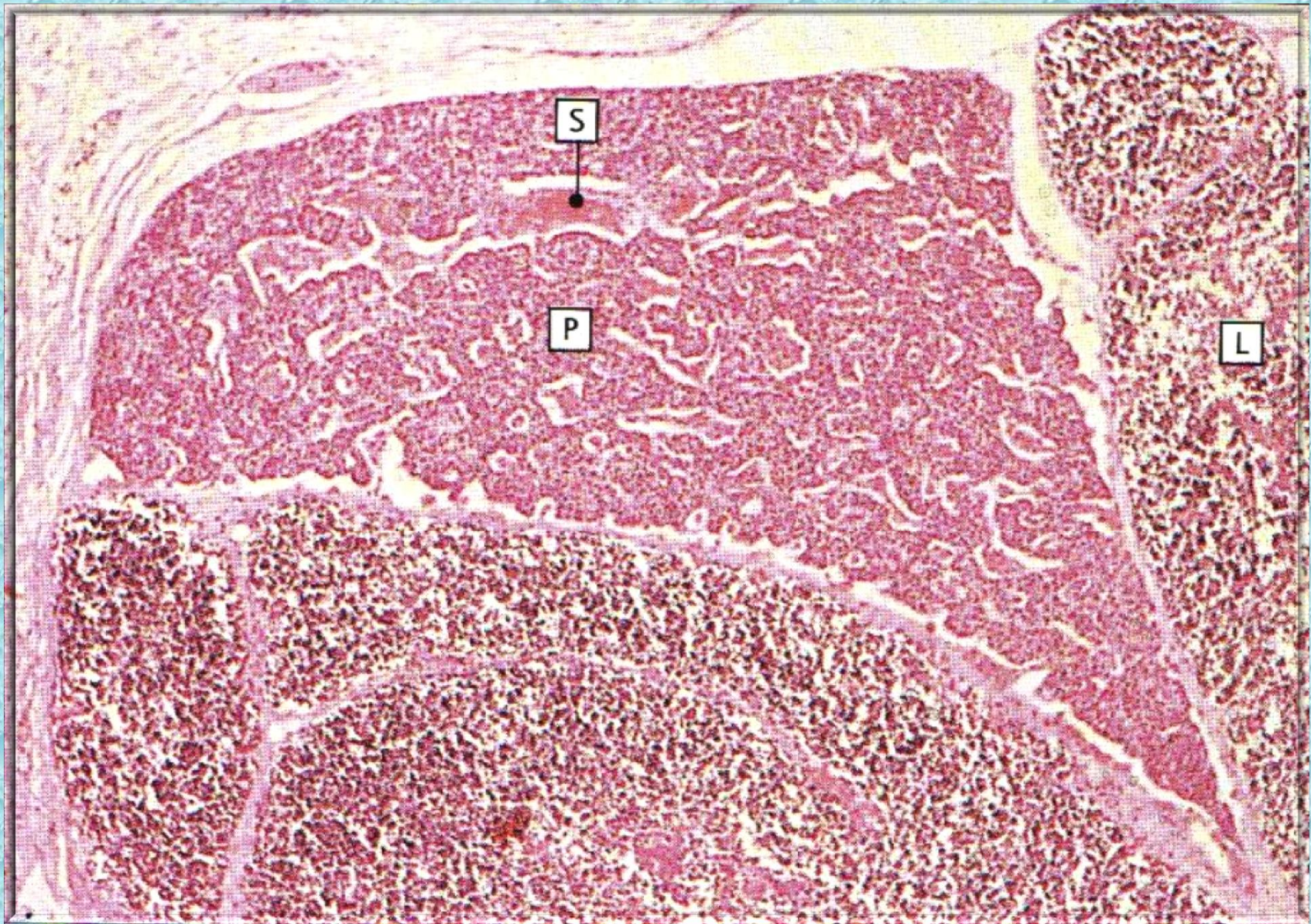


Common
carotid artery

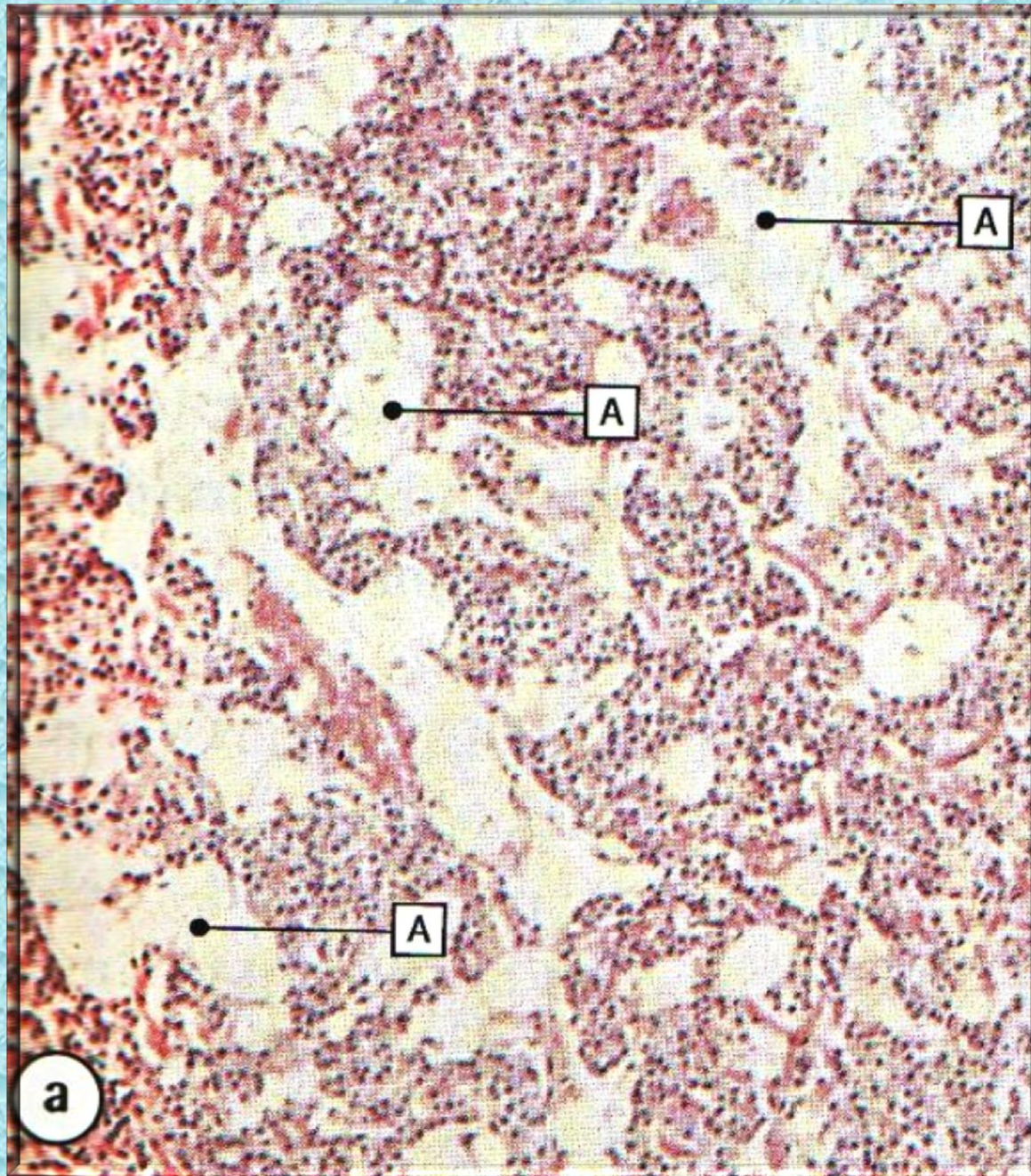
Inferior
thyroid artery

Right
parathyroid glands

Recurrent
laryngeal nerve

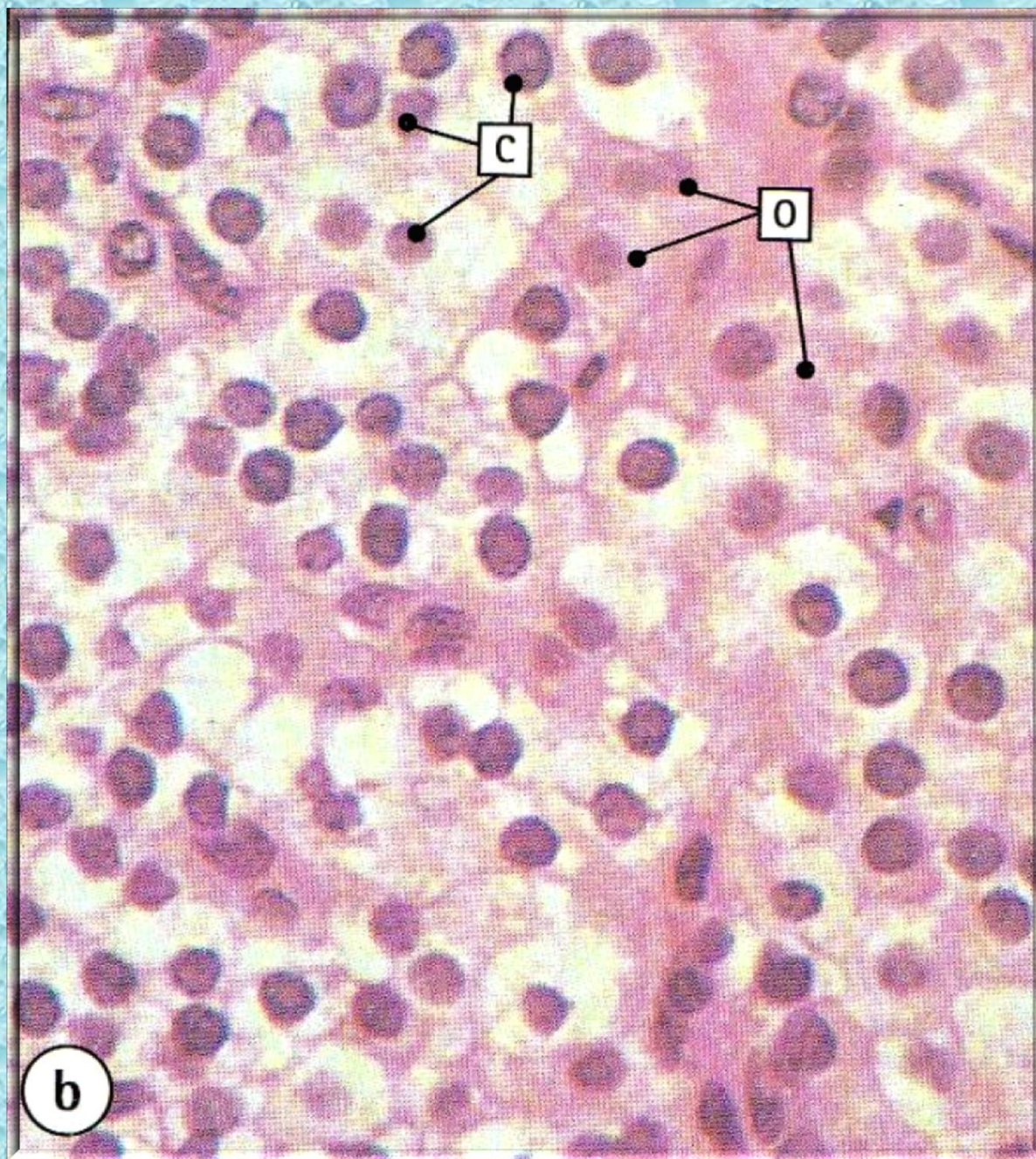


- P – паратиреоидна жлезда
- S – септа
- L – лимфоидно ткиво




Паратиреоидна жлезда
панорамична
микрофотографија

□ A – адипоцити

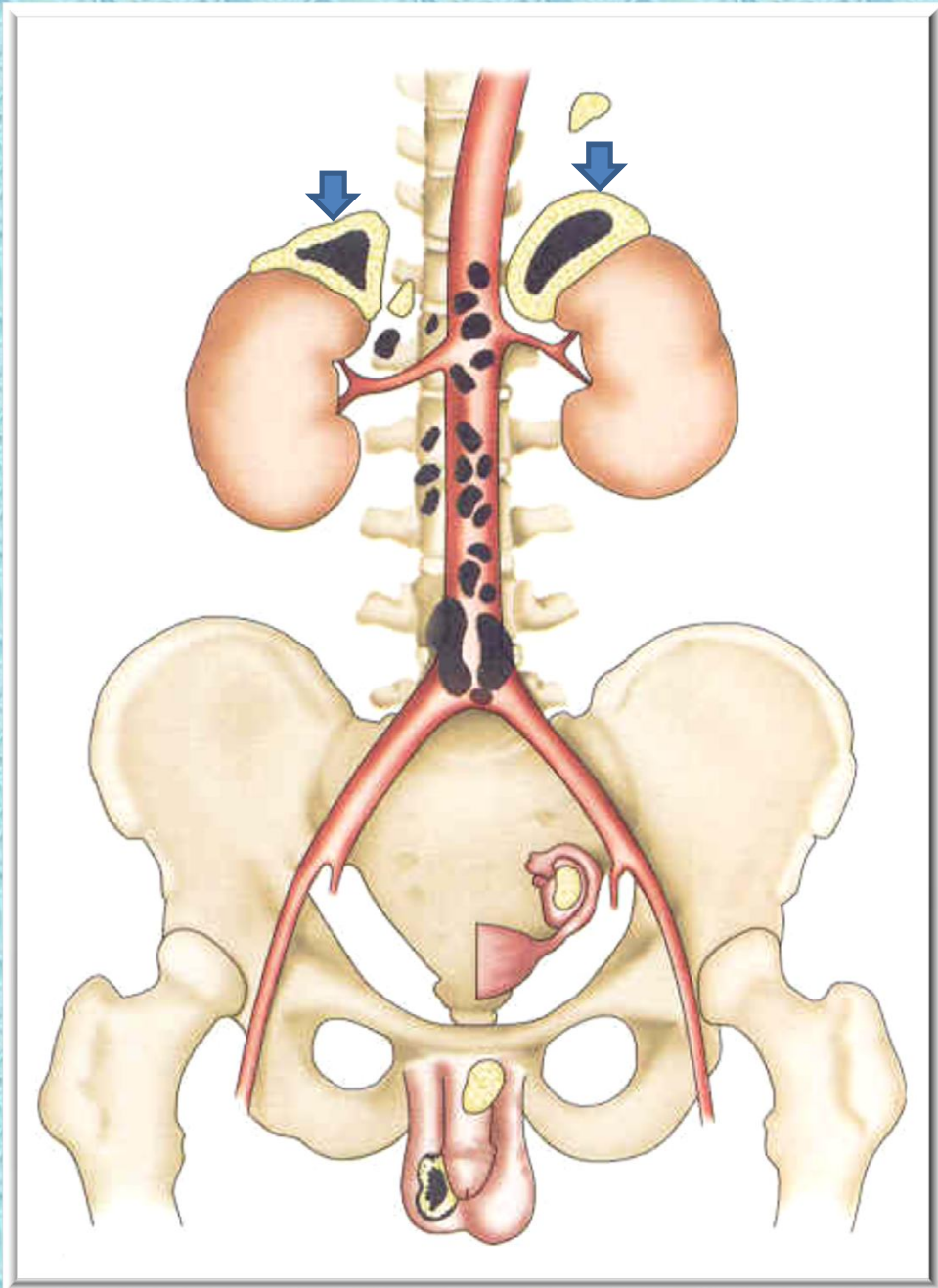


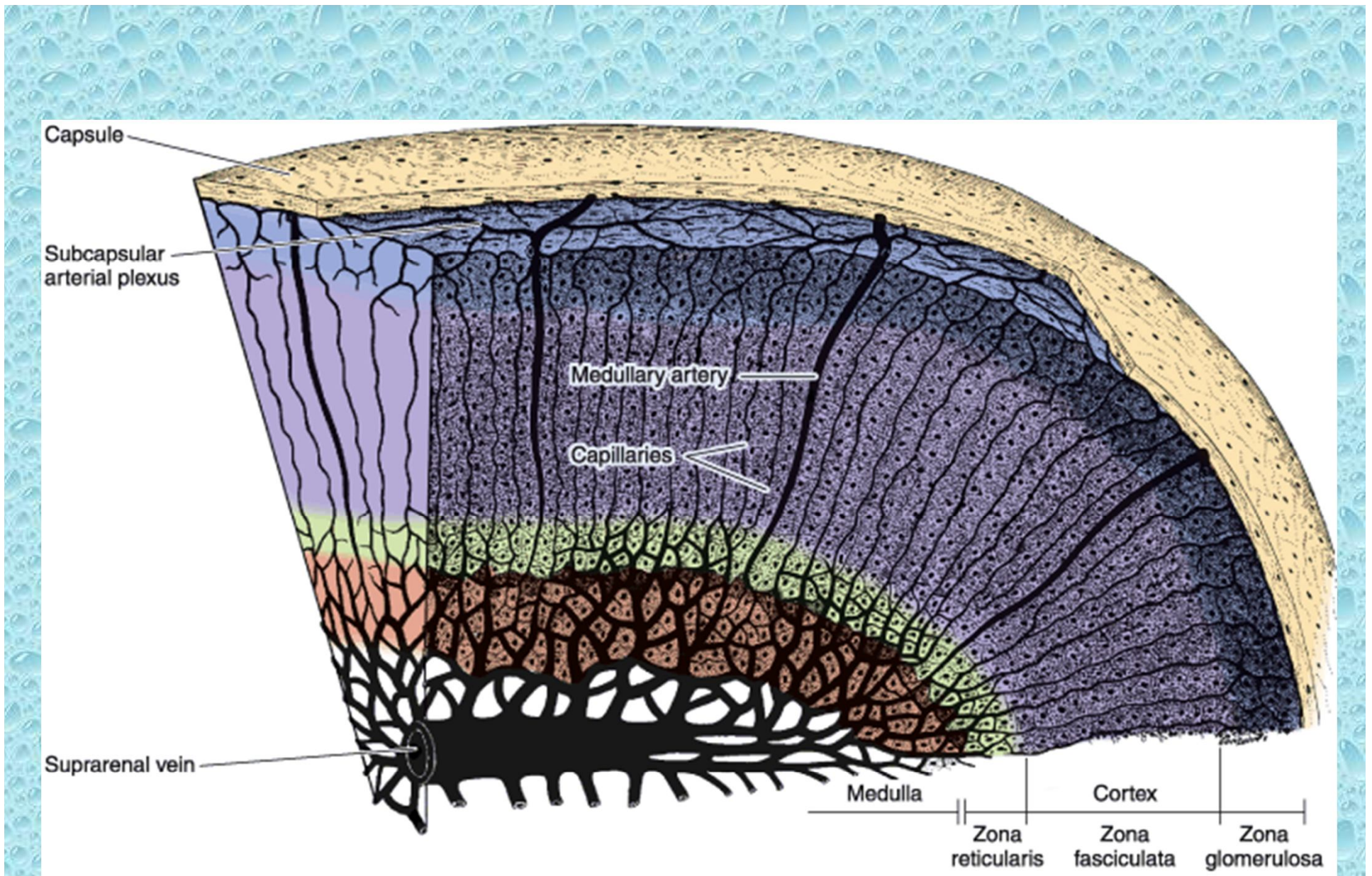
Паратиреоидна жлезда
поголемо зголемување

- C – главни клетки
- O – оксифилни клетки

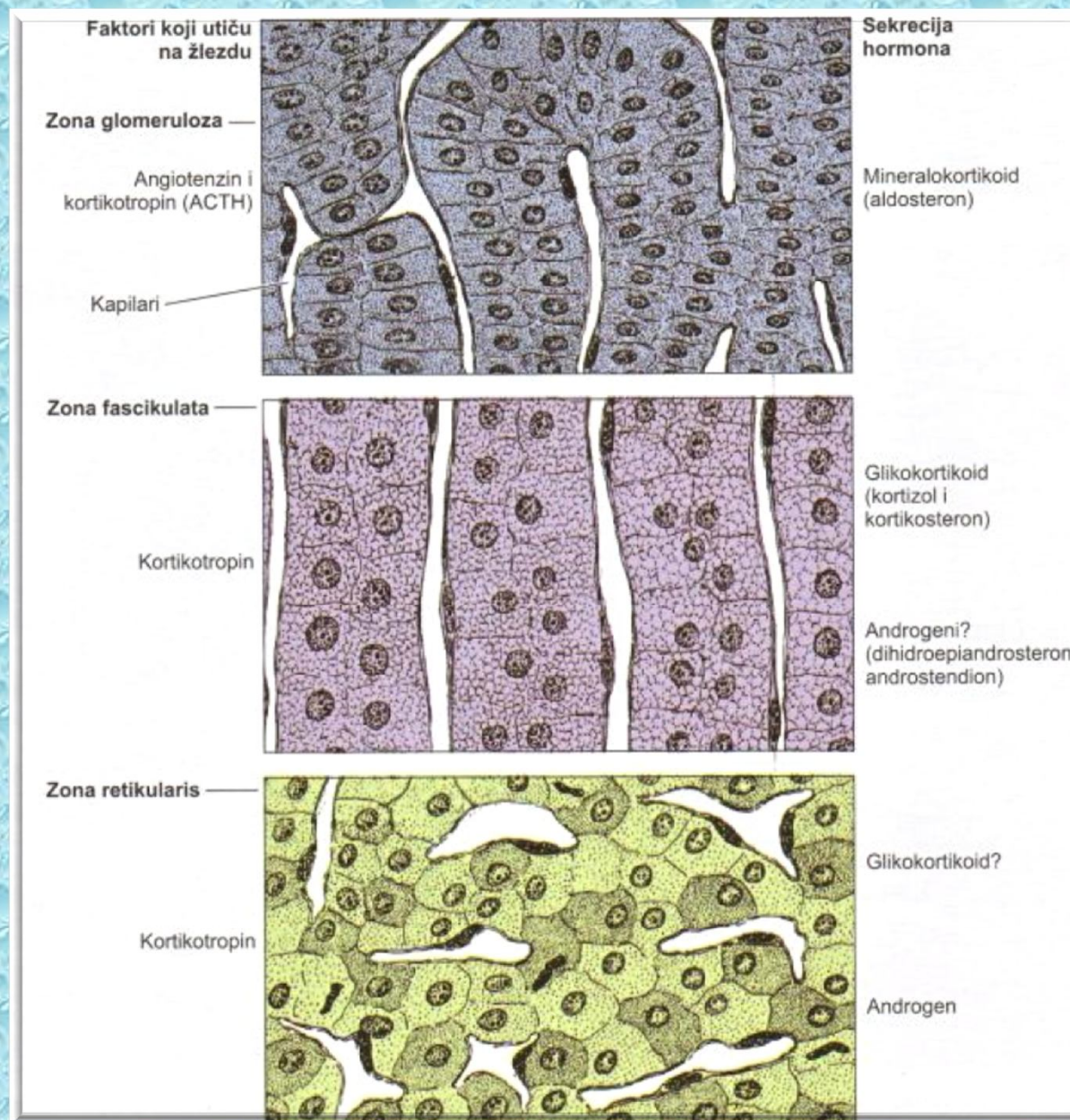


Glandula suprarenalis

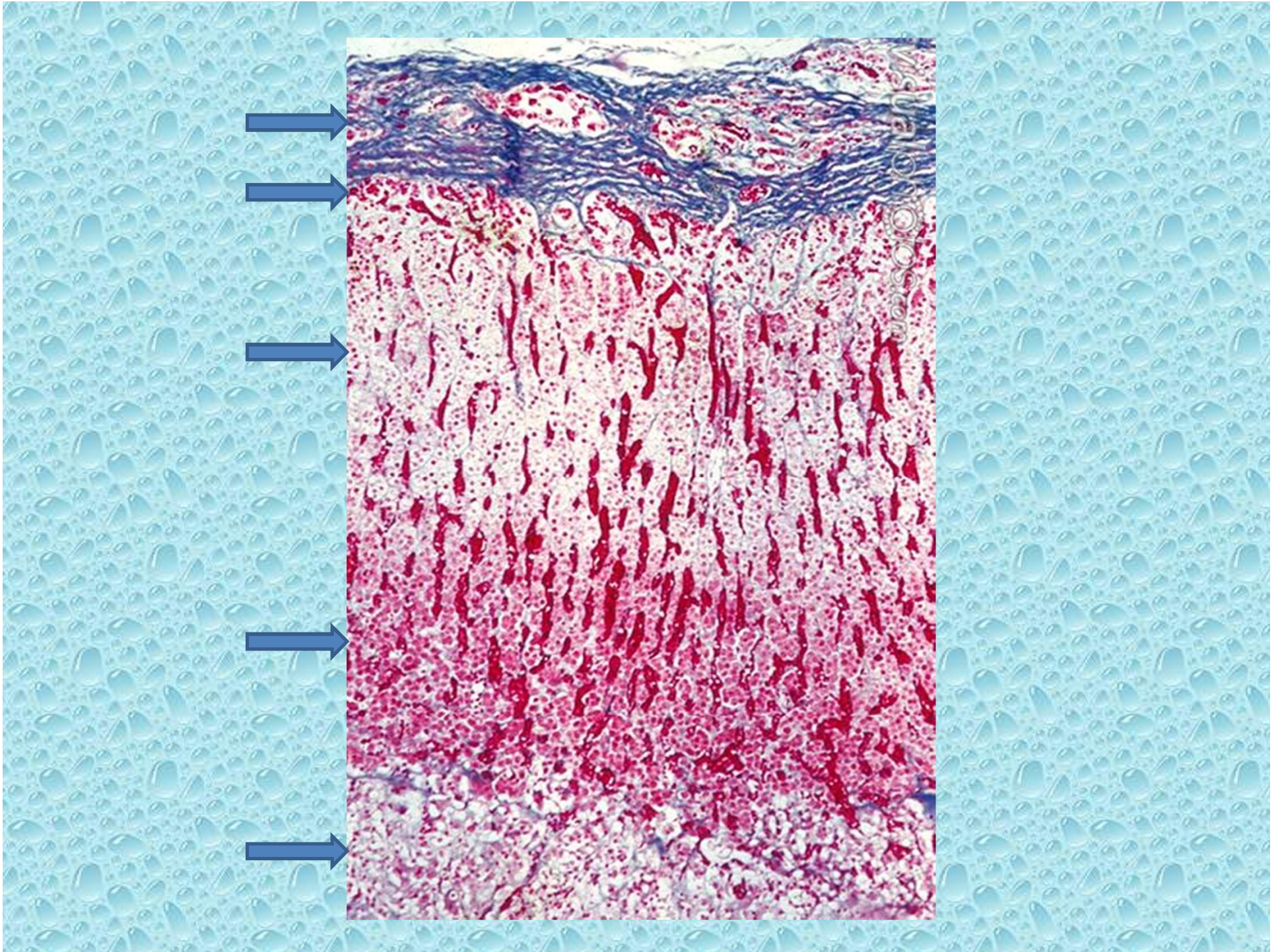


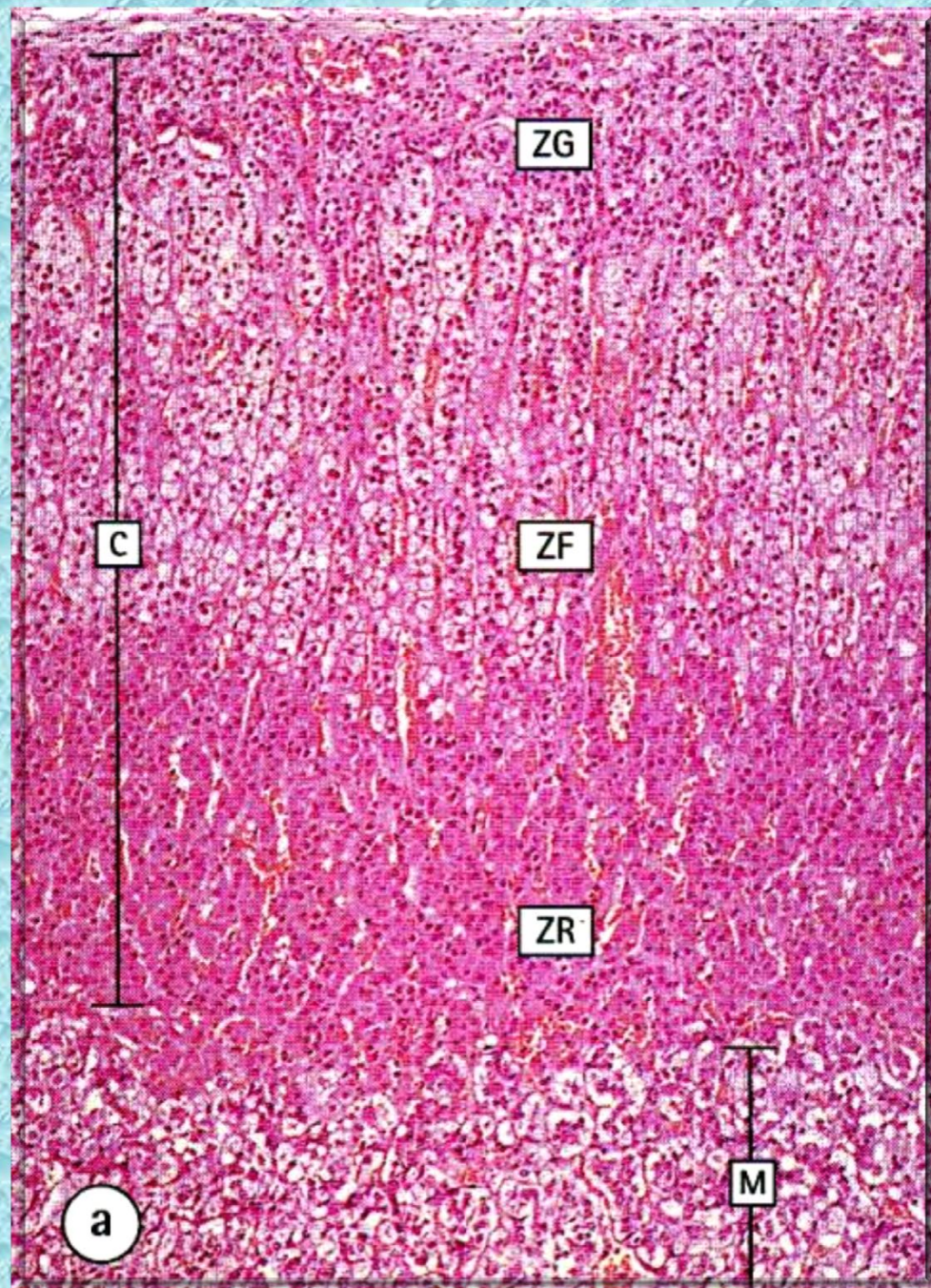


Општа архитектура и васкуларизација на надбубрежната жлезда

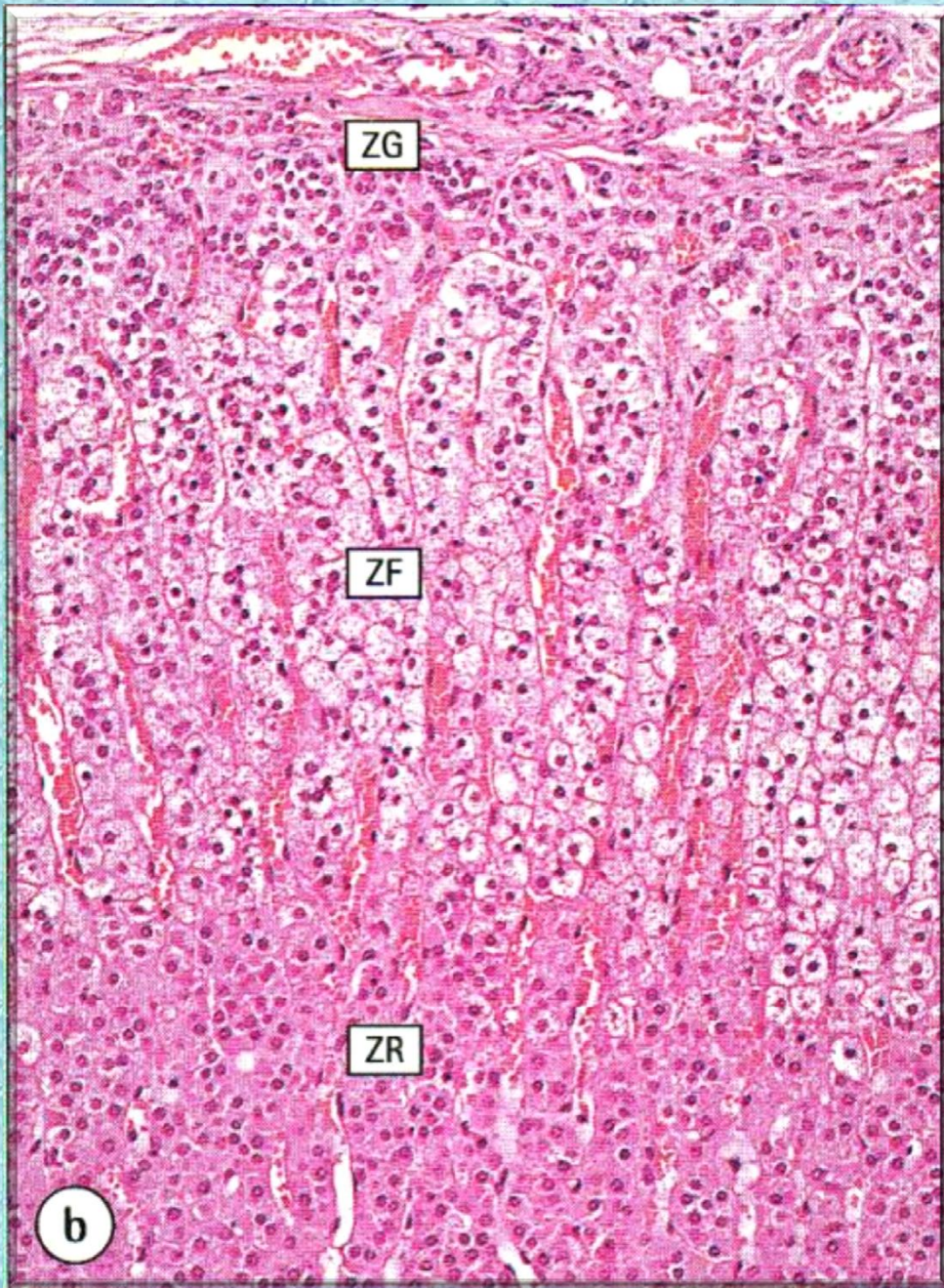


Кора на надбубрежната жлезда – цртеж



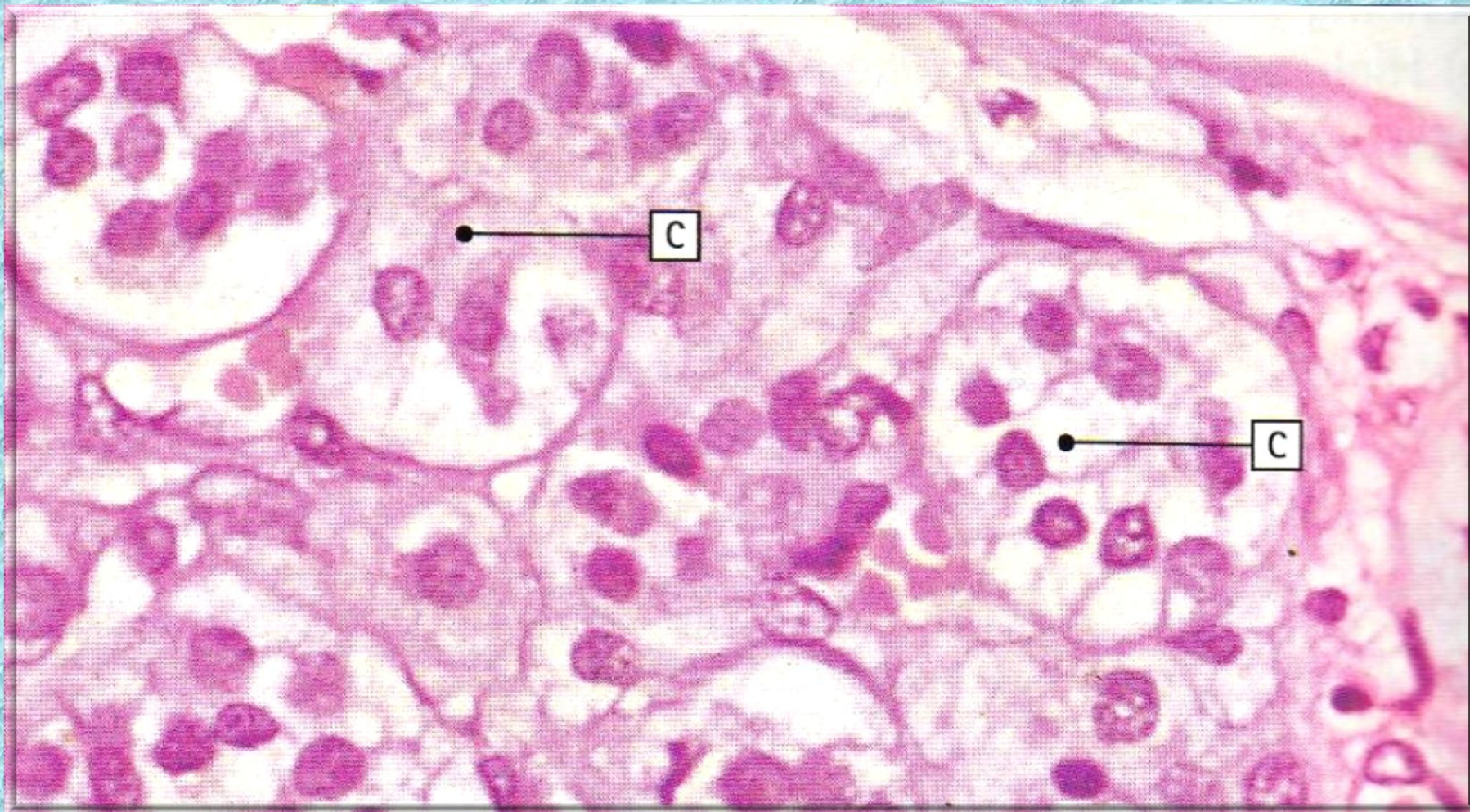


- C – cortex
- ZG – zona glomerulosa
- ZF – zona fasciculata
- ZR – zona reticularis
- M – medulla

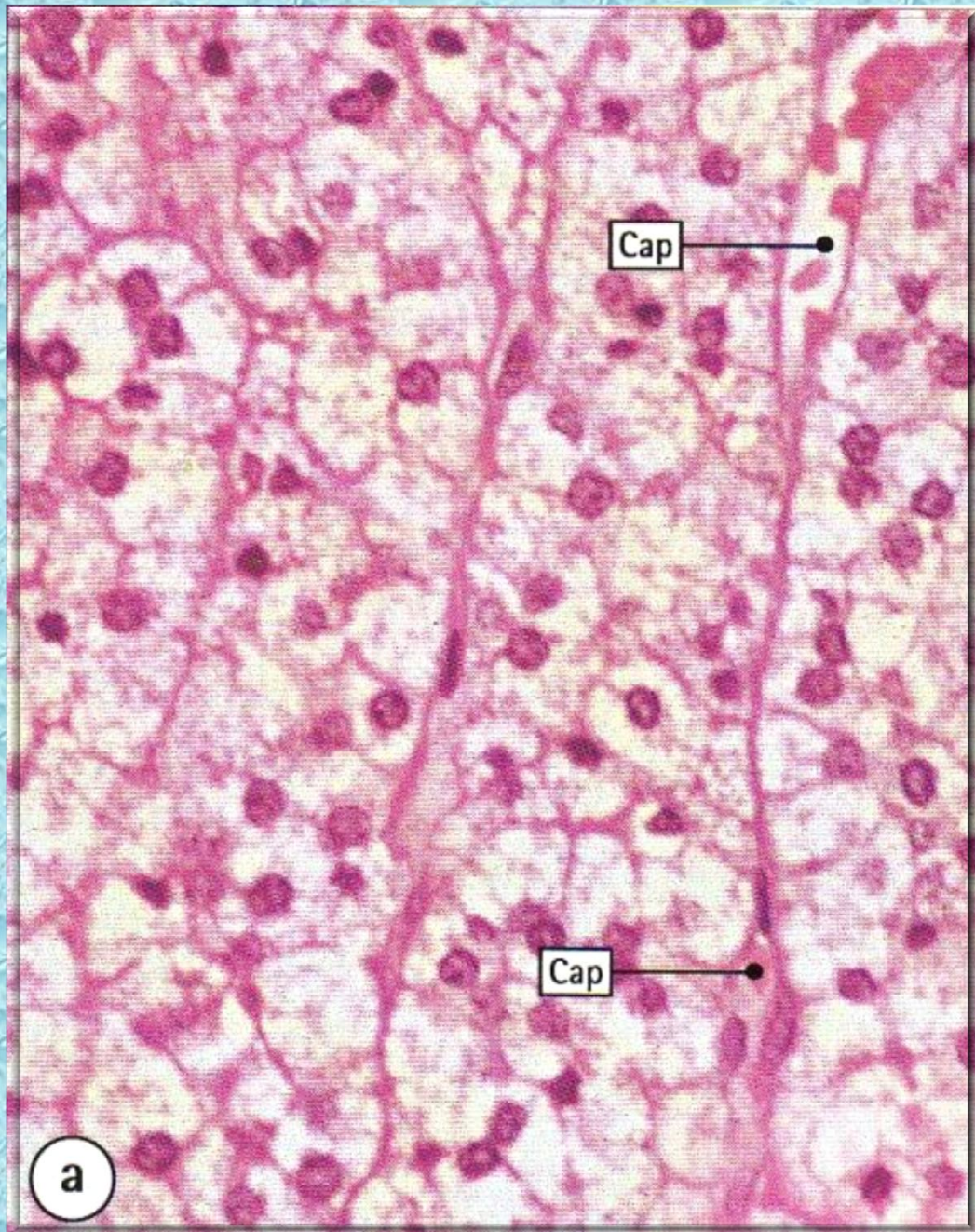


- ZG – zona glomerulosa
- ZF – zona fasciculata
- ZR – zona reticularis

Zona glomerulosa

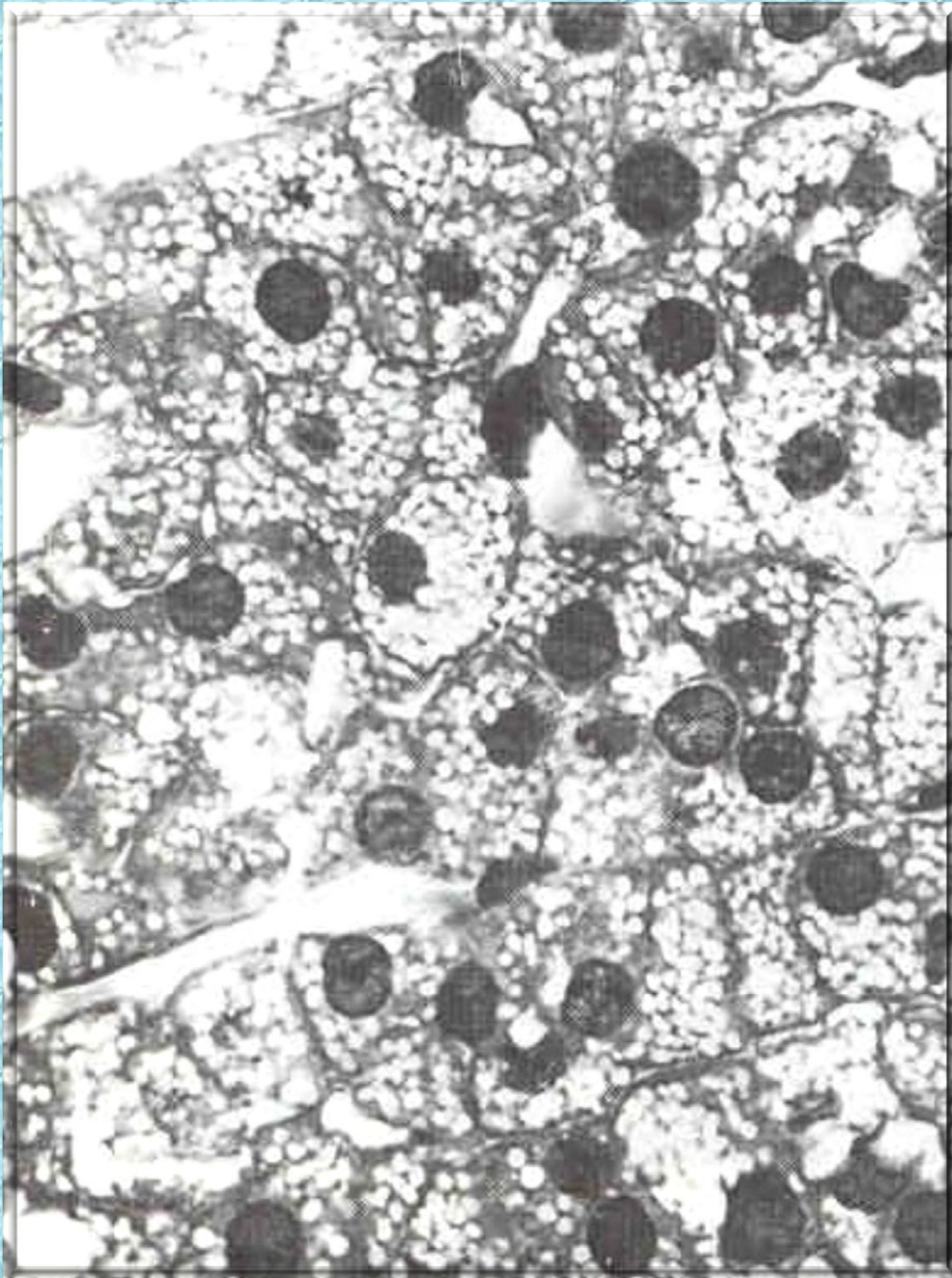


□ C – клетки групирани во топчести формации



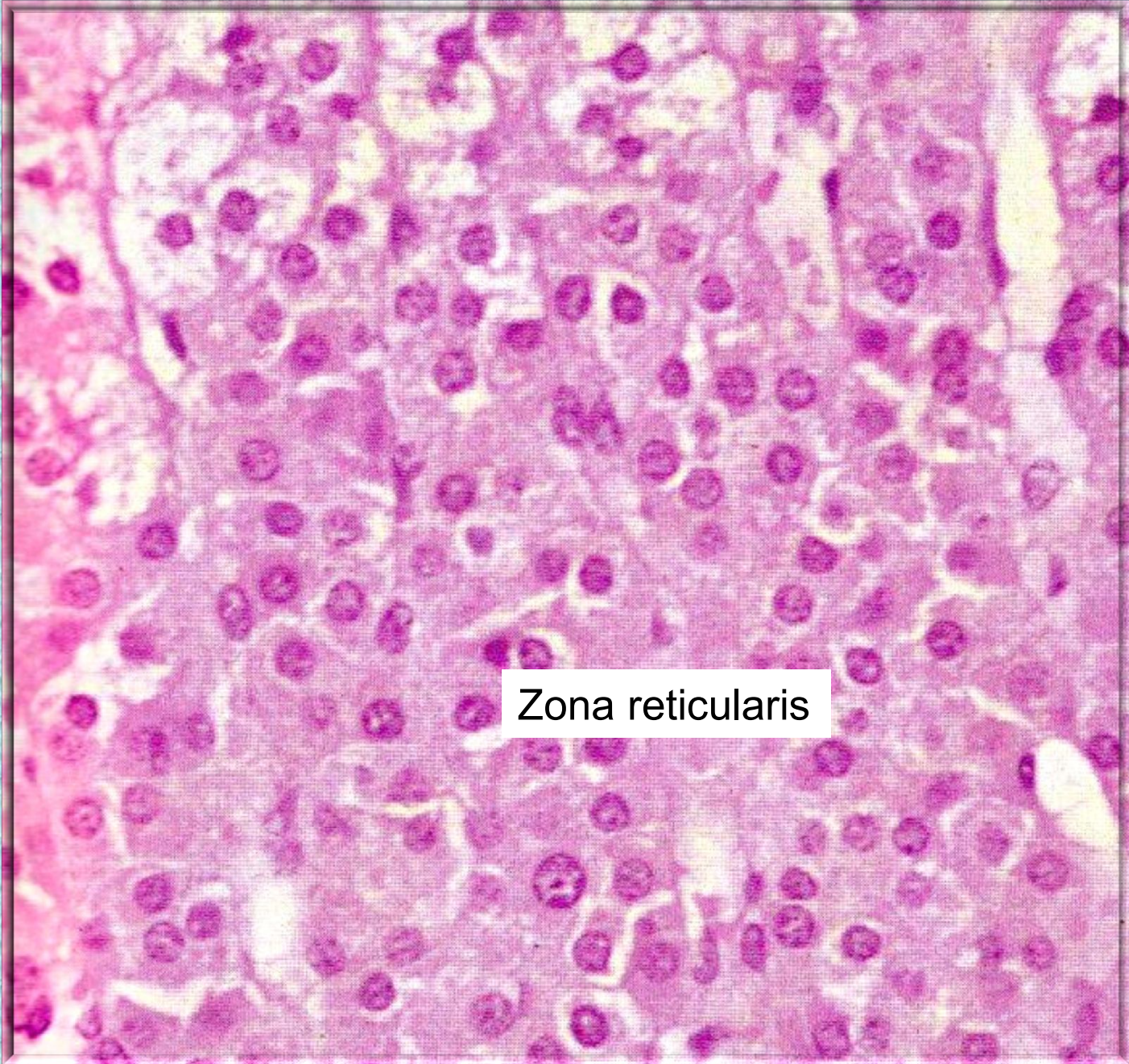
Zona fasciculata

Cap – капилари



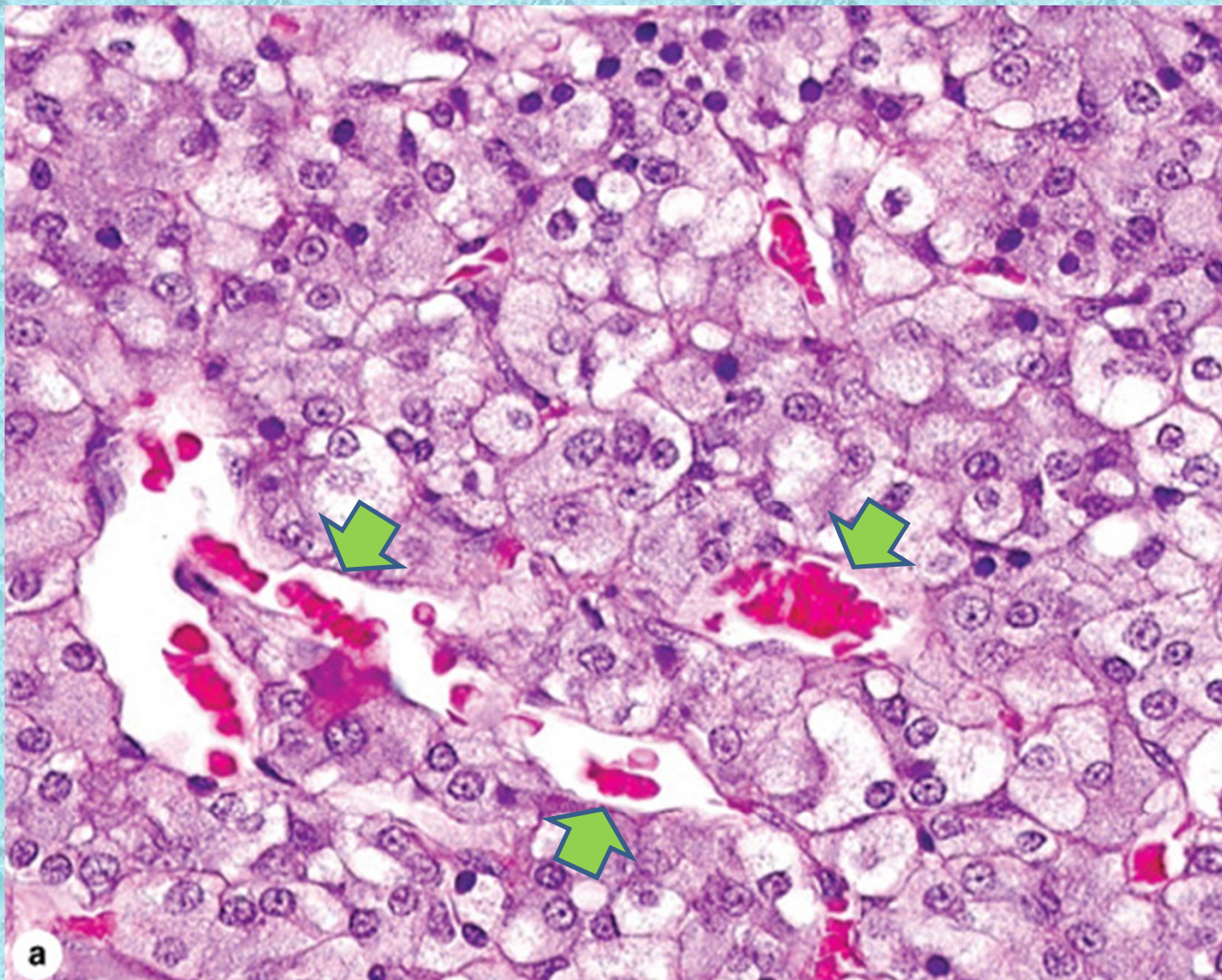
Zona fasciculata

Клетките на zona fasciculata се нарекуваат и спонгиоцити (имаат сунгерест изглед поради присуството на бројни вакуоли)



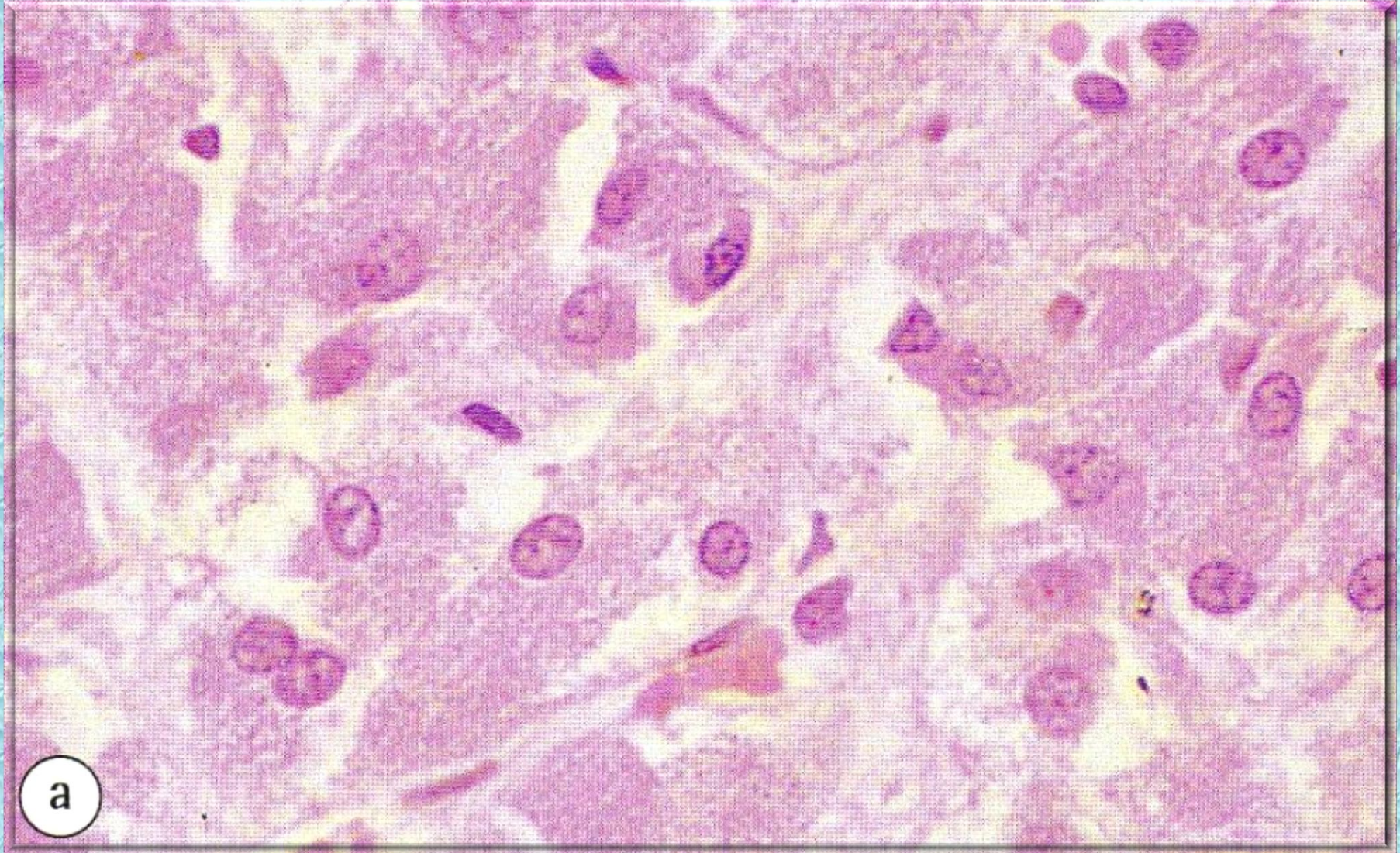
Zona reticularis

Medulla на надбубрежната жлезда



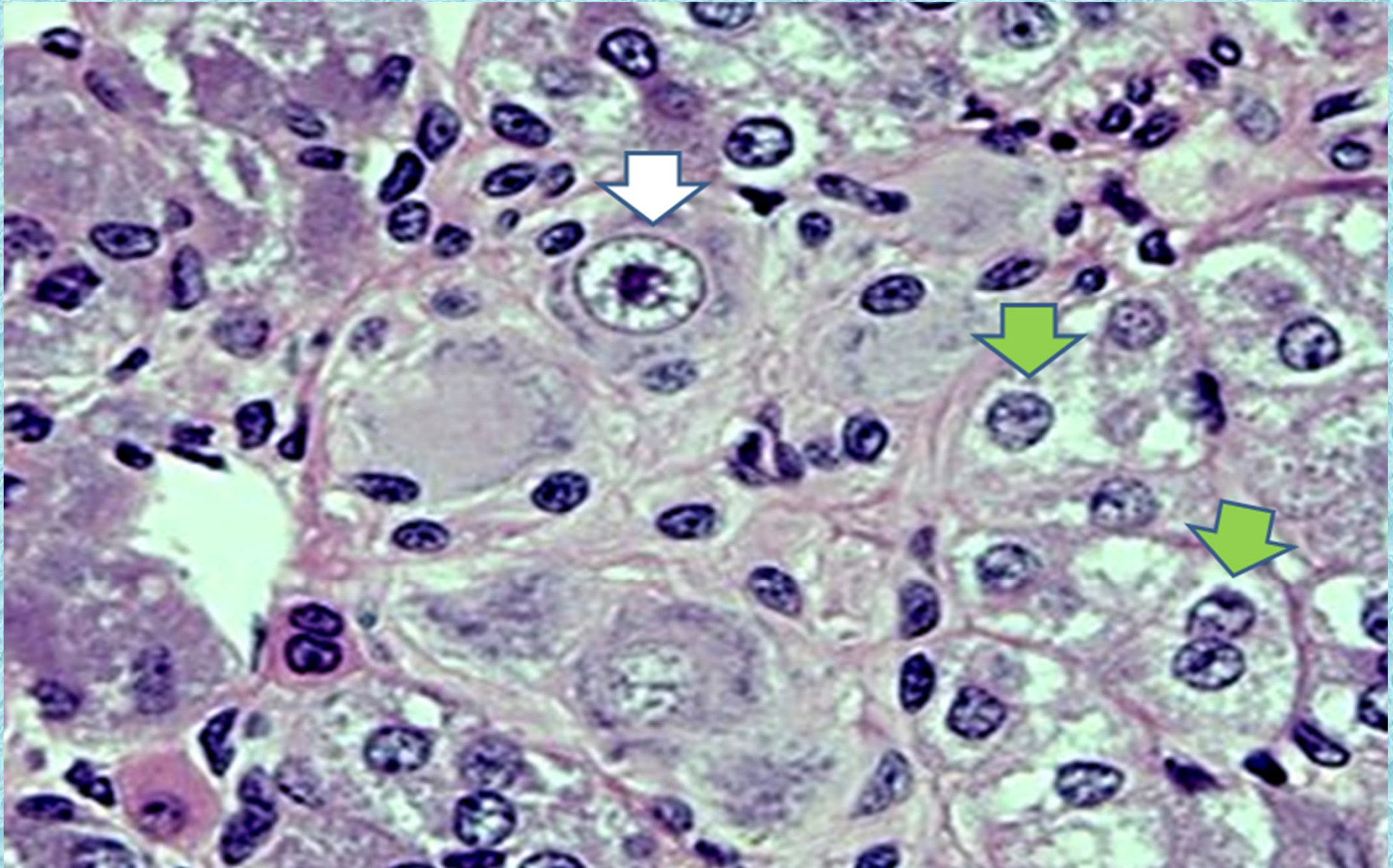
Микрофотографија на адреналните медуларни клетки и обилно присуство на синусоидни капилари

Medulla на надбубрежната жлезда (поголемо зголемување)

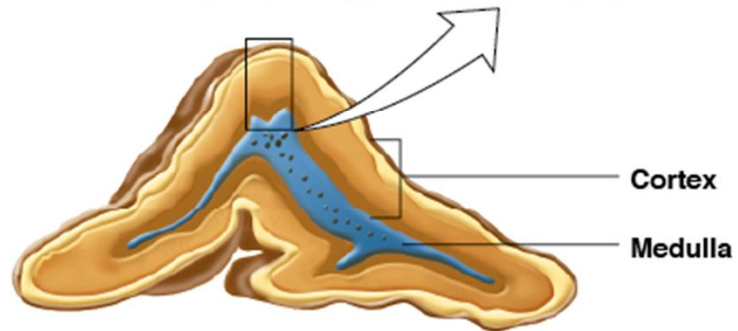
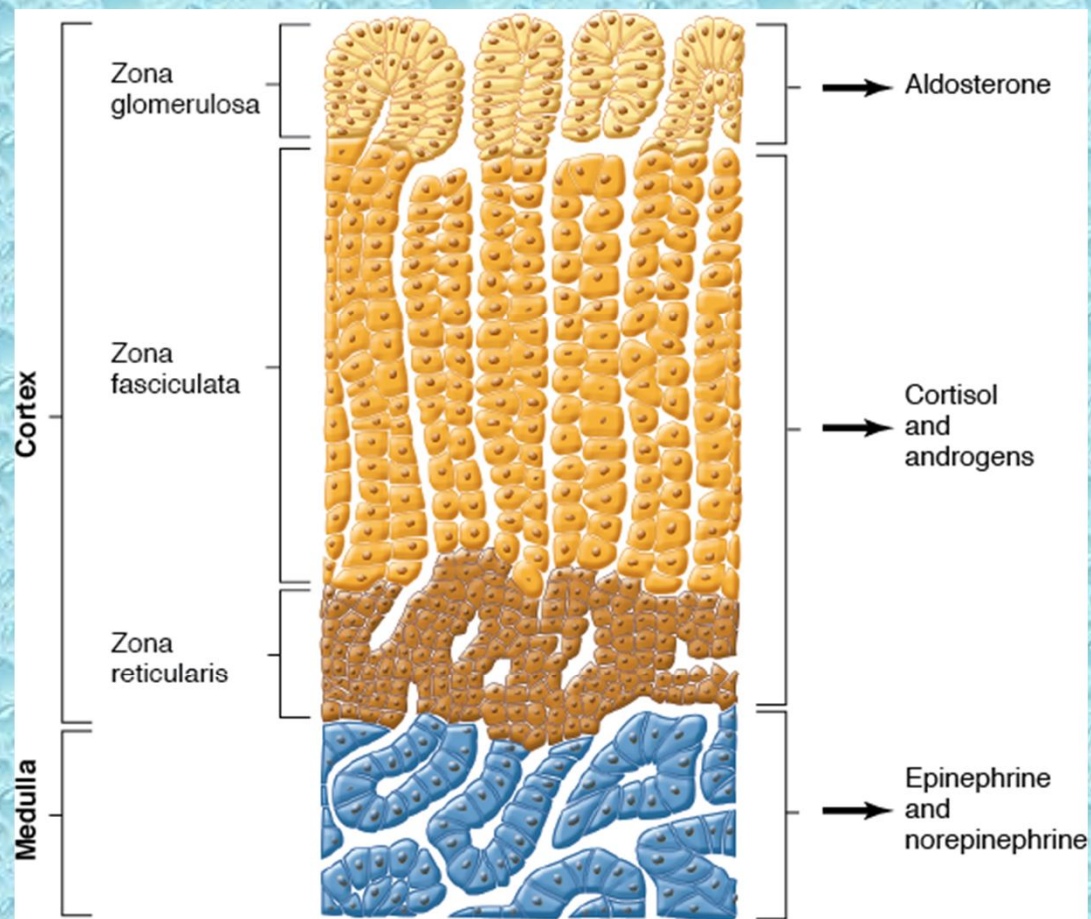


Микрофотографија на адреналните медуларни клетки со нивните големи јадра и fino гранулирана цитоплазма

Medulla на надбубрежната жлезда



- ❑ Зелени стрелки – адренални медулоцити
- ❑ Бела стрелка – нервна ганглиска клетка



Source: Barrett KE, Barman SM, Boitano S, Brooks HL:
Ganong's Review of Medical Physiology: www.accessmedicine.com
 Copyright © The McGraw-Hill Companies, Inc. All rights reserved.