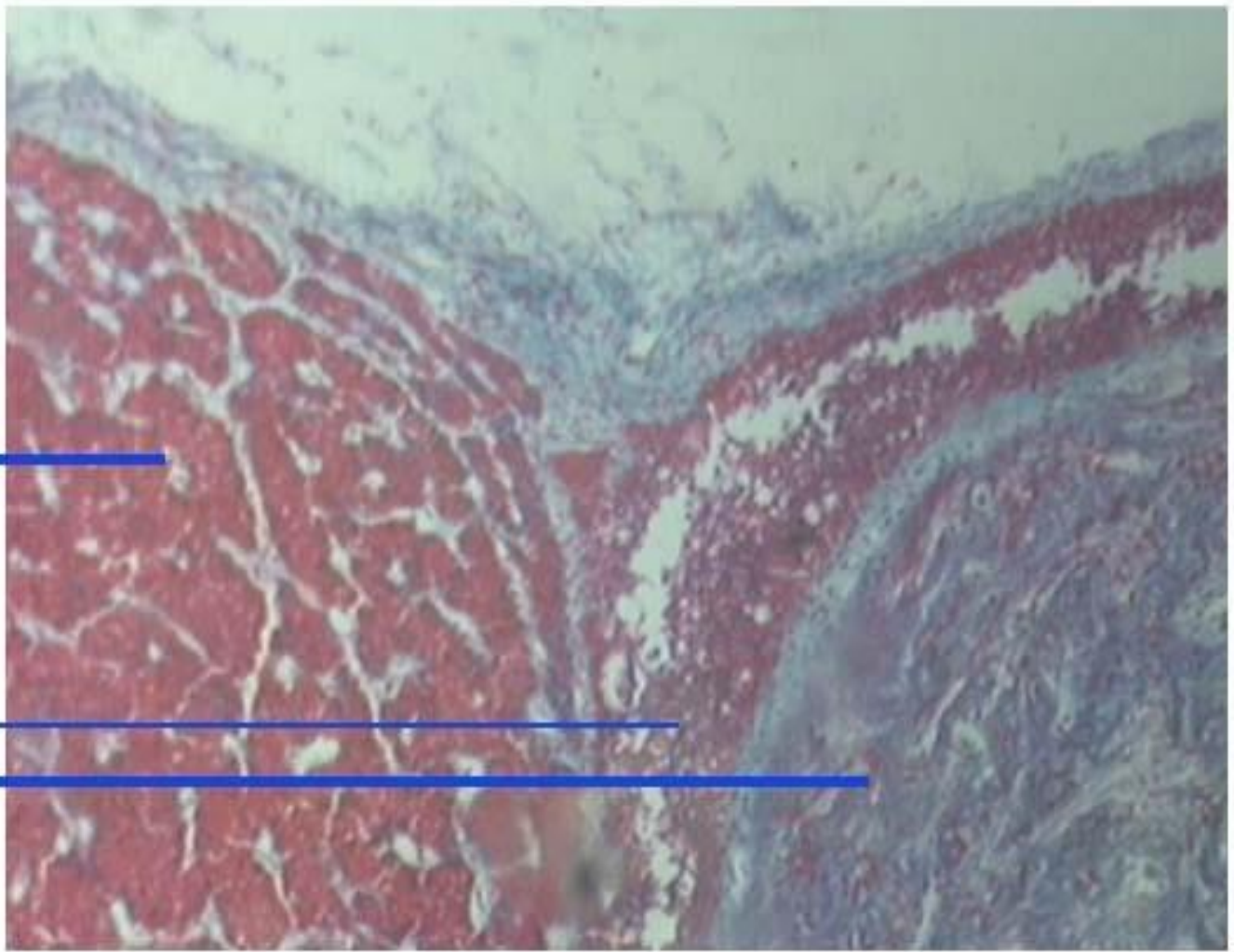


General Histology Practical

Lab 15

Endocrine system

- **1- Pituitary gland (hypophysis):** It has two subdivisions:
 - **Adenohypophysis** (glandular portion)
 - 1- Pars distalis
 - 2- Pars intermedia
 - 3- Pars tuberalis
 - **Neurohypophysis** (nervous portion)
 - 1- Median eminence
 - 2- infundibulum
 - 3- Pars nervosa



pars distalis

pars intermedia

pars nervosa

Cross section in

Pituitary Gland 4x

- **Pars distalis:** the glandular cells arranged in irregular clusters or cords that have an affinity for dyes are called **chromophils**. Those that have no affinity for dyes are called **chromophobes and also it have reticular fibers and fibroblast.**; surrounding by dense connective tissue capsule.
- **Chromophils** are subdivided into **acidophils** and **basophils**. The most abundant cells in the pars distalis are acidophils, whose granules , large pink to red.acidophils are of two kinds, **somatotrophs** and **mammotrophs**. Basophils stain blue with basic dyes. There are three subtypes of basophils: **corticotrophs**, **thyrotrophs**, and **gonadotrophs**.
- **Chromophobes;** groups of small weakly staining cells.

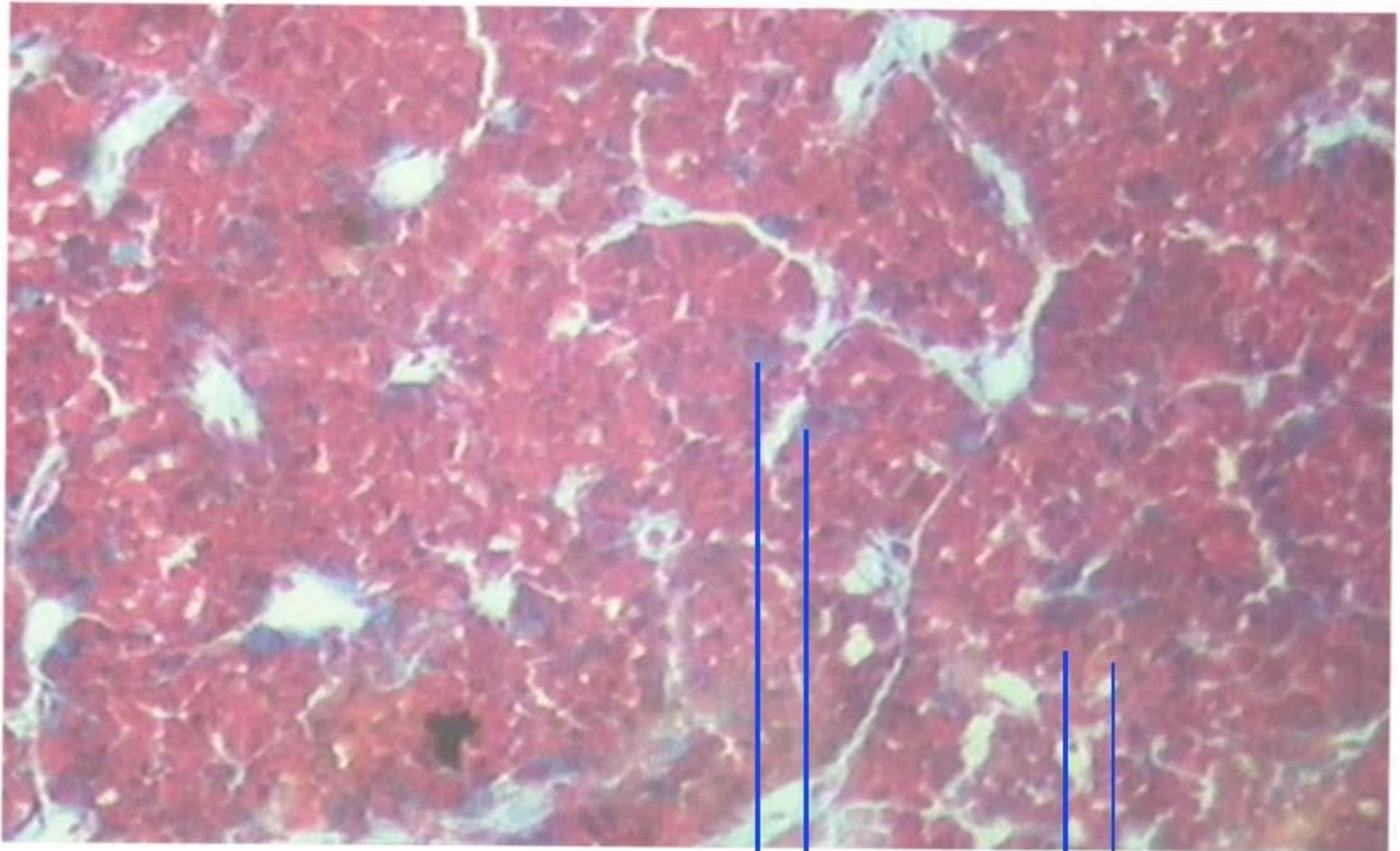
- **Parsintermedia:**

lying between the pars distalis and the pars nervosa, characterized by many cuboidal cells lined.

- **Pars tuberalis and infundibulum** forming the hypophyseal stalk but it is absent on its posterior aspect.

Cross section in

pituitary Gland 10x



basophils

acidophils

- **2- Thyroid gland:**

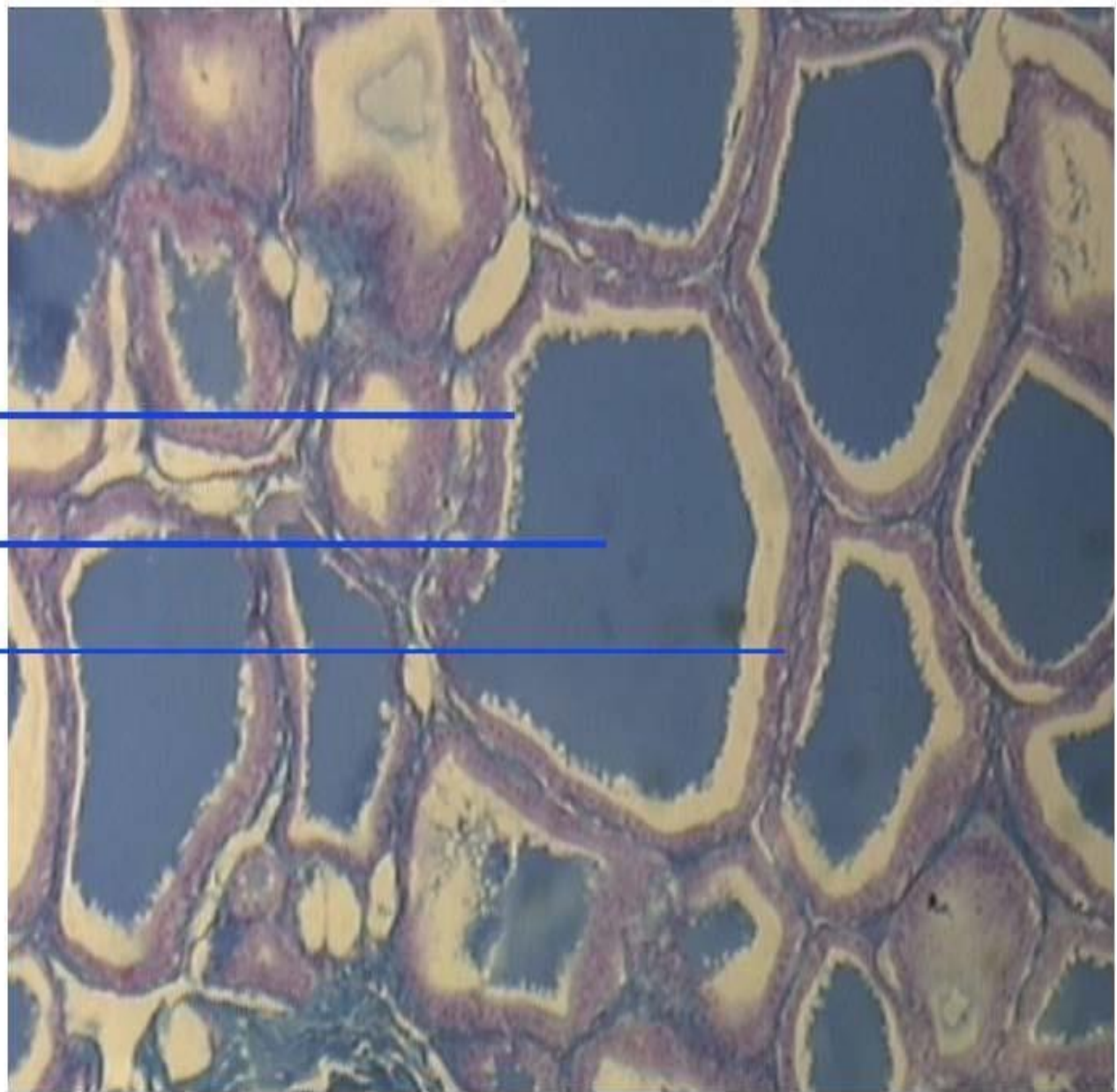
It lies just inferior to the larynx. It is composed of two lobes connected by an isthmus. The gland is surrounded by a slender, dense, irregular collagenous

- connective tissue capsule. Septa derived from it subdivide the gland into lobules; on the posterior aspect of the gland, are the parathyroid glands.
- The cells which consisting of the gland is:
 - 1. Follicle(filling with colloid).
 - 2. Follicular cells.
 - 3. Parafollicular cells.
 - 4. Clear cells.
 - 5. C - cells.
 - 6. re- absorption vesicles.

re absorption vesicles

colloid (thyroglobuline)

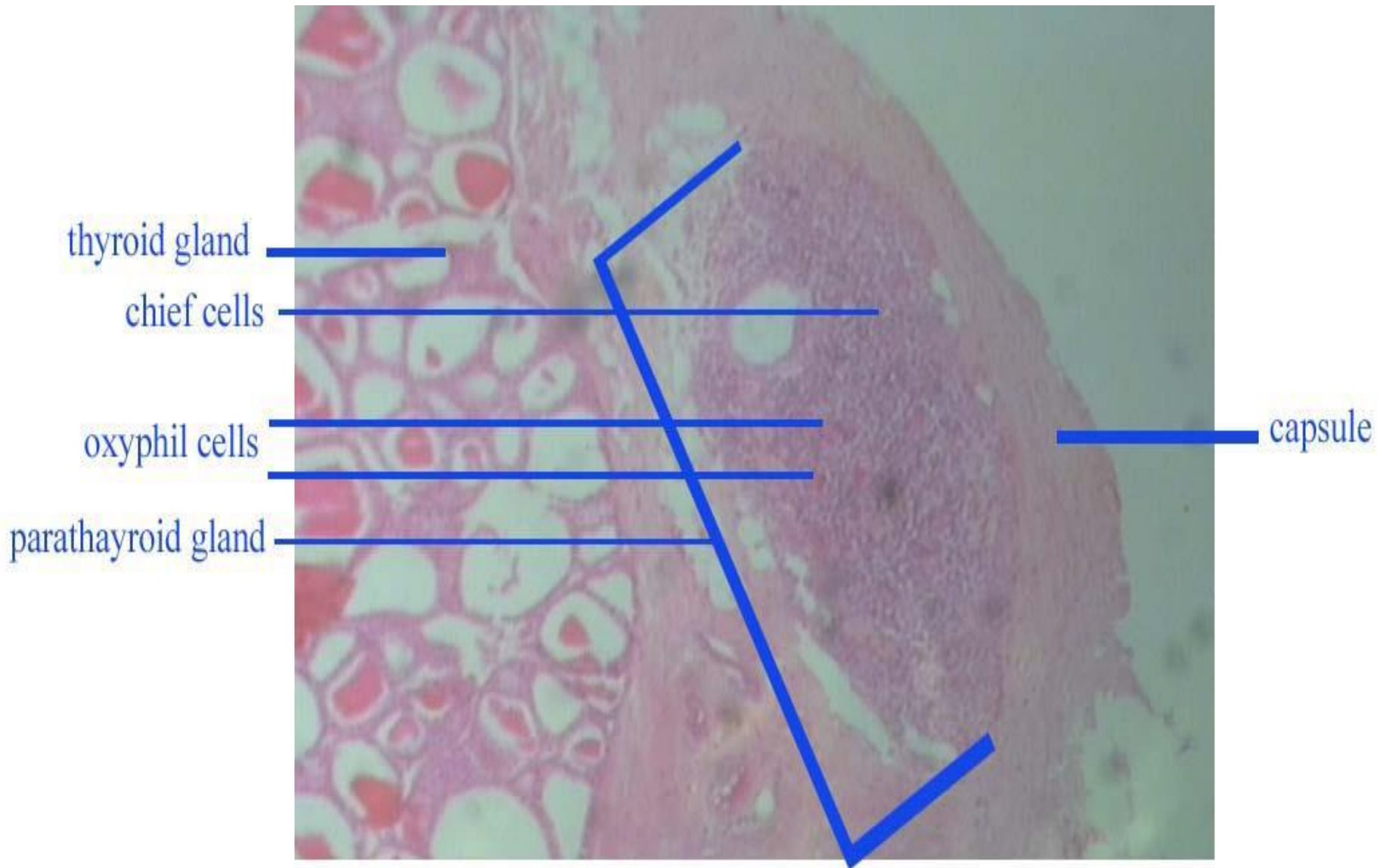
Follicular cells



Cross section in

Thyroid gland 10x

- **3- Parathyroid gland:**
- The parathyroid , usually four lobes, located on the posterior surface of the thyroid gland.
- The gland is a small ovoid structure; it is composed of two cells: **chief cells** and **oxyphil cells** , **chief cells** eosino-philic staining, **oxyphil cells** are less numerous, larger and more deeply stained with eosin than chief cells.



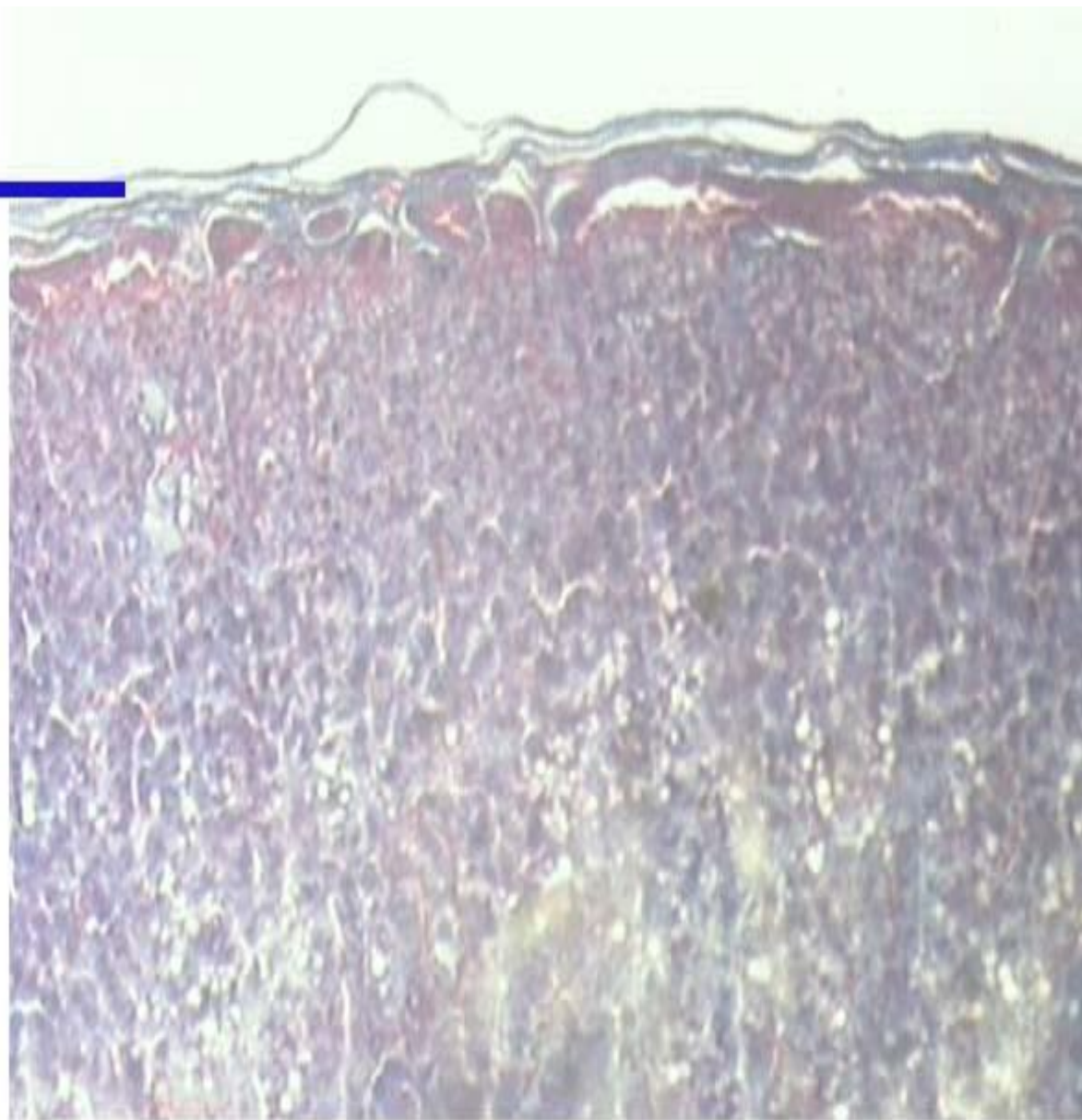
thyroid and parathyroid glands 4x

- **4- Suprarenal (adrenal) glands:**
- They are located at the cranial of the kidneys.
- Surrounding by dense connective tissue.
- The parenchyma is divided into two regions:
- **1- cortex:** outer yellowish portion, about 80% to 90%.
- **2- medulla:** small and inner portion.

- **1.The cortex** is subdivided into three zones:-
 - **1-** Zona glomerulosa.
 - **2-** Zona fasciculata.
 - **3-** Zona reticularis.

- **1- Zona glomerulosa:** consisting about 13% of total adrenal volume. The small columnar cells composing this zone are arranged in cords and clusters.
- **2- Zona fasciculata:** the largest layer of the cortex, up to 80% of the total volume of the gland. This zone contains sinusoidal capillaries arranged longitudinally between the columns of parenchymal cells. The polyhedral cells in this layer are larger than the cells of the zona glomerulosa, and are arranged in radial columns, these cells called **spongiocytes**.
- **3- Zona reticularis:** constituting about 7% of gland volume. The darkly staining acidophilic cells are arranged in cords. They are similar to the spongiocytes but smaller.

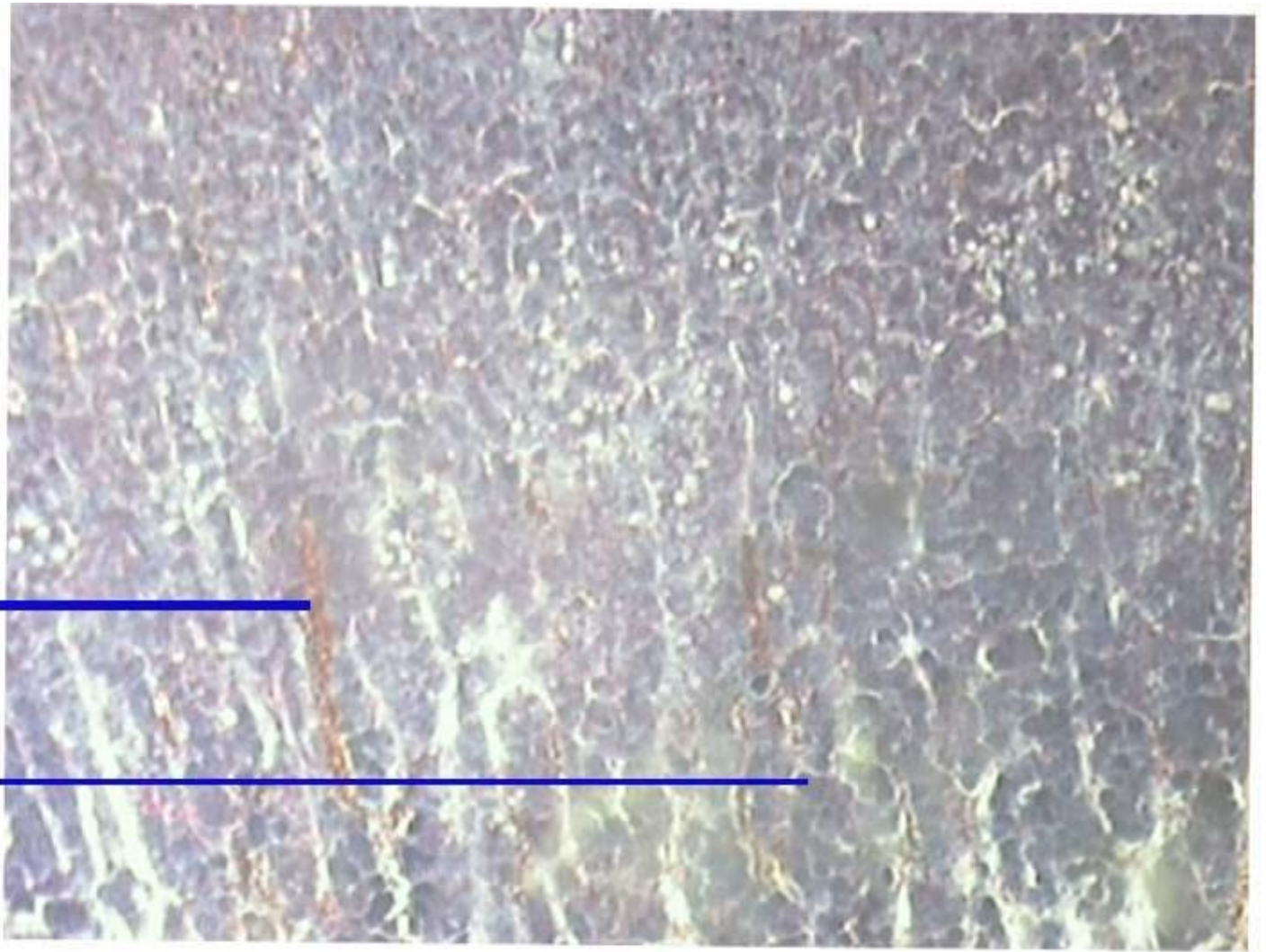
capsule



zona
glomerulosa

zona
fasciculata

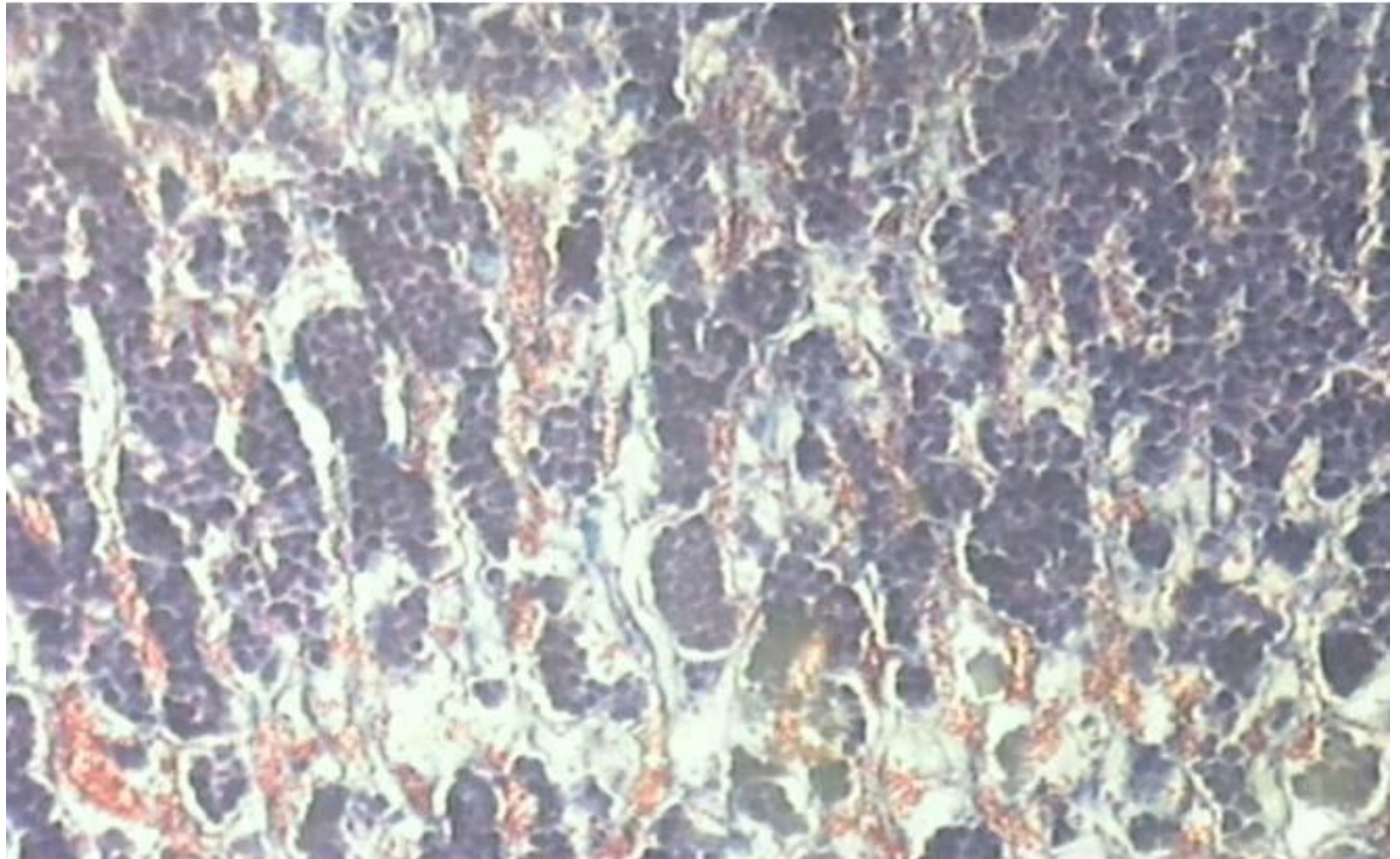
perpendicular section in adrenal gland 4x



sinusoidal
capillaries

spongiocytes

perpendicular section in adrenal gland(zona fasciculata) 4x

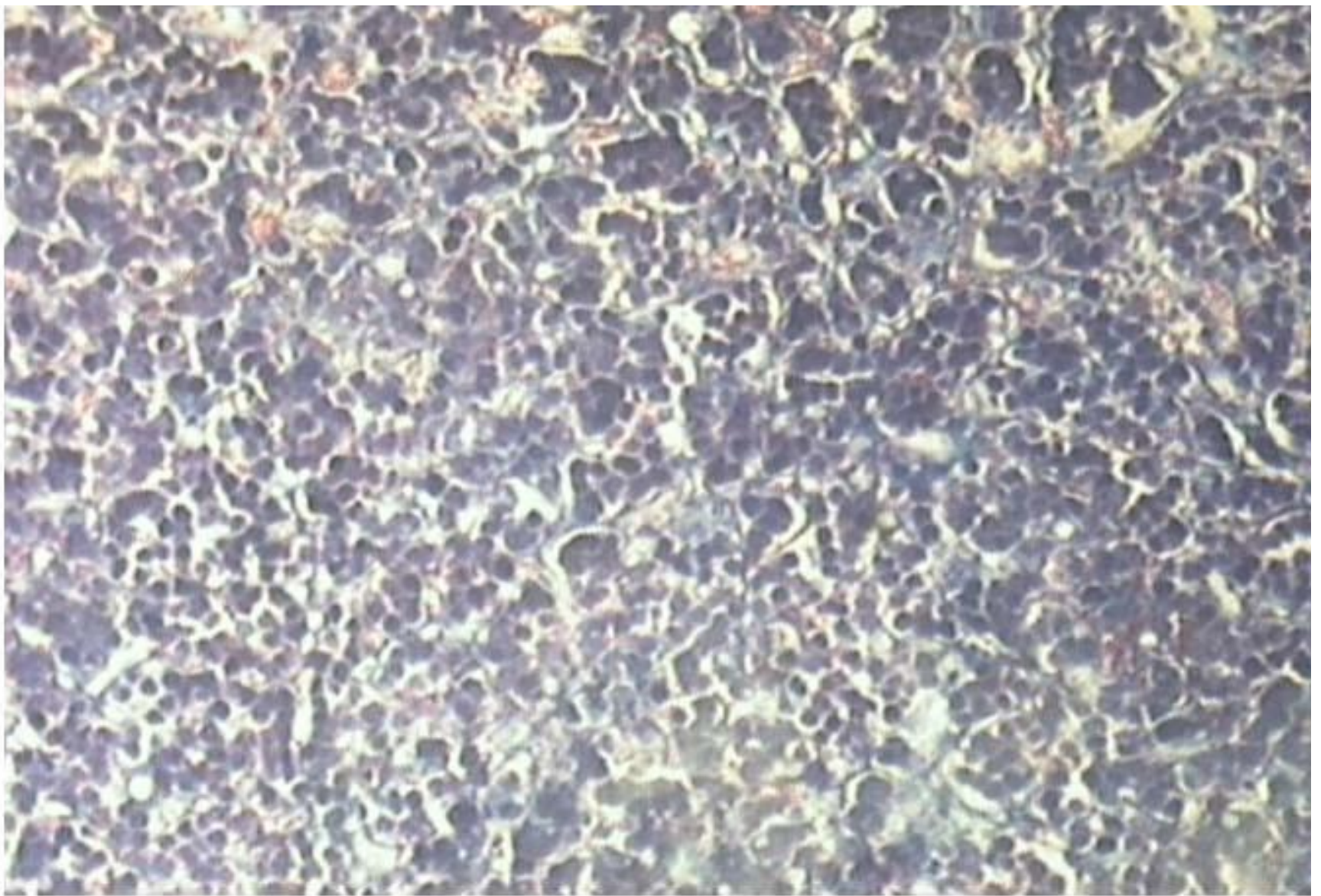


perpendicular section in adrenal gland(zona reticularis) 4x

2- Medulla : containing the following cells :

1- Chromaffin cells: are large epithelial cells, arranged in clusters or short cords.

2- Sympathetic ganglion cells: which are scattered through the dense connective tissue.



perpendicular section in adrenal gland(medulla) 4x

- **5- Pineal gland:**

it is conically shaped, the parenchymal cells are composed of:

1. Pinealocytes.

2. interstitial cells (neuroglial cells).

3. Brain sand.

Pinealocytes are basophilic cells with one or two long processes.

**THANK YOU FOR
LISTINING**

