

Medulla

Inner layer is faintly stained contains:

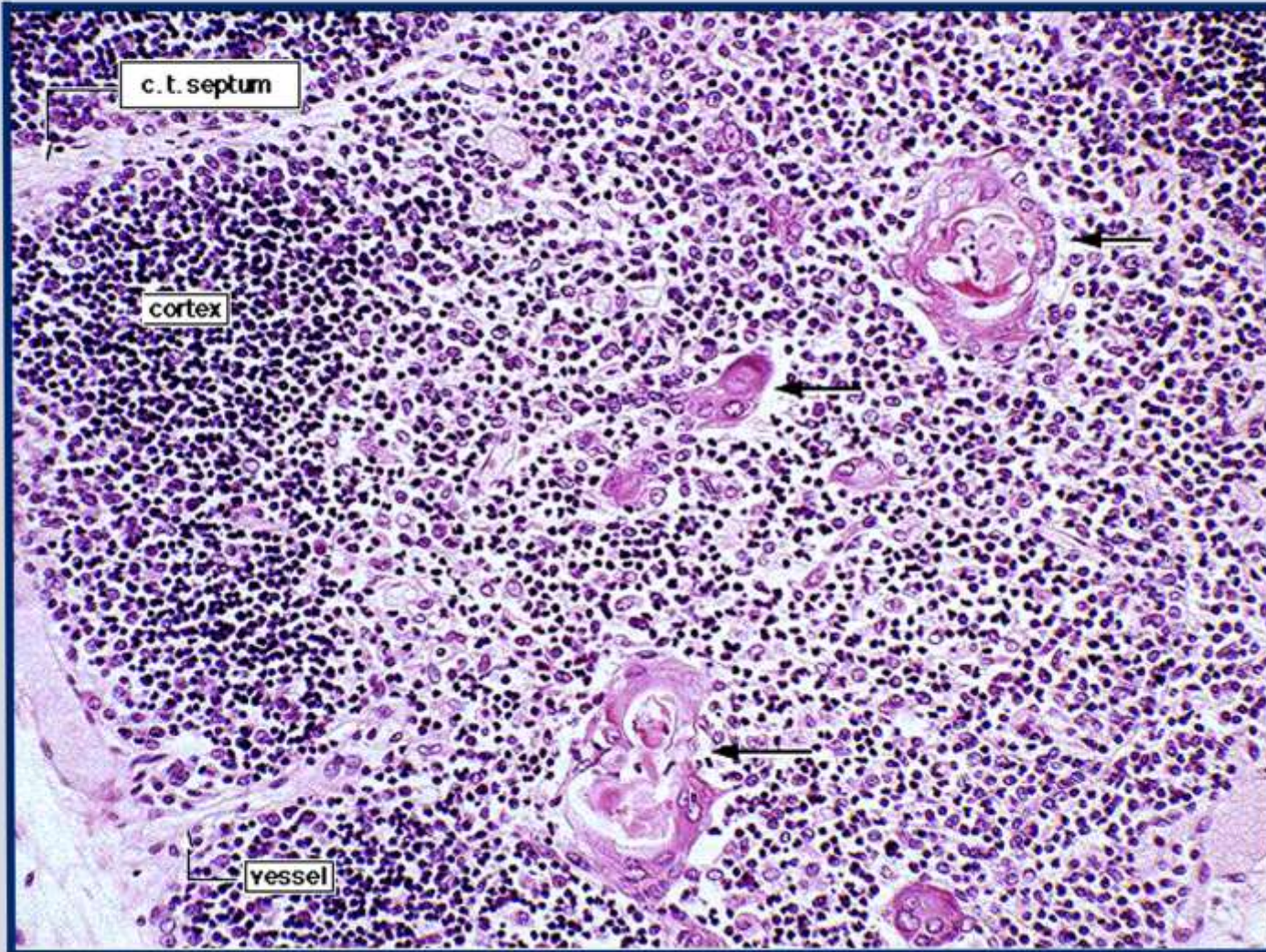
Large number of epithelial reticular cells; few T- cells, macrophages, mast and plasma cells.

_Thymic (Hassall's corpuscles):

Oval structures (30-150 um) in diameter, composed of flattened epithelial reticular cells arranged as lamella concentrically arranged, they filled with keratin filament that may be calcified, their function unknown.

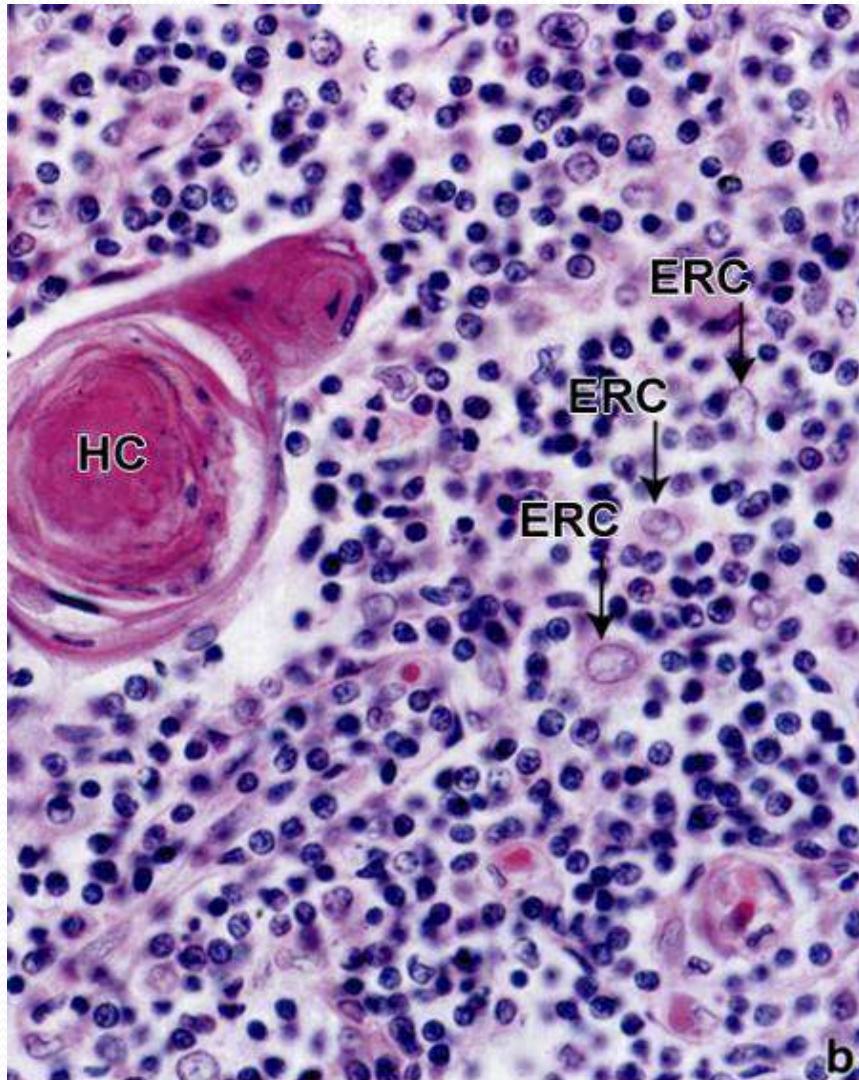
Thymic Cortex and Medulla

Thymic (or Hassall's) Corpuscles



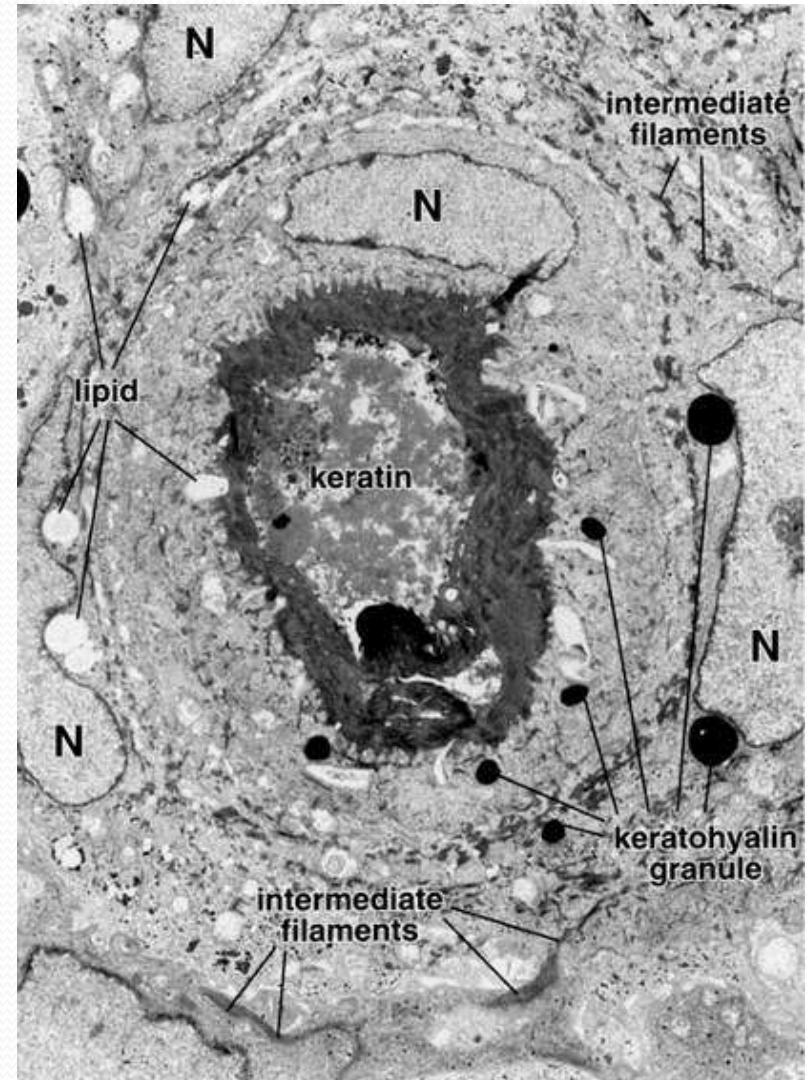
In the medulla, epithelioreticular cells form onionized structures called Hassall's corpuscles - quite prevalent in older thymus

LM view



Ross and Pawlina, *Histology: A Text and Atlas*

EM view



Ross and Pawlina, *Histology: A Text and Atlas*

Blood thymus barrier

The barrier found in the cortex separating proliferating thymocytes from the blood.

Lymphocytes are prevented from being in contact with antigens by a physical barrier that prevents the entry of antigens to the cortex from blood.

The epithelial reticular cells surround the capillaries of cortex, so the barrier is composed of :

Endothelium of capillary which is continuous (not fenestrated).

In medulla, there is no special barrier, because the capillary of medulla is fenestrated, and completely covered by epithelial reticular cells.

Major function of thymus

- _Supported the proliferation and programming of T lymphocytes.
- _It also secretes the hormone thymosin and thymopoietin that promotes the function and maintenance of T lymphocytes in particular.

Note: Size of thymus varies with age:

- _In infants it is found in the inferior neck and the heart extends into the mediastinum where it partially overlies the heart.
- _It increases in size and is most active during childhood
- _It stops growing during adolescence and then gradually atrophies.