

THYMUS

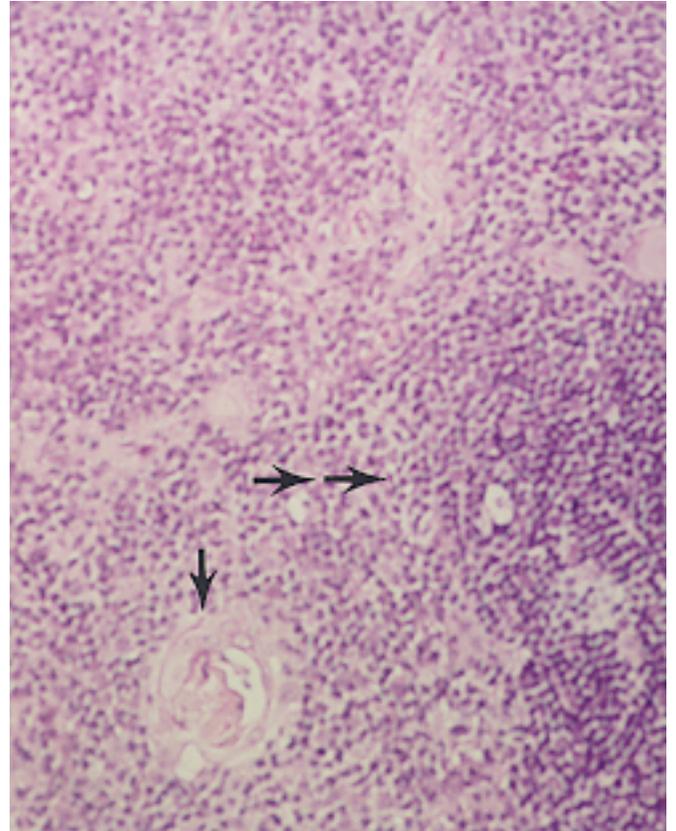
The thymus is a lymphoid organ of the mediastinum that is most active during childhood after which there is gradual involution. Large in the infant, in later life the thymus may be difficult to detect embedded as it is in the surrounding fatty tissue. Fatty tissue appears in the thymus during childhood and then decreases markedly after puberty.

Microscopically, there are lobules composed of cortex and medulla, morphologically distinctive components, each with different proportions of epithelial cells and lymphocytes ("thymocytes"). Small, closely spaced lymphocytes in the cortex overshadow the relatively few epithelial cells and cause the cortex to stain bluish. The medulla in contrast, stains eosinophilic because it contains a relatively larger number of epithelial cells. These cells have large pale-stained nuclei and eosinophilic cytoplasm. The thymocytes of the cortex are of different sizes and tend to be larger toward the periphery.

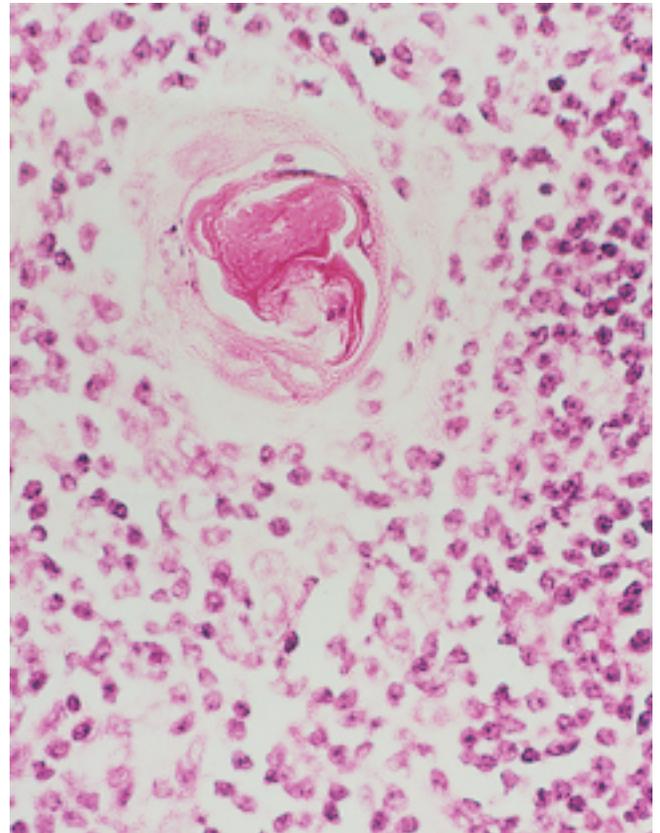
Hassall's corpuscles are a distinguishing feature of the medulla. They increase in number after puberty. They begin as single medullary cells which disintegrate to form an intense pink staining, somewhat lamellar, and roundish mass that resembles a large keratin pearl.

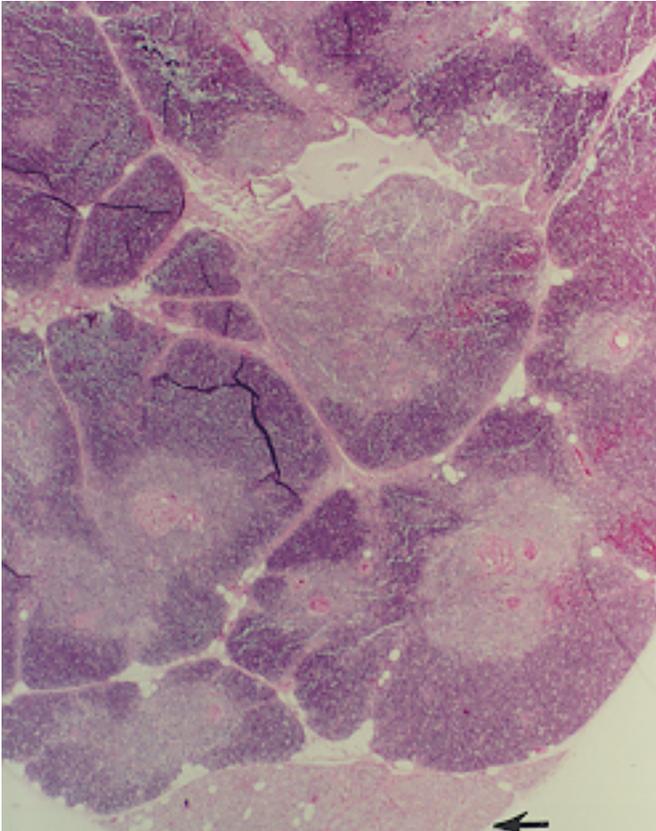
Lymphoid nodules with active germinal centers may also be found in the thymus and apparently are unrelated to the other thymic lymphocytes since these are B-cell structures and the thymus is predominantly a T-cell structure. Macrophages are also prominent in some sections. A "starry-sky" appearance may be present in some areas caused by death and phagocytes of thymic lymphocytes.

Thymus, showing a Hassall's corpuscle (single arrow) located in the pink-staining medulla adjacent to a basophilic area representing cortex (double arrows) formed by lymphocytes.

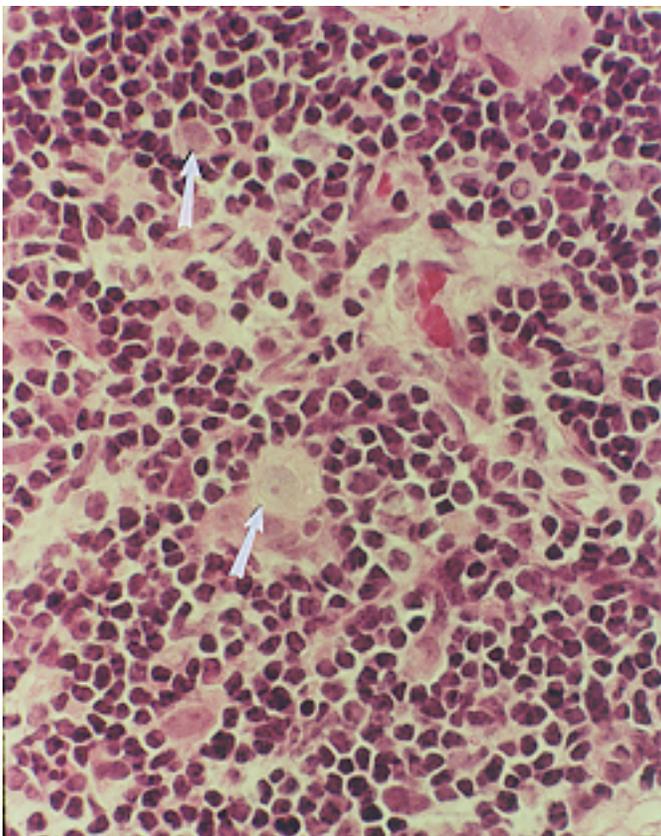


Thymus, high power, with large Hassall's corpuscle in medullary portion of thymus. The epithelioid cells stain eosinophilic.





Thymus, portion of gland. Note distinction between cortical (blue) areas and medullary (pink) areas. Tiny pink corpuscles are seen. Arrow points to normal parathyroid tissue.



Thymus, cortex, with pale epithelial cells (arrows) and lymphocytes.