

AN70.2 Identify the lymphoid tissue under the microscope and describe microanatomy of lymph node, spleen, thymus, tonsil and correlate the structure with function.

Lymph node, spleen, thymus and tonsil.

### STRUCTURE OF LYMPH NODE

The cut surface of a lymph node is seen to be divided into an outer peripheral cortex and an inner medulla. **Cortex** contains lymphatic nodules/primary nodules which are about 1 mm in diameter.

**Medulla** consists of lymphocytes arranged in cords called *medullary cords* which contain plasma cells, macrophages and small lymphocytes.

The thymus derived "T lymphocytes" are confined in the deep cortical (paracortical) region.



#### **Magnified View of Lymph Nodules**





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#### **SPLEEN**

Spleen contains large amount of lymphatic tissue which **filters blood** instead of lymph. The spleen is comprised of **white pulp and red pulp**. White pulp is seen in the form of lymphatic nodules usually with an eccentric arteriole. The red pulp comprises a loose framework of reticular fibres with many lymphocytes, free macrophages, RBC, neutrophils and monocytes. "T zone of lymphocytes" is around the perivascular sheath.



Spleen. Stain: Haematoxylin-eosin, 100X

# **Splenic Circulation**



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#### **THYMUS**

Thymus is a lymphoepithelial lobulated organ that produces "T lymphocytes" and a lymphocyte stimulating hormone. Thymus involutes at puberty. Each lobule has a peripheral darker cortex and a central lighter medulla. Since the septa do not extend into the medulla there is continuity of the medullary tissue of the various lobules. Chief cells are: *Thymic lymphocytes, epithelial reticular cells*. Hassall's corpuscles are formed by:



Thymus at puberty. Stain: Haematoxylin-eosin, 100X

## **PALATINE TONSIL**

It is a collection of paired lymphoid tissue at the oropharyngeal isthmus. Its oral aspect is covered by stratified squamous non-keratinised epithelium which dips into the underlying tissue to form crypts. The lymphocytes lie beneath the epithelium and on the sides of the crypts. These are collected to form nodules. "T lymphocytes" are present in the perifollicular area.



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AN70.1 Identify exocrine gland under the microscope and distinguish between serous, mucous and mixed acini.

The glands are classified as endocrine and exocrine glands. Salivary glands are exocrine in nature.

### SALIVARY GLANDS

Three pairs of salivary glands secrete saliva which is poured into the oral cavity. These are: (i) Parotid gland—serous; (ii) submandibular gland—mixed and predominantly serous; (iii) sublingual gland—mucus.

#### **Parotid Gland**

Each acinus is rounded and is lined by pyramidal cells surrounding a very small lumen.



Parotid gland. Stain: Haematoxylin-eosin, 400X

#### Submandibular Gland

This glands consist of both serous and mucous acini. The mucous acinus is lined by truncated columnar cells. Between mucous cells and the basement membrane are half-moon shaped polyhedral granular serous cells. These cells are known as **demilunes of Giannuzzi**.



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