

# Lymphatic system (practicum) (1st Faculty of Medicine, UK)

In the practical exercise, the following preparations are microscoped:

- G1 - Lymph Node
- G2 - Spleen
- G3 - Spleen (impregnation)
- G4 - Thymus of the child
- G5 - Thymus of an adult human
- B5 - Palatine tonsil

## G1 - Lymph node

A lymph node is a bean-shaped organ embedded in thin connective tissue. The knot itself is surrounded by a hard fibrous capsule made of dense collagen fibers, elastic fibers and a minimum of smooth muscle cells. Capsula fibrosa sends out trabeculae inwards, which at the same time branch blood vessels inwards. The stroma is made up of a network of reticular fibers and cells (reticular fibroblasts) and 3 areas can be distinguished in it on a section - the cortex (cortex), the medulla (medulla) and the paracortex.

**Bark** it contains oval accumulations of lymphatic tissue, the so-called **lymphatic follicles**. We recognize 2 types of follicles:

- **Primary follicles** are formed by the accumulation of **B-lymphocytes** with a strongly staining nucleus and only a small amount of cytoplasm, therefore they have a dark appearance.
- **Secondary follicles** have a **germinal (reaction) center** of different sizes in the middle. The lighter coloration is due to activated B-lymphocytes with a finer chromatin structure and a larger amount of cytoplasm.

The cortex usually does not reach the hilum of the nodule.

In the **marrow** there is a smaller amount of lymphocytes, but in contrast to the cortex there are numerous macrophages, plasma cells and rarely heparinocytes.

## G2 - Spleen

The spleen is a large lymphatic organ, which, due to its functions ("cemetery" of erythrocytes, a reservoir of blood platelets, etc.), is richly supplied with blood.

## G3 - Spleen (impregnation)

## G4 - Child's thymus

## G5 - Thymus of an adult human

## B5 - Palatine tonsil

The palatine tonsil is an accumulation of cells of the lymphatic line in the mucosa between the *arcus palatoglossus* and the *arcus palatopharyngeus*.

### Tonsil Surface:

- is covered with **stratified squamous epithelium non-keratinizing** (epithelium oral cavity);
  - the covering epithelium is clearly visible in some places, in other places, especially in the crypts, it is **fibrous** due to the infiltration of lymphocytes and therefore difficult to distinguish under the microscope;
- furrowed into pits that lead to variously deep **crypts**;
  - in the crypts there is '*detritus*' - a mixture of desquamated epithelial cells, bacteria, food remains and numerous lymphocytes that have traveled here from the epithelium.

### Lymphatic Component

- forms variously numerous and close to each other **lymphatic follicles**
- we will often observe bright **germinal centers** showing slight eosinophilia. The germinal centers are the expression of the organism's *immune system activation*.

Tonsils have no afferent lymphatic vessels, but are drained by efferent lymphatic vessels.

