To study the histology of Spleen- A Secondary lymphoid organ observed by students in class activity

Spleen is a large, ovoid, secondary lymphoid organ situated high in the left abdominal cavity. Spleen performs the function of filtering blood and traps the blood borne antigens. Blood borne antigens and lymphocytes are carried into the spleen through the splenic artery, which branches into arterioles. The splenic white pulp surrounds the branches of the splenic artery, forming a periarteriolar lymphoid sheath (PALS) populated mainly by T lymphocytes.

Outer surface of the spleen consists of a capsule that extends a number of projections called trabeculae and interior components are collectively called the pulp.

The pulp is clearly visible in two different forms: red and white. The splenic red pulp consists of a network of sinusoids populated by macrophages and numerous red blood cells and few lymphocytes. The organ appears as a large expanse of red pulp dotted with white pulp.

Red pulp is called red due to the presence of large numbers of erythrocytes in blood vessels called sinuses and white pulp is “white” due to lack of these sinuses and consequently fewer erythrocytes. The red pulp surrounds the white pulp which appears like lymphatic nodules. Closer inspection of the white pulp indicates that there is a “splanic arteriole”, sometimes called a central artery, close to the center of each area of white pulp.

The area of white pulp where T cells are located is readily seen. This area consists of numerous T cells forming a kind of sheath around the central artery; forming a periarteriolar lymphoid sheath or PALS. Primary lymphoid follicles are attached to the PALS. These follicles are rich in B cells and some of them contain germinal center.