

Article

Comparative Histomorphological Study of Spleen in Goat, Sheep, Cow and Buffalo

Mustafa S. Ghaji^{1*}, Yasmeen J. Mohammed², Thaer R. Mhalhal¹, Yasmeen J. Mohammed², Thaer R. Mhalhal¹

¹Department of Anatomy and Histology, Veterinary Medicine College, University of Basrah, Basrah, Iraq.

²Department of Pathology and Poultry Diseases, Veterinary Medicine College, University of Basrah, Basrah, Iraq.

*Correspondence: [*mostafa.saddam@uobasrah.edu.iq](mailto:mostafa.saddam@uobasrah.edu.iq) Tel: 009647734952025

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Abstract: Immunity in some animals, such as goats, stands for unique properties by which they withstand unpleasant environments. Spleen influences animals' immunity through its hematopoietic and immunological roles. Because of that, we emphasized the average morphological and histological properties of the Goat, Sheep, Cow and Buffalo spleen. We randomly collected three spleens for every species from healthy slaughtered Goats, Sheep, Cows and Buffalo. All the animals were adult and weighed about 71, 80, 400 and 500 grams, respectively. Histological cutting was followed according to the paraffin method; then, the samples were ready for microscopic exam. The structure results revealed that the spleen of animals is supported externally by a thick fibromuscular connective tissue capsule, which vascularizes by subcapsular sinus. Stromal trabeculae emerge from the capsule, entering the splenic parenchyma. The parenchyma of animals' spleen differentiates into white pulp, which organizes into the periarterial lymphatic sheath along with lymph nodules, red pulp ropes in splenic sinuses among splenic cords, and marginal zone in which macrophage occupies excellent importance. This study concluded that the amount of smooth muscle in the spleen septa in goats was more than in the rest of the experimental animals.

Keywords: Histomorphology; Spleen; Goat; Sheep; Cow; Buffalo.

Introduction

The spleen is the largest of all lymphoid organs for immunological defense¹. The organ was of central interest to many scientists in different mammals to understand its immunological role^{2,4}. The spleen is classified into defensive type, storage type and intermediate type. The defensive type occurs in men, rabbits and mares. Storage type occurs in horses, dogs and cats. The intermediate type occurs in ruminants and swine³. The organ is demanding constant attention from anatomical, immunological and clinical points of view. The spleen is an essential site for hemopoiesis in early life. Medical teaching in the majority of the colleges is based on animal tissues. Comparative histology not only gives an insight into understanding an organ's functions but also explains human features in detail even if tissues from lower mammals are available⁵. The spleen stands for the primary secondary lymphatic organ.

Normal spleens comprise white pulp, marginal zone and red pulp; the lymphoid tissue of white pulp is composed of 2 parts: the thin periarteriolar lymphoid sheath, which is rich in T lymphocytes, contrary to lymphoid follicles that are composed mainly of B lymphocytes. On the other hand, the marginal zone includes the area that separates white pulp from the red one. Meanwhile, the red