PATHOGISTOLOGICAL CHANGES IN ORGANS IN SHEEP PARAMPHISTOMATOSIS

Akhmedov Sunnat Mukhitdinovich
Independent Researcher, Assistant

Daminov Asadullo Suvonovich
v.f.d., professor

Kuliev Bohodir Amridinovich,
PhD., Associate Professor Samarkand State University of Veterinary Medicine, Animal Husbandry and Biotechnology

Abstract
The scientific article describes in detail the changes in digestion, parenchymatous organs and tissues, as well as pathogistological changes in rennet and duodenum in sheep paramphistomatosis. The scientific article also contains practical conclusions.

Keywords: atrophy, diarrhea, hyperplasia, hyperkeratosis, necrosis, hyperemia, dystrophy, reticulitis, pericarditis, hemorrhage, fragmentation, desquamation, follicle, colloid, hyperplasia, trabecula, hemosiderin, hepatocyte.

Relevance of the Research Topic
Paramphistomatosis is the most common invasive disease among farm animals. This disease not only causes severe pathological changes in the body of animals, but also causes their death in many cases. Paramphistomatosis has recently become widespread among large and small horned animals. In the literature, there is very little information about the epizootology and pathoanatomy of sheep paramphistomosis, especially there is no information about the pathogistological changes that occur in the tissues during the disease.

The purpose of the study. It consists in the analysis of pathogistological changes in digestive and parenchymatous organs of sheep of different ages affected by paramphistomatosis in Urgut, Toyloq, and Okdarya districts of Samarkand region.

Research materials and methods. Scientific research work was carried out in the laboratory of the Department of Animal Anatomy, Histology and Pathological Anatomy of SamDVMChBU. The tests were carried out on internal organs of sheep spontaneously infected with paramphistomatosis. The main direction was pathogistological examination by taking

samples from the organs of sheep that died from the disease, infected and forcibly slaughtered sheep. Pathogistological changes in diseased organs were studied. In the conditions of farmers and private farms in several districts of the region, litter materials obtained from dead, infected and forced slaughtered sheep from paramphistomatosis were studied. Samples taken from internal organs were studied by pathogistological methods generally accepted (hematoxylin and eosin).

Research results. In the mucous membranes of the duodenum and small intestine, the basal membranes are exposed, the epithelial cells are detached from their walls, erosions are formed, and the number of packed cells is increased. Suckers are short, needle-like in some places. Lymphoid, plasmatic cells, histiocytes, eosinophils are always collected in the submucosa layer, dilation of capillary vessels and hemorrhages are seen. Swelling of the private layer, fragmentation of elastic fibers, and swelling of collagen fibers were found. They are weakly stained, the muscle fibers are not uniformly stained, in some places the parasite larvae are invisible, in the form of a tumor.

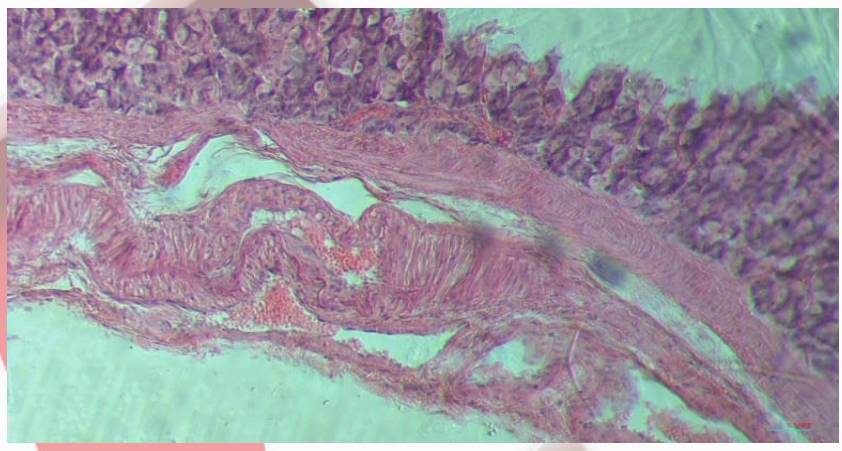
The follicles of the mesenteric lymph nodes are without outline, the reactive center is developed. Peripheral and central sinuses are expanded, and lymphocytes, neutrophilic leukocytes and plasma cells are collected in large numbers. It was found that lymphocytes, eosinophils and plasma cells were scattered and concentrated in the capsule and trabeculae.

On the mucous membrane of the 12-finger intestine, pieces of paramphistome larvae cut in different directions are visible. Similar parasite fragments are also present among the suckers, which are also located in the deep parts of the intestinal mucosa. Suckers of the larva tightly adhering to the surface of the intestinal mucosa were detected. As a result of proliferation, there are many epithelial cells and papillae in these places. A large number of lymphoid cells, histiocytes, and eosinophilic leukocytes are seen infiltrating the connective tissue of the stroma. Paramphistoma larvae, which are deep in the mucous membranes, constrict the secretory glands and their pathways. As a result, accumulation of secretions occurs and cysts are formed.

In other sheep, hemorrhages, desquamation of the teat epithelium and small necrotic foci were detected at the beginning of the 12 fingers and small intestines. On the surface of the mucous membranes, young paramphistome larvae are visible in large numbers in transverse and longitudinal sections. They are located in the submucosa and even in some parts of the muscle layer. Capillaries in the submucous layer were enlarged, filled with blood, hemorrhages, necrosis of epithelial cells, deformation of the nipples, disruption of the glandular tissue structure were found. Collagen fibers in the connective tissue are swollen. Cell infiltration consists of lymphocytes, histiocytes, plasmocytes, neutrophilic leukocytes and eosinophils: Eosinophilic leukocytes are found in all internal organs, mainly in intestinal wall, liver, spleen, and lymph nodes. The glands in the submucosal layer are swollen, the structure is broken, and

cysts of various sizes are formed. Desquamation of the epithelium has developed in the ducts of the glands. Muscle fibers are swollen and split.

In Shirdon - vascular hyperemia, homogeneous foci were detected. An increase in the number of lymphoid follicles in the cortical layer of Charvi's lymph nodes, and an increase in lymphocytes and plasma cells in the medulla, swollen sinusoids, formation of dark nets, accumulation of small and medium lymphocytes, eosinophils.



1 – picture: Microscopic view of Shirdon. Vascular hyperemia. Desquamation of epithelial cells. Hematoxylin-eosin. Ok. 40. Ob. 10.

Hyperemia of vessels, desquamation of epithelial cells, edema of the submucosal layer are characteristic in the mucous membrane of the esophagus, esophagus and large stomach. It informs that the larvae of the parasite later fell on these mucous membranes. It is located in 2-3 rows in the bark layer of the sheep's lymph nodes. It can be seen that the number of lymphatic follicles has increased, lymphocyte and plasmatic cells are located in a lump at the edges of the marrow.

In the myocardium - fat cells accumulated around its blood vessels, and cell infiltration in other parts. In the connective tissue layers, collagen fibers are swollen and the number of fat cells is increased, desquamation of vascular endothelial cells is characteristic.

In the thyroid gland - the follicles are filled with dark colloid. This change is caused by hypofunction of the thyroid gland.

In the spleen - hyperplasia of lymphoid follicles is noticeable. Histosections of the spleen clearly show white and red pulp, secondary follicles are increased. The reactive centers in the lymphatic follicles of the white pulp are large, and in the red pulp, lymphocytes, neutrophils and eosinophils are collected in large quantities. Trabeculae arteries and endothelial cells of small vessels are eroded (necrosis).

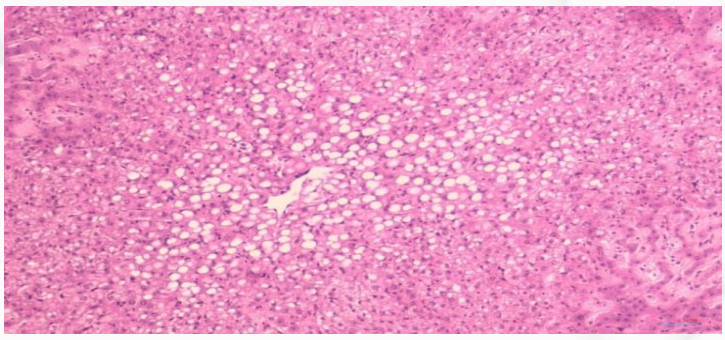


Figure 2: Microscopic view of the spleen. Lymphocytes, neutrophils and eosinophils are collected in the follicles. Hematoxylin-eosin. Ok. 40. Ob. 10.

Lymphatic follicles with reactive centers are also developed in the spleen, in which the central arteries have increased by 2-3 units. The histochemical method revealed an increase in the amount of hemosiderin when stained with Perlsud.

In the liver - granular protein dystrophy of hepatocytes, proliferation of histiocytes and lymphoid cells in interlobular connective tissue. Hyperemia of venous vessels, disorder of beams developed. Protein granules are seen in the cytoplasm of hepatocytes, and eosinophils are seen in the intercellular connective tissue.

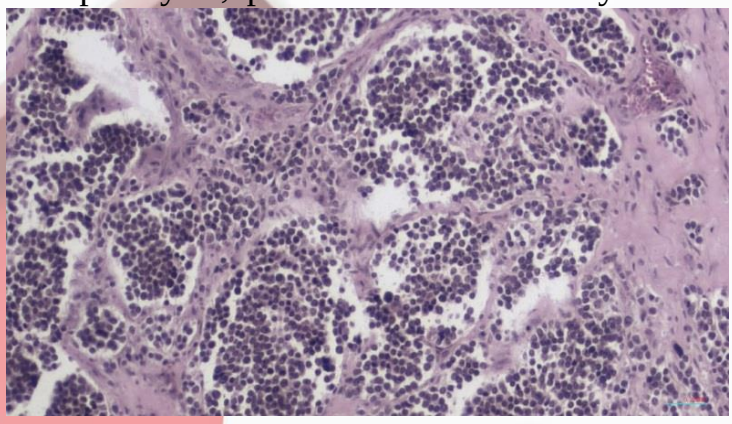


Figure 3: Microscopic view of the liver. Protein and fat dystrophy in hepatocytes. Hyperemia in venous vessels. Hematoxylin-eosin. Ok. 40. Ob. 10.

Kidney - curved tubules are enlarged to the size of epithelial cells, nuclei are divided into small chromatin bundles, blood vessels in the medullary part of the kidney are hyperemic.

In other organs, vascular hyperemia and partially accumulated cellular elements in the stroma of the organ were detected.

Conclusions

1. Desquamation of epithelial cells, infiltration of lymphoid, plasmatic cells, histiocytes, eosinophils in mucous membranes of the larynx and 12 fingers is characteristic.
2. Protein and fat dystrophy, hyperemia of blood vessels, cell necrosis and hemosiderosis have developed in parenchymatous organs.

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