PATHOMORPHOLOGICAL DIAGNOSIS OF SEPTIC DISEASES

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Abstract: *This article describes the pathomorphological diagnosis of colibacteriosis, salmonellosis and pasteurellosis in farm animals. The purpose of this topic is to create and introduce a local drug (vaccine) to prevent and fight against these diseases.*

Key words: *vaccine, organ, tissue, cells, pathomorphology, immunity, diagnostics, colibacteriosis, salmonellosis, pasteurellosis.*

Enter. Veterinary medicine and animal husbandry have a special place in the economy of our republic, and great importance is attached to the development of this sector. The development and profitability of animal husbandry depends on factors such as increasing the number of cattle in state, farmer and private farms, increasing their productivity, having healthy children, taking care of them properly, and protecting them from various diseases. Bacterial infectious diseases of young animals are considered a great danger for animal husbandry. Infectious diseases such as pasteurellosis, salmonellosis and colibacteriosis, which occur among young animals, are an important economic problem in livestock breeding. The lack of biological and chemical drugs in the veterinary field further complicates the problem and contributes to the widespread spread of infectious diseases.

For the development of the livestock sector, it is necessary to create and implement new measures to effectively fight infectious diseases among farm animals. One of the most important problems facing veterinary science is the development, improvement and implementation of measures to diagnose, prevent and combat infectious diseases that occur among farm animals, especially young animals, and cause great economic damage. In order to eliminate the above-mentioned problems, it is necessary to make a deeper and comprehensive scientific interpretation of the situation that has arisen in addition to the observance of veterinary-sanitary requirements. Therefore, creating and applying effective methods and tools against infectious bacterial diseases of livestock is one of the urgent tasks of researchers.

Research materials and methods. Smears prepared from pathological samples are stained by Gram and Romanovsky-Giemza methods and viewed under a microscope. The shape and color of the bacteria found are recorded. The types of

bacteria and which ones are found the most are determined, and the results are recorded in journals.

From pathological samples, bacteriological cultures are planted in artificial nutrient media and grown in thermostats. The growth of bacterial cultures planted in nutrient media is monitored, the type, variety, color, and size of colonies are determined. These traits are cultivated in ordinary GPQ, GPA, Kitt-Tarottsi and selective Endo and Ploskirev media. Bacteria are separated according to the characteristics of the colonies. Pathologoanatomical examinations focus on changes in the sheep: the condition of the birds, changes in the mucous membranes, the condition of the body and blood, its color, the condition of the skin, etc.

When examining the internal organs, attention was paid to the external appearance of subcutaneous tissue, lymph nodes, blood vessels and parenchymatous organs, liver, kidneys, spleen, heart, spleen, reproductive organs, internal excretory glands, head and spinal cord.

When observing the changes in the body, the main focus is the size of the cells. density, color and changes in the surface were examined, and the condition, fullness and curvature of the tissues were focused on. Attention was paid to the serous and mucous membranes of the gastrointestinal tract, the condition of the small and large intestines, hemorrhagic inflammations, dystrophy, atrophy, and necrotic foci.

Histological examinations were performed on all studies. In this case, fragments are taken from organs: from the damaged and healthy tissues of the liver, kidneys, spleen, heart, pancreas and pancreas. Har is taken from pieces of intestine. The length and thickness of the pieces taken from the intestines should be 2-3 cm, and the thickness of the samples taken from the intestines should be 0.5 cm. All examinations are summarized according to pathologo-anatomical changes.

Results and their analysis. In mixed infectious diseases, clinical signs vary depending on the course of the disease and the virulence of the causative agent. If the diseases are acute, the disease becomes complicated and very severe. In addition, clinical signs change depending on the type and amount of pathogens in the body. For example, when the causative agents of pasteurellosis and colibacteriosis are found in the same organism, their clinical symptoms change as follows: they have weakness, tremors, refusal to feed, wheezing on the second day, frequent bed rests, redness of the mucous membranes, an increase in body temperature up to 42.0-42.5 ^{0}C and bloody diarrhea is observed.

When the causative agents of pasteurellosis and salmonellosis are found together, these calves and lambs are also weak, head bowed, loss of appetite, and on the second day of the disease, they refuse to feed due to lack of appetite, increase in body temperature, and increased breathing. They have liquid blue diarrhea and paralysis of the legs.

When diseases such as pasteurellosis, colibacteriosis, and salmonellosis occur together, it is observed that the clinical signs are somewhat complicated in calves. They have bloody diarrhea, discharge of purulent exudates from the nasal cavity, formation of swellings in the chest and abdominal cavities, an increase in body temperature to 40.5-41 ^{0}C, as well as bloody and purulent diarrhea and paralysis of the legs.

Thus, in terms of clinical signs, complex and profound changes are observed in calves or lambs infected with two or three pathogens compared to animals infected with individual pathogens. However, it is very difficult to distinguish these diseases from each other based on clinical symptoms only, therefore, it is advisable to examine them pathologically and pathologically.

Pathologoanatomical changes. When pasteurellosis and colibacteriosis diseases occur together in calves, pathologo-anatomical changes are somewhat complex and differ in their permanence. In this case, it is noticeable that the bodies are very thin, not hardened, frothy liquid flows from the mouth and nose, in some cases this liquid is mixed with blood, hyperemia is formed in the mucous membranes, especially in the conjunctiva, the area around the anus is contaminated with liquid yellow feces, and the skin is discolored. Blood vessel fullness is observed mainly in the subcutaneous cells and in the gastrointestinal tract. Dotted hemorrhages in serous membranes, blood vessels filled with blood are observed in all infected calves.

The enlargement of the heart and increased punctate hemorrhages, and the accumulation of frothy mucus in the bronchial and alveolar cavities, as well as the presence of several atelectatic foci are noticeable.

The main and permanent changes are in the spleen, its size is increased, spotty and spotted hemorrhages are noted on its surface, and the main changes are observed in the gastrointestinal tract. That is, it is important to have 2-3 wounds of 0.5 cm in the muscular and glandular stomach.

When pasteurellosis and salmonellosis diseases occur together, swellings are formed in the calf's body, i.e., in the subcutaneous cells around the head, neck, anus, and foamy liquid mixed with blood flows from the oral cavity.

At autopsy, fullness of blood vessels in the lungs and gastrointestinal tract of calves, point and spot hemorrhages in the serous membranes are common. The lungs are enlarged, pale red in color, with dotted hemorrhages on the surface, the liver is much enlarged, with dotted and spotted hemorrhages on the surface, hyperemia and hemorrhagic processes are observed in the kidneys.

It is expressed by the presence of black substance mixed with mucus in the mucous membranes of the stomach, the presence of small point hemorrhages, erosion and ulcers. The size of the spleen is slightly increased, there are small hemorrhages on the surface, and the pulp is dark red when cut.

Catarrhal-hemorrhagic inflammation of the mucous membranes of the intestines, spotty hemorrhages, especially several ulcers of 1-2 cm in size are found in the intestines.

When diseases such as pasteurellosis, salmonellosis, and colibacteriosis occur together, the calf's body is thin, the external mucous membranes are hyperemic, the cloaca area is contaminated with liquid feces, and the lymph nodes under the wing are swollen. In the acute course of the disease, the liver and spleen are enlarged, blood stasis in the blood vessels, numerous hemorrhages on the surface, paratyphoid nodules characteristic of salmonellosis are formed in the liver, and spot-like hemorrhages are observed on the surface of the enlarged kidneys.

In the chronic course of the disease, diphtheritic inflammation of the lungs, its densification, reduction of the size of the liver, spleen, dot, spotted hemorrhages in the mucous membranes of the stomach and intestines, and a large accumulation of mucus in the rennet, dystrophic-necrotic changes, hemorrhagic inflammations and ulcers are common.

In some places of the spleen, there are small hemorrhages, the lymph nodes in the mesentery of the intestines are inflamed, hemodynamic and dystrophic changes in the kidneys are strongly developed, the capsule is also enlarged and filled with fibrinous liquid.

Thus, the clinical signs and pathologoanatomical changes in calves are very complex and are fundamentally different from other diseases. But if it is analyzed with good attention, a correct diagnosis will be made in time, and it will be possible to take preventive measures against diseases in time.

Pathohistological changes. In the myocardium of calves infected with pasteurellosis and colibacteriosis, blood vessels are dilated, filled with blood, various hemorrhages around muscle fibers are observed. The spaces around the veins are much enlarged and swollen. The cavities of most alveoli are filled with erythrocytes, the respiratory capillaries are also expanded and filled with blood elements, in some places there is blood stagnation and focal hemorrhages. The connective tissues are loose, partially homogenized. The interstitial tissue is infiltrated with fibroblasts, leukocytes, and rarely bacterial collections.

The histological changes in the liver are more profound and are characterized by blood circulation disorders, dystrophic and inflammation of vascular walls.

The adventitial layer of the vascular walls of the spleen is thickened, partially loosened, and its fibers are homogenized. Small foci of bleeding can also be seen.

Hyperplastic processes are strongly developed in the lymph nodes. Perivascular tumors are formed. Characteristic histological changes in the kidneys are often expressed by the expansion and filling of blood vessels, diapause hemorrhages.

Vascular expansion, fullness, focal extravasates, perivascular serous edema are the main changes in the gastrointestinal tract.

Catarrhal inflammatory processes in the mucous membranes of the intestines are sharply developed. Focal erosion and necrosis occur in many parts of the intestines. Calves infected with mixed diseases of pasteurellosis and salmonellosis have dilated heart blood vessels, and around some vessels where the endothelium is displaced, cell clusters consisting of histiocytes, lymphocytes and leukocytes are much more than calves infected with pasteurellosis and colibacteriosis.

Although the histological changes in the liver are similar to the diseases of pasteurellosis and colibacteriosis, they differ from them with the necrotic nodules that occur in the liver parenchyma.

Small hemorrhages and lymphoid collections are visible in some areas of the spleen. The trabeculae are swollen, the appearance of the fibers is unclear, hemodynamic and dystrophic changes in the kidneys are strongly developed, the capsule is also expanded, filled with fibrinous fluid.

Histological changes in the gastrointestinal tract are very strong and complex. Because both stimuli mainly affect these organs more. These changes consist of serous-catarrhal, catarrhal-hemorrhagic inflammations, dystrophic and necrotic processes in the mucous membranes of the glandular stomach and intestines.

Summary. Thus, the clinical signs and pathomorphological changes in calves are very complex and differ significantly from other diseases. But if analyzed with good attention, a correct diagnosis will be made in time, and it will create an opportunity to take preventive measures against these diseases without delay.

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