

## PATHOLOGO-ANATOMIC CHANGES IN PODODERMATITIS WITHOUT PURUS IN BREEDED COWS

Pardaev Sh.A.

Basic Doctoral Student

Dilmurodov N.B.

Scientific Supervisor, Doctor of Veterinary Medicine, Professor

Samarkand State Veterinary Medicine

University of Animal Husbandry and Biotechnology

**Аннотация.** Изучены патологоанатомические изменения при асептическом пододерматите породистых коров. У коров, зараженных асептическим пододерматитом, наблюдается отек эпидермиса передней и боковых сторон копытной каймы, покраснение основы кожи и подкожного слоя, утолщение коллагеновых и эластических волокон, отек задней части эпидермиса в месте перехода копытной каймы на мякиш, покраснение основы кожи и подкожного слоя, утолщение их волокон, скопление в межтканевом пространстве мутной серозно-фибринозной жидкости. Установлено, что сосочки основы кожи и подкожного слоя копытного венчика подвержены гиперплазии и гипертрофии, некоторые участки сосочкового слоя основы кожи красные зернистые или бархатистые.

**Resume.** Pathoanatomical changes in aseptic pododermatitis of pedigree cows have been studied. In cows infected with non-suppurative pododermatitis, there is swelling of the epidermis of the anterior and lateral sides of the hoof border, redness of the base of the skin and subcutaneous layer, thickening of collagen and elastic fibers, swelling of the posterior part of the epidermis at the junction of the hoof border with the crumb, redness of the base of the skin and subcutaneous layer, thickening their fibers, accumulation of turbid serum-fibrinous fluid in the interstitial space. It has been established that the papillae of the base of the skin and the subcutaneous layer of the hoof corolla are susceptible to hyperplasia and hypertrophy, some areas of the papillary layer of the base of the skin are red granular or velvety.

**Ключевые слова:** породистые коровы, асептический пододерматит, патологоанатомический, копытная кайма, основа кожи, мякиш, серозно-фибринозный, гипертрофия, мутная жидкость, сосочковая оболочка, копытный венчик, гиперплазия.

**Key words:** thoroughbred cows, aseptic pododermatitis, pathological, hoof border, skin base, crumb, serous-fibrinous, hypertrophy, turbid liquid, papillary membrane, hoof corolla, hyperplasia.

A large number of heifers with high productivity imported from foreign countries are Holstein-Friesian breed. These cows have high milk yield. In almost all regions of our country, complexes have been built for them without special ties. Diseases of the distal part of the feet,

i.e. the hoof, are becoming a serious problem on most farms. Therefore, it is one of the urgent issues to study the incidence of this pathology and the etiological factors, clinical symptoms, and pathomorphological changes that cause them.

According to the information of local and foreign researchers, foot diseases are the main non-infectious diseases in animals kept in livestock complexes and farms. According to the authors, it mainly manifests itself in the form of injuries, stretching of joints, purulent-necrotic lesions of hooves, and as a result of diseases of the distal part of the legs, the useful life of breeding animals is shortened, and it causes significant economic damage due to a sharp decrease in productivity [3, 5, 8, 9, 10 ].

According to the authors, the implementation of all veterinary work on the treatment of foot diseases, cleaning and treatment of hooves and other preventive measures in a veterinary department equipped with an animal fixation device eliminates bacteriological contamination of the building and the environment, reduces the amount of treatment costs, and improves productivity. increases, ensures that cows are kept for 4-8 lactations and reduces herd rotation by two to three times [1].

According to the researchers, the high level of haptoglobin is the main diagnostic indicator of purulent-necrotic pathologies of the fingers in cows. It was found that the joint development of orthopedic diseases and metritis leads to an increase in the index of ceruloplasmin and haptoglobin in the blood of cows [2].

Scientific research was carried out on the diagnosis of diseases of the legs of cattle in farm conditions, and according to the authors, swelling, pain and fluctuation in acute aseptic subcutaneous bursitis, passive movement, imperceptible lameness, elastic swelling in chronic serous-fibrous bursitis, crepitation when punctured, bursolites. and clinical signs such as the presence of fibrins in the bursa wall, yellowish exudate containing fibrin fragments, and locomotor disturbance were observed[4].

In dairy cows, surgical diseases of the feet were studied, and in high-yielding cows, surgical diseases were 84% compared to general diseases. In most cases, bursitis, particularly tarsal joint bursitis, is noted [6].

Scientific studies were carried out to determine the effect of movement activity on the quality of hoof horn material of cows, and it was noted that high movement activity thickens the shell of the tubes and reduces the erosion of the core, which in turn improves the morphometric indicators of the horn material of the hoof [7].

Goals and objectives. Determining the pathologoanatomical changes that occur in aseptic pododermatitis of imported cows in farms was considered the main goal of the investigation.

Research object and methods. The post-mortem diagnosis was carried out on 10 forcibly slaughtered cows infected with aseptic pododermatitis, based on the identification of pathological changes in the hooves, at the "Konigil Animal Slaughter" point of the Samarkand Region Veterinary Department, in the "Siyob-Shavkat-Orzu" cattle breeding complex in the

Okdarya District of the Samarkand Region. Pathomorphological examinations of Samarkand Region were studied macroscopically in the "Gavda ryoshy" department of the "Animal Anatomy, Histology and Pathomorphology" Department of the State Veterinary Medicine, Animal Husbandry and Biotechnology University. Pathological changes in the hooves were examined by cutting the hoof capsule with a grinder and opening its internal elements.

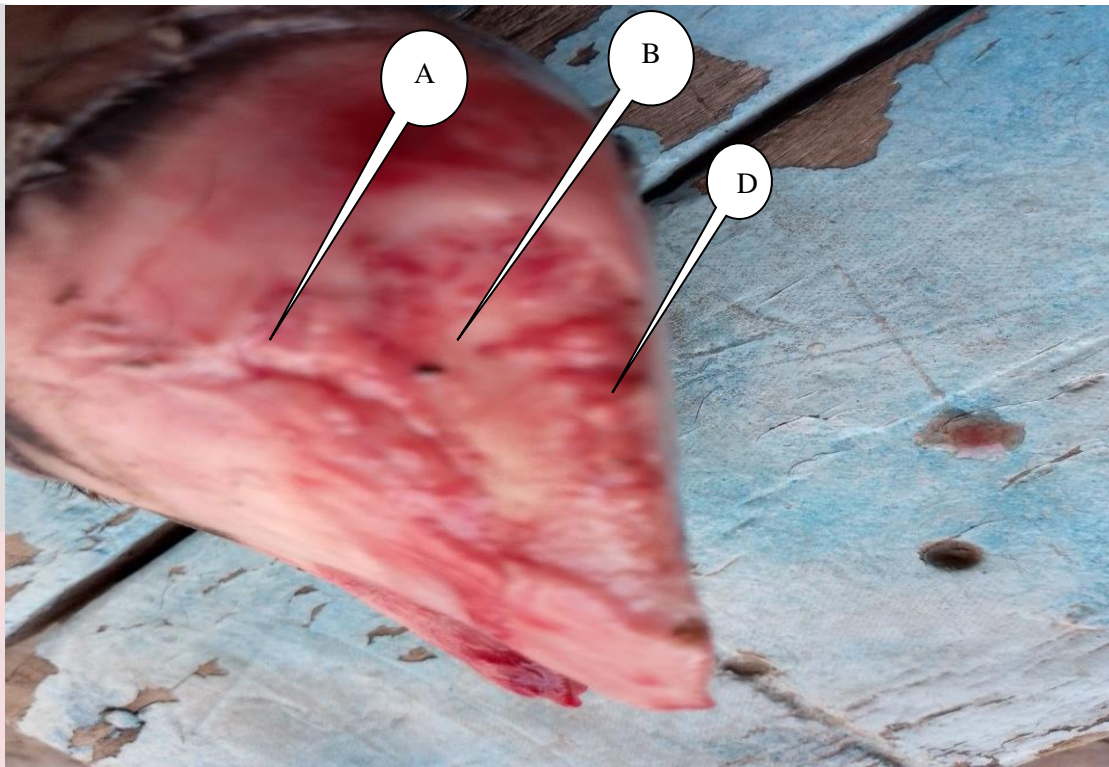
Research results. Cows infected with pododermatitis without suppuration have swelling in the epidermis of the front and sides of the hoof ridge (A), its skin base (dermis) and subcutaneous layer (hypodermis) are red, collagen and elastic fibers are thickened, serous-fibrinous, dull and small. a turbid fluid containing fibrin fragments was separated. In the back part of the hoof, which passed to the soft heel, there was swelling in the epidermis, reddening of the skin base (dermis) and subcutaneous layer (hypodermis), thickening of fibers, and the presence of serous-fibrinous cloudy liquid in the tissue space (Fig. 1).

The skin base of the hoof ring (B) was clearly seen after the horn layer was removed or when it was cut longitudinally, swelling and redness in the skin base and subcutaneous tissue and the rounded and elongated papillae of the dermis, and a large number of blood vessels were dilated under the skin (dermis) of the hoof ring. It was found that the papillae of the skin base and subcutaneous tissue of the hoof circle underwent hyperplasia and hypertrophy, as a result, some areas of the papillae membrane of the skin base became red granular or velvety, and there was a serous-fibrinous cloudy liquid in the papillae layer of the skin base and the soft tissue space. (Fig. 1).

The presence of swelling and redness in the papillary (leaflet) and reticular layers of the skin base of the hoof wall (D), the papillary layer of the skin base of the hoof wall and the space between the hoofs are covered with fibrin clots and clots, forming a thick film on the surface of the papillary layer of the skin base of the hoof wall, as a result the soft tissue is significantly thickened. The inner surface of the hoof wall, the papillary layer of the skin base, is dry and uneven, and such cases can be found even in areas without fibrin coating. When the hoof wall is separated from the hoof wall, a flat rosette is visible, different from the normal hoof skin layer, and in some cases it is impossible to separate the fibrin. It is attached to the papillary layer of the base of the hoof skin. The number of papillae of the papillary layer of the skin base of the hoof wall is reduced and reduced, and in some places they are not visible at all, instead of them, ulcers have formed. It was also observed that the wall of the hoof was stuck to the other wall in the space between the mastoid layer of the base of the skin and the hoof heel.

Due to the fact that there is a lot of blood and nerve tissue in the mammary layer of the skin base of the hoof wall, pododermatitis is easily affected by mechanical and other influences at the beginning of the process. Under the influence of etiological factors, a reactive inflammatory tumor appeared in the mastoid layer of the skin base of the hoof wall and in the teats. The reddening of the veins in the papillary layer of the skin base of the hoof wall caused

the accumulation of serous-fibrinous exudate in the cavity of the papillary layer of the hoof skin base and the heel of the hoof, the expansion of the vessels and



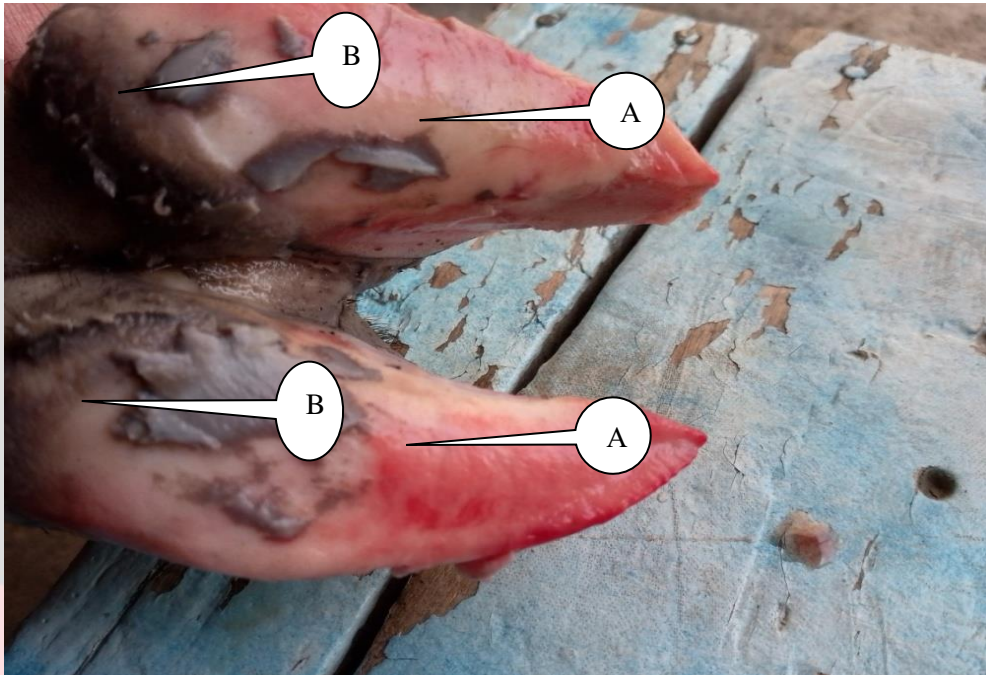
Picture 1. In non-purulent pododermatitis, hoof ridge (A), hoof circumference (B) and hoof wall (V) in the base of the skin and subcutaneous tissue, and the round and elongated papillae of the dermis are swollen and reddened with a large number of dilated blood vessels. which led to the accumulation of large amounts of fibrin. The exudate poured into the cavities changed its appearance and cell composition. In this case, an increase in the amount of blood cells was observed in the liquid in the cavity of the hoof wall skin base and hoof heel. In place of weakened teats, hoof wall skin base mammary shell covering layer was restored, and scars were formed as a result of formation of connective tissue (Fig. 1).

In the place where the back part of the skin base of the hoof wall joins with the hypodermis of the soft heel, it was noted that there is swelling and redness in the hoof wall papillae (leaflets) and reticular reticular layers, the soft tissue fibers are thickened, and there is a serous-fibrinous cloudy fluid in the tissue space.

Some parts of the white line of the hoof were separated from the outer boundary of the hoof palm (A) with the hoof wall, when the cornea was cut and cleaned with a hoof knife, some parts of the cornea became yellow or black, and some hooves had a double palm cornea (Fig. 2).

The base of the skin of the hoof palm is reddened with papillae (sheets) and reticular reticular tissue, collagen and elastic fibers are thickened, serous-fibrinous, turbid and cloudy liquid with fibrin was released from the interstices. In the upper part of the palm of the hoof adjacent to the soft heel, swelling, thickening of the reddened fibers of the skin base (derma) and

subcutaneous layer (hypoderm), presence of serous-fibrinous cloudy liquid in the tissue space was noted (Pic. 2).



2- Pic. In non-purulent pododermatitis, the skin base of the hoof palm (A) and soft heel (B) is reddened with papillae (sheets) and mesh-like reticular tissue, collagen and elastic fibers are thickened, serous-fibrinous, turbid, and fibrin-containing turbid fluid is collected from the interstices.

Anatomically and functionally, the soft heel (B), which is attached to the hoof parts, has a wedge shape, its base is on the back, between the inner and outer parts of the hoof wall, and the top along the palmar plantar (base) surface almost reaches the tip of the hoof (front). The base of the wedge-shaped soft heel in the back (heel) part of the hoof, which occupies almost the entire surface of the hoof, is the soft heel pad (dorsal part of the soft heel), and its peak is the epidermis, dermis, and hypodermis of the palm (ventral) part of the soft heel.

It was found that there is swelling and redness in the dense connective tissue on the basis of the skin of the soft heel, the mesh layer and the tip of the teat-like hoof, the presence of a large number of small, relatively equal-sized, elongated, round teats, the thickening of soft tissue fibers, and the presence of serous-fibrinous cloudy liquid in the tissue space. In the hypodermis of the palm (ventral) part, which is based on the skin of the soft heel, the integrity of the blood vessels was broken and small blood clots were observed (Pis. 2).

### Summary.

1. In cows infected with non-purulent pododermatitis, swelling in the epidermis of the front and sides of the hoof ridge, redness of its skin base and subcutaneous layer, thickening of collagen and elastic fibers, swelling in the epidermis of the back part of the hoof ridge that has

passed to the soft heel, redness in the skin base and subcutaneous layer, in the fibers thickening and accumulation of serum-fibrinous cloudy fluid was observed.

2. It was noted that aseptic pododermatitis in purebred cows occurs with hyperplasia and hypertrophy of the skin base of the hoof and subcutaneous tissue papillae, some areas of the skin base papillae become red granular or velvety.

3. In aseptic pododermatitis of cows, the inner surface of the papillae layer of the base of the hoof skin is dry, when the papillae layer is separated from the hoof wall, a flat pink surface different from the papillae layer of the base of the hoof skin is visible, the number of nipples of the papillae layer decreases and shrinks, the gap between the papillae layer and the heel of the hoof is visible. characterized by the adhesion of one wall to another in the cavity.

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