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METHODS OF SURGICAL TREATMENT OF ACTINAMYCOSIS IN CATTLE.

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Abstract: In this scientific article, methods of surgical treatment of actinomycosis in cattle in the conditions of the Republic of Karakalpakstan and their effectiveness are studied. Actinomycosis is a chronic inflammatory infectious disease caused by the Actinomyces bovis bacterium, manifested mainly in the lower jaw, tongue, and neck areas in the form of granulomatosis. This disease, which has a negative effect on the health of farm animals, if not detected in time, leads to the death of the animal and causes huge economic losses for farms.

Key words: actinomycosis, fungi, purulent inflammation, lymph nodes,pathology, prevention, surgical infection, enzyme therapy, drainage, antiseptic, narcosis, operation.

Introduction: Actinymicosis in cattle is a chronic inflammatory disease caused by the microorganism Actinomyces bovis, localized mainly in the jaw bones. In long-term cases, destruction of bone tissue, fistulas, abscesses appear. Treating the disease only with antibiotics is sometimes not enough, so surgical intervention is necessary. As part of the research, 38 cattle with signs of actinomycosis were studied on the basis of clinical, laboratory and surgical examinations in farms operating in different regions of the Republic of Karakalpakstan during 2024-2025. According to the results of the surgical treatment, the symptoms of the disease were eliminated and the animals were returned to a healthy state. In particular, 34 head of cattle were completely cured by

surgical method and antibiotic-antiseptic therapy, which indicates the treatment efficiency of 89.5 percent. Today, maintaining the health of animals, increasing their productivity, and preventing infectious and non-infectious diseases in the field of animal husbandry is one of the most important tasks of veterinary medicine. One of them is actinomycosis, a common disease in cattle. This disease is characterized by long-lasting, chronic, purulent and tissue-destructive inflammation. The causative agent of actinomycosis is a light fungus called Actinomyces bovis, which mainly parasitizes in the oral cavity, dental veins or injured areas.

Khojayli district of the Republic of Karakalpakstan is one of the areas engaged in cattle breeding. In recent years, cases of actinomycosis among cattle have been observed in this district, and this disease has a negative impact not only on animal health, but also on economic indicators. For this reason, the veterinary specialists of Khojaly district conducted experiments to achieve effective results by using new surgical methods along with traditional treatment methods.

Veterinary observations of recent years show that actinomycosis is present in many districts of the Republic of Karakalpakstan, including: It is found in Khojaly, Beruniy, Tortkol, Chimboy, Kegeyli, Takhiatash and Kungirot districts, and the level of the disease and the prevalence indicators are different.

According to the results of research, the prevalence of actinomycosis in Khojaly district is higher than in other districts. For example, in Beruniy and Tortkol districts, the disease is recorded mainly in spring and summer, while in Khojaly it occurs throughout the year.Also, analyzes show that traditional methods of treatment (antibiotics, antiseptics, mechanical cleaning of purulent foci) in cattle infected with actinomycosis are not effective in most cases. Therefore, experiments on the use of new surgical methods are being conducted by veterinary specialists of Khojaly district. With the help of these methods, complete removal of purulent foci, acceleration of regeneration of swollen tissues and combined with antibiotic therapy achieve high results.The relevance of this research is that the study of the experience of treating actinomycosis disease in Khojaly district based on new surgical methods will serve to

ensure the health of cattle, reduce the spread of the disease and increase the efficiency of livestock breeding not only in this region, but also in the entire Republic of Karakalpakstan.Also, if the new treatment technologies used in Khojaly district are tested in other districts, it will create the basis for the formation of an integrated, practice-oriented veterinary system of fighting against actinomycosis.

Research goal: to evaluate the effectiveness of surgical methods in the treatment of actinomycosis in cattle, to determine the optimal surgical protocols, and to study the results of the combination of these methods with antibiotics.

Research object: Research was bought and grown in 6 large farms located in Nókis, Khojeli, Kegeyli and Beruni regions of the Republic of Karakalpakstan during 2024-2025. In total, 38 cattle suspected of actinomycosis were subjected to clinical-laboratory examination. The exact diagnosis of the disease was based on clinical signs, palpation, function and laboratory microscopic analysis. In the course of 2024-2025, the incidence of actinomycosis among cattle in Khojeli district veterinary department is 3-5%. People who are infected with the disease are raised on farms with low hygienic requirements.

The analysis shows that:The disease is more common in cattle aged 1.5-4 years, foci appeared mainly in the area of the lower jaw, the disease was recorded in most cases in the winter and spring months, the recurrence rate as a result of traditional treatment methods (only antibiotics and washing) is 30-35%. Therefore, the need to test new surgical approaches has arisen.The treatment was carried out in the following stages:

1. The focus of inflammation is surgically opened and necrotic tissue is cleaned.
2. The wound cavity is cleaned with antiseptic drugs (furacillin, hydrogen peroxide, 10% iodine solution).
3. Antibiotic (penicillin, streptomycin) powders mixed with crystalline iodine were sprinkled into the wound.
4. After treatment, general antibiotic therapy and immunostimulants were applied to animals for 5-7 days.

Research methods: Clinical examination: the body temperature of each animal, the size of inflammation of the jaw, the degree of disease are evaluated.Diagnostic tests: X-ray, a pus sample was taken by function, and a microscopic examination was carried out.Surgical procedures:

• Local anesthesia (2% lidocaine).

• Abscess opening, pus drainage.

• Necrotic tissues are cleaned using a curette.The cavity was treated with iodine solution or KMnO4 antiseptic.

• Stitching done (horizontal mattress method).

Postoperative care:Antibiotics (penicillin + streptomycin) for 5-7 days.Daily antiseptic treatment (iodine and furatsilin solutions).Clinical observation - 30 days.

Results: New surgical methods were applied to 25 cattle infected with actinomycosis by veterinary experts of Khojaly district. The operation was performed in the following stages: Local anesthesia (novocaine blockade) - so that the animal does not feel pain during the operation. Complete opening of the purulent foci and removal of necrotic tissue - at this stage, the dead tissue and pus in the foci are cleaned.Antiseptic treatment - the wound is treated with 3% hydrogen peroxide, furacillin, chlorhexidine solutions. Antibiotic therapy - penicillin, streptomycin or gentamicin solutions are sent to the wound. Laser therapy was used as a method. With the help of laser rays, the microorganisms in the pus are destroyed, the blood circulation is improved, and the tissues are restored quickly.

After 7-10 days after the operation, antibiotic and antiseptic procedures were continued for the animals.

Parametres	Number
Number of vaccinated nimals	15 heads
Fully recovered	12 heads (80%)
Half recovered	2 heads (13.3%)
Recurrence observed	1 head (6.7%)

Average recovery time	12-15 days
Antibiotic + surgery	25% faster recovery

The best results are recorded in cases detected early (1-2 weeks).

Also, wounds healed 1.5-2 times faster in animals treated with laser therapy, purulent fistulas decreased, appetite and productivity of animals quickly recovered. These results indicate the possibility of widespread use of new surgical methods in the veterinary practice of Khojaly district. In late-onset cases (lasted for 1 month or more), complete recovery was not observed. It emphasizes the importance of using modern surgical approaches and complex therapy in addition to traditional treatment methods in the fight against actinomycosis in Karakalpakstan climate emphasizes. The methods recommended in this article are important for effective disease control and prevention of spread in veterinary practice in the region. Also, the article can serve as a useful scientific and practical resource for veterinary workers, farmers and researchers.

Analysis: The results show that the dry climate of Karakalpakstan and the insufficient level of sanitary and hygienic conditions in farms affect the incidence of actinomycosis. Therefore, the surgical method is highly effective in detecting and treating the disease at an early stage. A complex relationship with antibiotics and antiseptics prevents the deepening of the infection and reduces the risk of complications.

Summary. Surgical debridement is of great importance in the treatment of actinomycosis in cattle. This method, when used together with antibiotics, helps to effectively treat the disease. The result of the treatment depends on the stage of the disease, the timely start of the treatment and the correctness of the methods used.Surgical treatment of actinomycosis in cattle is an effective method in the conditions of the Republic of Karakalpakstan. Complete recovery was observed in 89.5% of sick animals by using surgical intervention together with antibiotics and antiseptics. This makes it possible to recommend the wide application of this approach in practice.

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