



## ETIOLOGY, FREQUENCY AND CLINICAL MANIFESTATIONS OF PURULENT INFLAMMATION OF THE FINGER JOINT IN SPORT HORSES

Niyozov Kh. B.

Samarkand Institute of Veterinary Medicine

Davronov M. Kh.

Samarkand Institute of Veterinary Medicine

### Annotation

Clinically examined 203 horses from farms of the Samarkand region, of which 30 (14.7%) animals were diagnosed with acute purulent synovitis, chronic purulent synovitis and purulent arthritis of the joints of the fingers. Of these, acute purulent synovitis in 7 animals and 23.4% of these common joint pathologies, chronic purulent synovitis in 17 animals (56.6%) and 6 (20%) animals showed the onset and clinical manifestations of purulent arthritis. Characterized by synovitis of the joint, general weakness, loss of appetite, severe pain on palpation, an increase in general body temperature and local temperature.

**Keywords.** Sports horses, arthritis, purulent inflammation, acute purulent synovitis, chronic purulent synovitis and purulent arthritis, trauma, dislocations, etiology, pathogenic microorganisms.

**Аннотация.** Самарқанд вилояти хўжаликларидан жами 203 бош от клиник текширилганда ундан 30 бош (14,7%) ҳайвонлар бармоқ бўғимларида ўткир йирингли синовит, сурункали йирингли синовит ва йирингли артрит касалликлари аниқланди. Улардан 7 бош ҳайвонда ўткир йирингли синовит ва бу умумий бўғин патологиясининг 23,4 % ни, сурункали йирингли синовит 17 бош (56,6%) ва 6 бош (20 %) ҳайвонда йирингли артрит жараёнларининг бошланғич ва клиникаси яққол намоён бўлган жараёнлари кечаётганлиги ва туёқ бўғини сурункали йирингли синовит жараёнлари кечаётган ҳайвонларда, умумий ҳолсизланиш, иштаҳанинг пасайиши, пальпация қилинганда кучли оғриқ сезиш, умумий тана ҳарорати ва маҳаллий ҳароратнинг кўтарилиши характерли бўлди.

**Калит сўзлар.** Спорт отлари, бўғим, йирингли яллиғланишлар, ўткир йирингли синовит, сурункали йирингли синовит ва йирингли артрит, шикастланишлар, жароҳатлар, этиология, патоген микроорганизмлар.

**Аннотация.** Клинически обследовано 203 лошади из хозяйств Самаркандской области, из которых у 30 (14,7%) животных диагностированы острый гнойный синовит, хронический гнойный синовит и гнойный артрит суставов пальцев. Из них острый гнойный синовит у 7 животных и 23,4% этих общих патологий суставов, хронический гнойный синовит у 17 животных (56,6%) и 6 (20%) животных показали начало и клинические проявления гнойного артрита.



Характерны синовит сустава, общая слабость, потеря аппетита, сильная боль при пальпации, повышение общей температуры тела и локальной температуры.

**Ключевые слова.** Спортивные лошади, артрит, гнойное воспаление, острый гнойный синовит, хронический гнойный синовит и гнойный артрит, травмы, вывихи, этиология, патогенные микроорганизмы.

**Relevance of the topic.** In our country, some of these diseases are widespread and severe for the reasons indicated above, which complicates the therapeutic balance and causes great economic damage. In some cases, joint diseases range from 9 to 11%. Premature deregistration of animals sometimes leads to their death. It is important to note that finger joint disease causes more joint disease due to mechanical trauma to the joints located on the fingers. Although the problems of veterinary arthrology have been studied for a long time, many aspects are not yet fully understood, the treatment and prevention of the development of the origin of the disease must be scientifically substantiated.

On the farms of the republic, especially in horse breeding farms, purulent inflammation of the ankle joints is widespread among animals, causing great economic damage to farms. For example, the incidence of purulent arthritis in horses is 6%, with an increase in body weight per head by 25-35 kg and a decrease in their growth rate by 28-30%. (1,6,7,8,).

As a result of injuries, purulent inflammatory processes of the joint are observed, characterized by severe pain, swelling, redness, increased local temperature and dysfunction, vascular hyperemia and an increase in their permeability. Open wounds in the joints cause lysis of damaged soft tissue cells due to the fall, development and growth of pathogenic microorganisms, accumulation of purulent-serous exudate, excitation of nerve receptors in the surrounding vascular wall, which leads to cell swelling. (1,2,3,4,).

Open wounds of various shapes and depths as a result of exposure to strong mechanical factors in the joints and ingestion of streptococci, staphylococci, bacteria, bacilli, Escherichia coli and other aerobic and anaerobic pathogenic microorganisms cause purulent synovitis, capsular flagella, purulent arthritis. (5,6,7,8).

**Place, object and research methods.** A clinical examination of horses of various breeds of horse breeding farms, horse races, horse clubs and private horse owners of the region's districts was carried out. At the same time, the examination of horses participating in the "kupkari" games was carried out by general and special methods. Clinical examinations included body temperature, respiratory and heart rate, general condition, location of the lesion, and mechanism of transmission.

**Analysis of the results obtained.** Injuries of sports horses and trained horses, as well as the main factors causing acute purulent synovitis, chronic purulent synovitis and purulent arthritis, mainly in the joints of the fingers, are the presence of glass fragments, wire, metal fragments and stones with sharp edges, in the steppe, on stony and uneven areas, due to deep holes dug by rodents.



Games "Kupkari" are unique in each region, the weight of a goat is from 30-35 kg to 65-70 kg, in a herd formed to obtain a goat, horses step on each other's feet, bite, kick, move at right angles at a sharp speed to the right or to the left with a heavy load and as a result, the balance and coordination of movements are disturbed, falls, the joints are injured, and in the pathological plane the origin of streptococcus, staphylococcus, bacteria, bacilli, acute purulent synovitis, chronic suppurative synovitis and purulent arthritis from pathogenic microorganisms in aerobic and anaerobic forms is revealed.

The level and etiology of regional morbidity of acute purulent synovitis, chronic purulent synovitis and purulent arthritis caused by bruises and injuries received during equestrian games with horses participating in the Kupkari games of livestock and farms in the region have been determined and studied.

Table-1. The incidence of purulent diseases of the joints of horses in livestock and farms.

s/ n	Name of the farm	Number of ani-mals ex-aminad	Sick animals		Acute synovitis		Chronic synovitis		Chronic periarticular fibrosis	
			quan-tity	%	quanti-ty	%	quanti-ty	%	quan-tity	%
1	Samarkand district of Samarkand region	25	5	20	1	20	3	60	1	20
2	Jambay district of Samarkand region	18	4	22,2	1	25	2	50	1	25
3	Urgut district of Samarkand region	34	8	23,5	2	25	4	50	2	25
4	Horsemen of the limited liability company "Tur Orient Triel" of the Samarkand region.	126	13	10,3	3	23,1	8	61,5	2	15,4
5	Total:	203	30	14,7	7	23,4	17	56,6	6	20

Surgical examination of 203 horses from the districts of the Samarkand region revealed that 30 heads of 14.7% of sports horses were diagnosed with acute purulent synovitis, chronic purulent synovitis and purulent arthritis in the joints.

During the medical examination of 25 animals from the farms of the Samarkand district of the Samarkand region, joint pathology was detected in 5 animals (20%), including 1 head (20%) with acute purulent synovitis of horses, in 3 animals (60%) of animals with chronic purulent synovitis and 1 head (20%) of the horse has purulent arthritis. During a clinical examination of 18 animals from the farms of the Dzhambay district of the Samarkand region, 4 heads (22.2%) had pathology of the joints of the fingers, including 1 head (25%) of the horse with acute purulent synovitis, 2 heads (50%) of animals had chronic purulent synovitis and 1 head (25%) of the horse reported purulent arthritis. (table-1)



Clinical examination of 34 heads of animals from the farms of the Urgut district of the Samarkand region in 8 heads (23.5%) revealed pathology of the joints of the fingers, including 2 heads (25%) of horses with acute purulent synovitis, in 4 heads (50%) the animals had chronic suppurative synovitis and purulent arthritis was found in 2 horses (25%) of horses.

During a clinical examination of 126 animals from the herd of the limited liability organization "Tur Orient Triel" in the Samarkand region, 13 heads (10.3%) were found to have joint pathology, including 3 heads (23.1%) of horses with acute purulent synovitis, 8 heads (61.5%) of animals have chronic purulent synovitis and 2 heads (15.4%) of horses have purulent arthritis.

It was noted that when inspections were conducted year-round, they were mainly observed during the fall, winter and spring months. The main reason for this is that one of the national sports games of our Kupkari people is often held at this time of the year.

Clinically examined 203 horses from farms of the Samarkand region, of which 30 heads (14.7%) of animals were diagnosed with acute purulent synovitis, chronic purulent synovitis and purulent arthritis of the joints of the fingers. Of these, 7 heads of 23.4% of animals had acute purulent synovitis and general pathologies of the joints, 17 heads (56.6%) of animals had chronic purulent synovitis, and 6 heads (20%) of animals clearly showed the onset and clinical manifestations of purulent arthritis.

In order to study the degree of damage to the leg joints in horses and their character, a clinical examination was carried out in animals and purulent processes of a different nature (acute purulent synovitis, chronic purulent synovitis, and purulent arthritis) were revealed in the distal part of the legs in 30 animals. Of these, 10 animals were diagnosed with acute purulent synovitis of the pelvic joint, 14 animals - chronic suppurative synovitis of the hoof joint, 6 animals - purulent arthritis of the hoof and round joints.

In animals with acute purulent synovitis, swelling of the joints of the brain, separation of pus from the wound, thickening of the capsules and an increase in local temperature were evident.

When the joints are palpated and passively moved, a quick defensive and painful response occurs. When the animal is at rest, it holds the injured joint in a bent position, which increases the size of the joint and reduces pressure and pain. When moving, the main form of lameness appears, and the pus accumulated in the joint begins to flow out. The general condition of sick animals worsened, an increase in body temperature was observed.

In animals with suppurative inflammation of the hoof joint, fatigue and an increase in body temperature of 1–2° C have been reported. It was noticed that the animals limped when moving, and while standing still, lifted the injured legs or pressed lightly on the hooked part of the hoof.

When examining the affected joints, clinical signs: the affected joints increased in size relative to symmetrical healthy joints, their shape changed, severe pain on palpation, a local increase in temperature, fluctuations (twitching of the fluid) in the joint diverticulum were noted. The joints are very painful with passive movement, and purulent exudate mixed with fibrin is released from the wound.



In five investigated heads of animals, an increase in body temperature from 1-2° degrees was observed. The animals have decreased appetite, they lie a lot, the injured joints are enlarged, swollen, the border is indistinct. Because of this, it was not possible to palpate the joint diverticulum.

For animals that have undergone chronic suppurative synovitis of the hoof joint, general weakness, loss of appetite, severe pain on palpation, an increase in general body temperature and local temperature are characteristic. The animals had a strong tingling sensation, light pressure on the tips of the hooves. The soft part of the hoof is swollen, tense, when the tumor ruptures, fluid is first released, then a thicker yellowish-blue purulent exudate.

In animals with typical clinical signs of purulent arthritis, general weakness, enlargement of the joints accompanied by an increase in body temperature, changes in the contour of the joint, tension of the diverticulum, and severe pain were also observed during passive movement. Palpation of the affected joints is characterized by pain, fluctuations, and a local increase in temperature. The animal rests on the tip of the hoof, while the patient's leg is bent. During movement, a strong degree of basal occlusion was observed, and from the effusion formed in the joint, a mixture of synovial fluid with a yellowish-blue purulent exudate was observed.

## CONCLUSION

1. Injuries of sports horses and the main causes of purulent synovitis and purulent arthritis in the joints - the presence of glass fragments, wires, sharp metal and stone fragments on the wiring and training grounds, playing "kupkari" games in the steppe, rocky and uneven terrain, horses gathered around a goat, press each other's feet, legs cause injuries in the joints and cause purulent inflammation in the joints from streptococcus, staphylococcus, bacteria from pathogenic microorganisms in aerobic and anaerobic forms.

2. Clinically examined 203 horses from farms of the Samarkand region, of which 30 heads (14.7%) of animals were diagnosed with acute purulent synovitis, chronic purulent synovitis and purulent arthritis of the joints of the fingers. Of these, acute purulent synovitis in 7 heads of animals and this is 23.4% of general pathologies of the joints, in 17 heads (56.6%) of animals chronic purulent synovitis and in 6 heads (20%) of animals showed the onset and clinical manifestations of purulent arthritis.

3. With purulent synovitis, the synovial layer is swollen, the synovial fluid is cloudy, the surface of the ridge, the surface of the cartilage covering the epiphysis and the diaphysis of the joint was uneven and small blood clots were observed, and it was found that some areas of the synovial layer had a red granular velvety shape due to hyperplasia and hypertrophy of the suckers synovial layer.

## List of used Literature:

1. Niyozov H.B., Zhuraev D. Some features of the etiopathogenesis of purulent arthritis in sport horses. // Veterinary medicine. - Toshkent, 2013. - № 1. -P.18-20. (16.00.00; №4).
2. Plakhotin M.V., Belov A.D., Esyutin A.V. and others. General Veterinary Surgery - Moscow Kolos 1981.
3. Borisov M.S. Aseptic synovitis in dogs // Journal of Veterinary Medicine. – 1991. - №7





4. S.V. Timofeev and others. "Surgical infections" Moscow 2006.
5. M.G. Karimov and others. Recommendation "Etiopotogenesis, Effective Methods for the Prevention and Treatment of Trauma in Participating Kupkari and Work Horses." Tashkent 2017.
6. Niyozov Kh.B., Ruziboev A.K., Pardaeva Sh. Purulent inflammation of the joints in sport horses. Integration of education, science and production into agriculture. Collection of materials of scientific and practical conference. Part II -Samarkand - 2018, pages 68-70.
7. Niyozov H., Dilmurodov N., Davlatov N. Treatment of aseptic diseases of limb distal part joints in Uzbek sport horses. "Journal of Microbiology, Biotechnology and Food Sciences", №12. 2016. P.478-481. Nitra. (Jurnal impact 0.29 INDEX COPER Nicus).
8. Niyozov H. Biological influence of autoblood on the organism of horses, irradiated with helium-neon laser rays. "The Way of Science international scientific journal" № 10 (32), 2016 Vol. 1. P. 44-46 Volgograd (Global Impact Factor, Australia 0.543).