

Occurrence of Surgical Diseases and Hoof Diseases in Horses in Bukhara City and Surrounding Districts

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	<p>Abstract</p> <p>This article presents the results of a monitoring study on the prevalence of hoof and tendon system pathologies in horses in the Bukhara region (Bukhara, Romitan, and Kogon districts) during 2025–2026. The incidence rate was found to range between 14.95% and 26.08%. Structural analysis revealed that aseptic serous tendovaginitis (37.04%) and laminitis (29.62%) were the most prevalent conditions. Additionally, tendon injuries and closed mechanical traumas accounted for 22.22% of cases. The findings indicate that excessive mechanical load, improper management, and unbalanced nutrition play a significant role in the development of distal limb pathologies. The study substantiates the importance of early diagnosis and the improvement of preventive measures in veterinary practice.</p>
<p>Keywords: Horses, distal limb pathologies, hoof diseases, tendon diseases, laminitis, tendinitis, tendovaginitis, aseptic inflammation, tendon injuries, veterinary surgery, orthopedic diseases, clinical diagnostics, horse health monitoring, equine locomotor system, sport horses, kupkari horses, preventive measures, veterinary orthopedics, musculoskeletal disorders, Bukhara region.</p>	

Introduction

Improving veterinary care among horses and further enhancing methods for combating limb diseases are closely linked with the implementation of the tasks set forth in the Decree of the President of the Republic of Uzbekistan No. PF-60 “On the Development Strategy of the New

Uzbekistan for 2022–2026.” Within the framework of the goal of rapid agricultural development, this document предусматривает the wide introduction of digital technologies and modern scientific achievements into veterinary practice. This, in turn, requires researchers to shift toward conducting animal health monitoring based on objective data and innovative diagnostic algorithms.

The strategy defines tasks for the widespread introduction of digital technologies into veterinary practice, the use of modern diagnostic methods, and the integration of scientific achievements with production. This, in turn, requires not only traditional approaches to assessing animal health, but also the creation of objective monitoring systems, early detection of diseases, and in-depth study of their development mechanisms. In particular, hoof and tendon apparatus diseases in horses often begin in a latent or subclinical stage and, if not detected in time, lead to severe complications..

At present, the wide use of horses in sports, transport, and national games significantly increases the load on their musculoskeletal system. As a result, the incidence of distal limb pathologies—particularly diseases such as laminitis, tendinitis, and tendovaginitis—is rising. These conditions not only reduce the animal’s working capacity, but also cause economic losses for farms and shorten the service life of sport horses..

In modern veterinary practice, a comprehensive approach to the detection and assessment of diseases—combining clinical, radiological, laboratory, and functional diagnostic methods—has become increasingly important. Such an approach makes it possible to more accurately reveal the etiopathogenesis of pathological processes, establish differential diagnoses, and develop effective treatment and preventive measures.

Relevance of the Topic

Pathologies of the distal part in horses—namely the hoof and tendon apparatus—are among the most common problems in veterinary practice and are one of the key factors directly affecting the animal’s working capacity and sporting performance. In particular, the widespread development of national equestrian games such as kupkari, the increasing intensity of horse use, overexertion, and factors such as improper care and feeding are contributing to the rise of these pathologies [2; pp. 10–11].

The early diagnosis of tendon and hoof pathologies, the identification of their etiological factors, and the development of effective preventive and treatment measures are of pressing scientific and practical importance for modern veterinary surgery and orthopedics. If these conditions are not detected in time, they can progress into chronic forms, severely limiting the animals’ locomotor function, causing economic losses, and shortening the period of use of sport horses [5; pp. 170–174].

For this reason, determining the prevalence of hoof and tendon diseases among horses in the farms of the Bukhara region, conducting an in-depth study of their etiopathogenesis, and improving effective practice-oriented preventive and treatment methods define the relevance of this research.

Research Results

Preliminary monitoring conducted in the Bukhara region during the 2025–2026 period revealed the following indicators at the district level:

Bukhara District: in this area, 107 horses were subjected to clinical examination.

According to the examination results, hoof and tendon system pathologies were confirmed in 14.95% of the total population (16 horses). Diagnostic analyses showed that in 4 cases, aseptic inflammation of the dermal lamina of the hoof wall (laminitis) was observed, while 6 cases involved acute aseptic tendovaginitis. In the remaining cases, tendon injuries and closed mechanical trauma (3 horses), purulent tendovaginitis (1 horse), and chronic fibrous tendovaginitis (2 horses) were identified.

Romitan District: when the clinical condition of 23 horses in the farms was studied, the morbidity rate was found to be 26.08% (6 horses). Structural analysis of the pathological conditions showed that in 3 cases there was inflammation of the dermal lamina of the hoof wall, in 2 cases acute aseptic serous tendovaginitis, and in 1 case tendon injuries of varying degrees were identified.

In private farms of Kogon District, when 27 animals were examined, the morbidity rate was 18.51% (5 horses). According to the examination results, inflammation of the dermal lamina of the hoof wall was recorded in 1 horse, acute aseptic serous tendinitis in 2 horses, and clinical signs of closed mechanical tendon injury in 2 horses.

1– Table Incidence rate of tendon diseases in the farms of Bukhara region

No	disease	number	%
1	Laminitis (inflammation of the dermal layer of the hoof wall)	8	29,62
2	Aseptic serous tenosynovitis	10	37,04
3	Chronic fibrous tenosynovitis	2	7,41
4	Tendon injuries and closed mechanical injuries	6	22,22
5	Purulent tenosynovitis	1	3,71
	total	27	100

The monitoring data conducted in selected districts of the Bukhara region (Bukhara, Romitan, and Kogon) showed a specific distribution pattern of distal limb pathologies in horses.

In all studied farms, acute aseptic serous tenosynovitis was the leading condition, accounting for 37.04% of the overall cases.

Pathology ranked second was inflammation of the dermal layer of the hoof wall (laminitis), accounting for 29.62%. In addition, a relatively high incidence of various mechanically induced tendon injuries was also recorded.

During the observations, purulent inflammatory processes of the tendons showed the lowest incidence. This can be explained by the effective organization of veterinary services in the regions, as well as the timely and qualified emergency care provided to injured animals.



Figure 1. Clinical examination of a horse's hoof

The analyses obtained from the examination and observation of horses showed that in horses participating in traditional equestrian games such as “kupkari” and other national horse sports, inflammation of the dermal layer of the hoof wall is mainly caused by improper hoof trimming and shoeing, giving cold water to the horse immediately after competition without cooling it down, feeding mixed and leguminous feeds, abrupt turning of horses from a standing position or while galloping, excessive strain, falls, horses kicking and biting each other, uneven hard and rocky ground, heavy loads, running uphill and downhill, slipping of horses, transportation in vehicles, and excessive mechanical load on the dermal structures of the hoof wall leading to their damage, which ultimately results in inflammation of the hoof wall dermis.

In addition, as in other animals, the composition of the diet in horses is of great importance, including the levels of digestible protein, vitamins, macro- and microelements. Their deficiency, as well as the inclusion of various toxic plants in the ration—such as *oq quray*, *kampirchopon*, cottonseed meal, and grains of other poisonous plants mixed with barley, wheat, and compound feed—was found to lead to the development of various toxic-allergic conditions in the organism, resulting in damage to the hooves and tendons.

The results of monitoring conducted under the conditions of the Bukhara region showed a significant prevalence of distal limb diseases in horses, with aseptic serous tenosynovitis and laminitis occupying the leading positions. This situation is closely associated, on the one hand, with insufficient compliance with zoohygienic requirements in farms, and on the other hand, with an unbalanced diet, improper hoof care, and excessive mechanical load.

Conclusion

1. The results of monitoring conducted in the Bukhara, Romitan, and Kogon districts of the Bukhara region showed a significant prevalence of distal limb pathologies in horses. Among all examined animals, the morbidity rate ranged from 14.95% to 26.08% across the regions, which scientifically confirms that these pathologies represent a relevant and important issue in veterinary practice.
2. According to the structural analysis of pathological conditions, aseptic serous tenosynovitis (37.04%) ranked first, followed by laminitis (29.62%). These results indicate that inflammations of the tendon sheaths and diseases of the hoof apparatus are among the most common pathologies in horses and directly confirm their association with overexertion and mechanical stress.
3. During the study, it was found that tendon injuries and closed mechanical trauma (22.22%) accounted for a significant proportion. Their occurrence was mainly associated with improper management practices, movement on uneven terrain, excessive loading, and violations of zoohygienic requirements as the primary etiological factors. This indicates the predominant role of external mechanical factors in the development of distal limb pathologies.
4. The low incidence of purulent tenosynovitis (3.71%) reflects the timely and effective organization of veterinary services, indicating that injuries are being detected at an early stage and the progression of aseptic processes into infectious forms is being prevented. At the same time, it was scientifically established that these diseases can be prevented by optimizing ration balance, hoof care, and workload management.

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