Prevalence of the Equine pastern dermatitis (mud fever) in Bosnia and Herzegovina – a pilot study

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Abstract

Equine pastern dermatitis (EPD), also known as grease, scratches or mud fever, represents variety of skin inflammatory conditions of the pastern region, all classified under this term. Therefore, it is rather considered a specific syndrome than a single disease diagnosis, with three main forms described. EPD has multiple potential etiologies (parasite (mite) infestation, bacterial infection, dermatophytosis, photosensitization, vasculitis, vaccinia, pemphigus foliaceus and primary irritant contact dermatitis), which are usually preconditioned with poor environmental conditions, particularly increased humidity and unappropriated hygiene. EPD has never been formally investigated in any area of Bosnia and Herzegovina. This is a preliminary investigation of the presence of EPD in the population of randomly selected horses in BiH. The research included 40 horses of both genders and varied breeds and ages. EPD was detected in 12.5% of the examined horses with dominant presence in Arabian horses.

Key words: horse, equine pastern dermatitis, mud fever

Introduction

Within population of horses in Bosnia and Herzegovina (BiH), the prevalence of certain pathological conditions is unknown and untraceable. Equine pastern dermatitis (EPD) has never been evaluated in any area of Bosnia and Herzegovina (BiH). EPD represents a variety of inflammatory conditions defined as crusting, erythema and alopecia of the posterior pastern region (Aunox et al., 2018). EPD should not be considered a single disease diagnosis; it more accurately represents a syndrome of the specific cutaneous reaction patterns caused by various inflammatory skin conditions (Thomas et al., 2009; Yu, 2013). The etiology includes mite infestation, bacterial infection, dermatophytosis, photosensitization, vasculitis, vaccinia, pemphigus foliaceus and primary irritant contact dermatitis (Scott and Miller, 2003; Risbergetal, 2005; Thomas et al., 2009). Environmental conditions, primarily increased humidity and poor environmental hygiene, are also undeniably recognized as important predisposing or even primary factors in development of this condition (Yu, 2013). It is common in horses with the non-pigmented pasterns’ areas and hair on the lower limbs, horses with feathers on the pasterns, and in Shires and Clydesdales because of their immune dysregulation (Ferraro, 2001; Akucewich, 2005; Colles et al., 2010). Three main forms of this disease are described (Akucewich, 2005; Yu, 2013):

Mild form (the most common one) characterized by alopecia, dry scales, crusts, pruritus and pain;

Exudative form with erythema, erosion, alopecia, and serous to purulent crusting dermatitis in combination with epidermolysis and vasculitis;

Chronic proliferative form with extreme proliferation of the granulation tissue that becomes cornified.

Considering that EPD has never been evaluated in any area of BiH, the aims of this research were to determine the presence of EPD, identify its dominant form among the observed affected animals, and estimate the characteristics of the existing environmental conditions.

Material and methods

A total of 40 randomly selected horses of both genders (22 females and 18 males), varied breeds (16 Arabian, 10 mixed breed, 4 Lipizzaner, 2 Bosnian mountain horse, 2 Friesian, 2 Haflinger, 2 Thoroughbred, 1 Holstein and 1 Hungarian sport horse) and ages (from 6 to 9 years old) were included. Detailed history comprised general information (gender, age, breed, activity), nutritional and zoo-hygenic conditions, and possible previous problems of the pastern region. Clinical examination was performed as detailed observation of the hoof and pastern region of each limb.
Results

EPD was diagnosed in five (12.5%) of 40 horses, three females and two males with the average age of seven years. Four of five affected horses were the Arabians and one was mixed breed. Four cases were classified as a mild form of the EPD (Figure 1) characterized with dry scabs. In one case (mixed breed horse), clinical signs of mild form of pastern dermatitis were extended to the fetlock and up the lower limb. One case was classified as chronic form of EPD (Figure 2) with cornified proliferation. In all cases, the caudal aspect of the pastern region was affected, dominantly of the front limbs (four of total five cases). In three cases, the lesions were unilateral, and in two bilateral. Considering the environmental conditions, most stables were clean and dry with relatively clean sawdust in each box stall. Increased moisture was noticed in several equestrian club’s paddocks without observed EPD, and one with case of the mild form.

Discussion and conclusions

Environmental conditions, primarily increased humidity and poor environmental hygiene, are recognized as important predisposing or even primary factors in development of EPD (Yu, 2013). According to Yu (2013), “chronic exposure to moisture such as wet bedding or muddy pastures appears to be the most common cause for irritant contact dermatitis”. In the present study, the most affected breed was Arabian horses. This is interesting observation considering that EPD in Arabian horses is related to send as an environmental predisposing factor (Akucewich, 2005), which is not present in the studied areas. Furthermore, none of the inadequate environmental predisposing factors were observed. During our research, all stables were clean and dry with relatively clean sawdust in each box stall. Increased moisture was noticed in equestrian club’s paddocks with and without cases of EPD, probably as a result of the long periods of rain and snowfall. Generally, during the period from late autumn to early spring (investigation was conducted over the period from October to April) humidity is increased in BiH. “Anecdotal reports suggest that pastern dermatitis tends to occur more frequently during seasonally wet periods, particularly if the pasture grasses are tall and the horses are exposed to prolonged periods of wetness” (Thomas, 2009). With respect to adequate environmental conditions observed during our investigation, irritant contact dermatitis should not be considered a potential cause of EPD in these cases. In the present study, four cases were diagnosed in the unpigmented pasterns (Figure 1), and one in the pigmented (Figure 2). This finding suggests that photosensitization could be considered as a cause of the detected EPD cases. Furthermore, other etiological factors such as mite infestation, bacterial infection or dermatophytosis (Scott and Miller, 2003; Risbergetal, 2005; Thomas et al., 2009), cannot be excluded. In accordance with previous data (Scott and Miller, 2003; Yu, 2013), mild forms of EPD dominated while gender predisposition was not observed. In contrast, the condition was detected on the front limbs more frequently although, according to previous findings, the hind limbs were more commonly affected (Yu, 2002; Yu, 2013).

In conclusion, our research confirms the presence of EPD in BiH, dominantly in Arabian horses, without detection of specific predisposing environmental factors. This was a small-scale preliminary study based exclusively on clinical examination for the detection of EPD, and investigation of environmental conditions as potential predisposing or primary factors. Other etiological factors were not investigated. Therefore, due to the small study population size and the lack of causative diagnosis, further studies will be required to deliver a more definitive conclusion.
References


Prevalenca dermatitisa putišta konja (zvjerinjac) u Bosni i Hercegovini – pilot studija

Sažetak:
Dermatitis putišta konja (engl. Equine pastern dermatitis, EPD), poznat i pod nazivom zvjerinjac, predstavlja skup različitih upalnih oboljenja kože koja se zajednički označavaju ovim pojmom. Stoga, prije se smatra sindromom nego dijagnozom specifičnog individualnog oboljenja. Opisan je u tri forme (blagoj, eksudativnoj i hroničnoj) sa višestrukom potencijalnom etiologijom (paraziti, bakterije, dermatofitoze, fotosenzitizacija, vaskulitis, vaccinia, pemphigus foliaceus, primarni irritacijski kontaktni dermatitis). Kao osnovni predisponirajući faktori navode se povećana vlažnost i loši uslovi higijene. Prisustvo EPD u Bosni i Hercegovini nikada nije formalno istraženo. Ovo su preliminarni rezultati prisustva EPD unutar populacije konja u Bosni i Hercegovini, kojima je obuhvaćeno 40 nasumično odabranih konja, oba spola, različite starosne dobi i pasmina. Zastupljenost EPD iznosila je 12.5%, dominantno kod arapskih konja.

Ključne riječi: Konj, dermatitis putišta, zvjerinjac