



Mycologic Forum

Epizootic lymphangitis: A neglected disease of working equids[☆]

Linfangitis epizootica: una enfermedad desatendida de los équidos de trabajo

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Epizootic lymphangitis, also called pseudofarcy or equine histoplasmosis, is a chronic and contagious mycosis of horses, mules and donkeys. The animals often show thickening of the lymph vessels and lymph nodes, leading to dermatitis and suppurative and ulcerative lymphangitis. It is most commonly seen on the limbs, chest wall and neck, but may also present as ulcerative conjunctivitis of the palpebral conjunctiva, or rarely as a multifocal pneumonia. The skin, through wounds, may be infected directly by pus, nasal or ocular secretions, or indirectly by soil, contaminated harnesses or other utensils, and flies. The disease is currently endemic in some areas of sub-Saharan Africa, especially Ethiopia, and historically cases have been reported in North Africa, parts of Asia, India, Pakistan, Japan, Eastern Europe and some countries bordering the Mediterranean Sea.³ Outbreaks have occurred in the past, mainly during different wars, due to overcrowding and the poor sanitary conditions of these working animals. Several vaccines have been tested on a limited scale in endemic areas, but are not commercially available. Sporadic cases of human infection have been reported, but the zoonotic potential is not fully established.

Traditionally, the causative agent of this disease is referred to as *Histoplasma capsulatum* var. *farciminosum*. However, for several years now, this variety has not been considered a valid taxon as its members do not form a monophyletic group.² Apparently, over time, different strains of *H. capsulatum* have acquired the ability to cause this disease in horses and other equids. In this study, the different strains tested were distributed in three different phylogenetic groups, which could represent phylogenetic species. The African and North American 2 (NAM2) groups included one strain each, and the vast majority of the isolates were placed in a single clade called Eurasia that is included in the large Latin American phylogenetic group A (LAMa). This fact made the authors suggest that the Eurasian population of *H. capsulatum* would have arisen from the LAMa phylogenetic species, and speculate that a shipment of domesticated horses transported about 500 years ago from South America to Europe may have been the origin of the Eurasian

strains. Ten of the 11 strains studied from the Eurasian clade, from Poland, Egypt and India, had identical alleles, pointing out that they belonged to the same clone.

Currently, the disease is highly prevalent in carthorses in Ethiopia, affecting the welfare of the animals and the livelihood of the cart-owning households.¹ Due to limited access to diagnostic techniques, it is diagnosed based on clinical findings and on microscopic examination of pus for detecting yeast cells. Although these classical diagnostic methods are useful for routine case management in endemic areas, they are not suitable for diagnosing the asymptomatic carrier state due to their limited specificity and sensitivity. Growing this fungus from a lesion sample would be enough to make a definitive diagnosis, but fungal culture is rarely performed. The authors of this study investigated, using conventional methods and PCR, the epidemiology of the disease in Northern Ethiopia, and confirmed the presence of genetic material of the pathogen in 44% of the horses tested. Subclinical infection was observed in 18.2% of apparently healthy horses. These results prove the widespread presence of epizootic lymphangitis in these areas. In this country the situation is exacerbated by the fact that there is no effective control of the disease. Topical treatment with tincture of iodine and oral treatment with potassium iodide are laborious, expensive and of limited efficacy in moderate and severe cases of the disease. Due to the low income of the owners such treatment is often unaffordable and, as a result, severely infected horses are abandoned.

A recent report on infectious diseases in working equids⁴ observed that the global equid population is estimated at 112 million, 25 million of which are in Africa. The majority of the world's equids are working equids, many of which live in low-income countries. These animals are of vital importance in many low-income countries, where they are the main mode of transport and traction (Fig. 1). Furthermore, this report notes that the most important fungal disease of working equids is epizootic lymphangitis. In regions where this disease is prevalent, such as in large

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Fig. 1. Horse-drawn carts are one of the main means of transport in some regions of Ethiopia. Photo courtesy © SPANA (the Society for the Protection of Animals Abroad). SPANA is an international charity that improves the welfare of working animals across the world by providing free veterinary treatment, training local animal owners and teaching children about animal welfare. Please see the charity's website, www.spana.org, for more information.

parts of Ethiopia, it ranks as the most important infectious disease among horses. Despite its importance, basic epidemiological knowledge on the occurrence, prevalence, impact, risk factors and transmission routes is still lacking. In addition, as highlighted in this report, epizootic lymphangitis requires better diagnosis, and extensive research on treatment and preventive measures is needed. However, for the moment, it remains neglected.

Conflict of interest

Author has no conflict of interest.

Acknowledgement

Financial support came from Servei Veterinari de Bacteriologia i Micologia of the Universitat Autònoma de Barcelona.

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