Popular Article

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Glanders: An Overview

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Abstract

Glanders is a contagious and often fatal disease of horses, donkeys, and mules caused by *Burkholderia mallei*. It is characterised by nodules and ulcerative lesions in the upper respiratory tract and lungs. The cutaneous manifestation of the disease is known as **farcy**.

Keywords: Glanders, contagious, farcy, horse

Etiology: The causative organism of glanders is *Burkholderia mallei* (formerly *Pseudomonas mallei*).

Epidemiology

Host Occurrence

Horses, mules, and donkeys are the primary hosts. Humans are susceptible, and infections are frequently fatal. Carnivores, including lions, may become infected after consuming contaminated meat. Infections have also been reported in sheep and goats.

Source of Infection and Transmission

Transmission primarily occurs through ingestion of feed or water contaminated with nasal discharge or sputum from infected animals, particularly via communal watering troughs and feeding utensils. The cutaneous form may develop through contamination of skin abrasions by direct contact or via contaminated harness and grooming equipment.

Host and Pathogen Risk Factors

Horses generally develop the chronic form of the disease, while mules and donkeys are more prone to the acute form. All equids and all age groups are susceptible. Stress predisposes animals to infection. Animals that recover often remain carriers, and complete recovery is rare.

Economic Importance

The movement of infected horses poses a serious threat of reintroducing glanders into countries where it has been eradicated, leading to significant economic losses in the equine industry.

Zoonotic Implications

Glanders is a zoonotic disease. Horse handlers, veterinarians, and laboratory personnel are at risk, especially during postmortem examinations without proper protective measures.

Pathogenesis

Infection usually occurs through the intestinal wall, leading to septicemia in acute cases or bacteremia in chronic cases. Lesions primarily localise in the lungs, but the skin and nasal mucosa are also commonly affected. Other viscera may develop characteristic nodules. Terminal stages often involve bronchopneumonia, and death typically results from anoxic anoxia.

Clinical Findings

Acute Form

- High fever
- Cough
- Nasal discharge
- Rapidly spreading ulcers on the nasal mucosa
- Skin nodules on lower limbs or abdomen
- Death within a few days due to septicemia

Chronic Form

Three major manifestations occur:

1. Pulmonary Form

- Chronic pneumonia
- Persistent cough
- Frequent epistaxis
- Laboured breathing

2. Cutaneous Form (Farcy)

- Subcutaneous nodules (1–2 cm)
- Ulceration with discharge resembling dark honey
- Lymphadenopathy
- Swollen joints
- Oedema of legs
- Glandular orchitis in males

3. Nasal Form

Lesions appear on the lower turbinates and nasal septum. They begin as nodules (~1 cm), ulcerate, and may merge. Upon healing, they leave a characteristic stellate scar.

Diagnosis

The principal diagnostic tests include:

- Mallein test
- Complement fixation test (CFT)
- Demonstration/isolation of the organism

Differential Diagnosis

- Epizootic lymphangitis
- Ulcerative lymphangitis
- Sporotrichosis
- Melioidosis
- Other causes of pneumonia

Treatment

Sodium sulfadiazine has shown high efficacy in experimental glanders and melioidosis in hamsters. A treatment duration of 20 days was required for 100% recovery under experimental conditions. However, treatment is generally not recommended in field conditions due to zoonotic risk and carrier state development.

Control

1. Carcasses must be buried or incinerated.
2. Premises should be disinfected and quarantined.
3. Suspected and imported animals must be quarantined.
4. All positive cases should be sent for slaughter.
5. Immunity is not protective or long-lasting.
6. Bedding, manure, and contaminated materials should be burned or buried.

References

Anuntagool, N., & Sirisinha, S. (2002). Antigenic relatedness between Burkholderia pseudomallei and Burkholderia mallei. Microbiology and immunology, 46(3), 143-150.

Godoy, D., Randle, G., Simpson, A. J., Aanensen, D. M., Pitt, T. L., Kinoshita, R., & Spratt, B. G. (2003). Multilocus sequence typing and evolutionary relationships among the causative agents of melioidosis and glanders, Burkholderia pseudomallei and Burkholderia mallei. Journal of clinical microbiology, 41(5), 2068-2079.

Malik, P., Singha, H., Khurana, S. K., Kumar, R., Kumar, S., Raut, A. A., ... & Singh, R. K. (2012). Emergence and re-emergence of glanders in India: a description of outbreaks from 2006 to 2011. *Vet Ital*, *48*(2), 167-78.

Sprague, L. D., Zachariah, R., Neubauer, H., Wernery, R., Joseph, M., Scholz, H. C., & Wernery, U. (2009). Prevalence-dependent use of serological tests for diagnosing glanders in horses. BMC Veterinary Research, 5(1), 32.

Verma, R. D., Sharma, J. K., Venkateswaran, K. S., & Batra, H. V. (1990). Development of an avidin-biotin dot enzyme-linked immunosorbent assay and its comparison with other serological tests for diagnosis of glanders in equines. Veterinary microbiology, 25(1), 77-85.