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Cryptococcosis is particularly common in cats but has also been reported in almost all domesticated animals including pets, equines, and farm animals. The infection has been reported several times in South American camelids (Refai et al., 2016) but only once in a dromedary camel in Saudi Arabia (Ramadan et al., 1989).

37.1 Etiology

Cryptococcosis in camelids is caused by *Cryptococcus neoformans* and *C. gattii*. These are ubiquitous saprophytic fungi inhabiting the soil and are characterized by their large heteropolysaccharide capsule that does not take up common cytologic stains and forms a clear halo in preparations stained with India ink.

37.2 Clinical Picture

Tissue reactions in *cryptococcus* infection depend on the organ affected and comprise two basic histological patterns: gelatinous and granulomatous. The latter reaction consists of histiocyte, giant cell, and lymphocyte infiltration, modified by secondary bacterial infection.

37.3 Diagnosis

Initial diagnosis of cryptococcosis is based on direct microscopic examination of India ink-stained preparations, while definitive diagnosis is confirmed by cultural methods of samples of cerebrospinal fluid (CSF) or blood, and sometimes respiratory secretions. Both *C. neoformans* and *C. gattii* grow well at 37 °C. on Sabouraud dextrose agar medium in which the colonies appear as soft, creamy, and opaque

colonies within 3–5 days, then become mucoid and creamy to tan. Other yeasts develop white to creamy colonies.

Several molecular techniques have been used for subtyping *C. neoformans* and *C. gattii* strains. For serological diagnosis, cryptococcal antigen from cerebrospinal fluid constitutes a sensitive test for diagnosis of cryptococcal meningitis. Rapid diagnostic methods to detect cryptococcal antigen include latex agglutination test, lateral flow immunochromatographic assay (LFA), ELISA and enzyme immunoassay (EIA), and Rapid latex agglutination.

37.4 Treatment

No specific information exists on the treatment of cryptococcosis in dromedary camels. However, various antifungal drugs such as Azoles have been used in treating pets and other animals.

References

- Ramadan, R. O., Fayed, A. A., & El-Hassan, A. A. (1989). Cryptococcosis in a camel (*Camelus dromedarius*). *Agris*, 37(1), 77–82.
- Refai, K. R., El-Naggar, A., & Tamam, O. (2016). *Monograph on fungal diseases of camelidae; A guide for postgraduate students*. <http://www.researchgate.net/publication>.