

First isolation of *Aspergillus flavus* from a calf with eye infection in Sudan

Ehab Mossaad¹, Abdo Elgabbar, M.A², Yasser Shuaib³, G.E.Mohammed⁴

¹Dep. Microbiology, College of Veterinary Medicine, Sudan University of Science and Technology (SUST), ²Dep. Mycology, Central Veterinary Research Laboratories (CVRL), ^{3,4}Dep. of Medicine College of Veterinary Medicine Sudan University of Science and Technology (SUST)

Abstract:

This study was performed in Sudan as a part of ongoing research project about infectious bovine keratoconjunctivitis, the research was initiated by the increasing reports on the annual outbreak of the disease in dairy farms in Khartoum state after each rainy season.

There was no published data about the prevalence and incidence of the disease, but preliminary data collected during the present investigation showed that outbreaks among cattle in Khartoum state are very common and the percentage of infected calves may reach up to 60% in one farm.

Among samples subjected to microbiological investigation, one sample showed positive growth of *Asprgillus flavus* on Sabouraud dextrose agar and blood agar.

The infected calf was 4 months old with eye infection characterized by bilateral keratoconjunctivitis, corneal opacity, corneal ulcer and loss of vision

This study reports the first isolation of *As.flavus* from a calf with eye infection in Sudan

Keywords: Aspergillus, bovine, eye infection

Introduction:

Infectious bovine keratoconjunctivitis (IBKC) is a disease which affects cattle of all ages and breeds. It is characterized by the inflammation of the cornea and conjunctiva and is considered as the most important ocular disease of cattle (Baptista, 1979). The disease was reported to be seasonal in nature. It was reported in summer (Hughes *et al.*, 1965) and in early autumn (Baldwin, 1945). However, increasing winter incidence was reported in Britain (Giles, 1975). This disease was reported for the first time in the Sudan in 1971 and some cases were found to be associated with vitamin A deficiency (El Sanousi *et al.*, 1971; 1975). However, there is no published data about mycotic bovine eye infection in Sudan

The present article demonstrates the isolation of *A. flavus* from a calf with eye infection for the first time in Sudan.

Materials and methods:**Study area:**

This study was carried out in Kuku area, the most intensive milk production area in Khartoum State (Sudan).

The case:

A four months age male calf with eye infection characterized by bilateral keratoconjunctivitis, lacerimation, corneal opacity, corneal ulcer and loss of vision, (Figure 1)

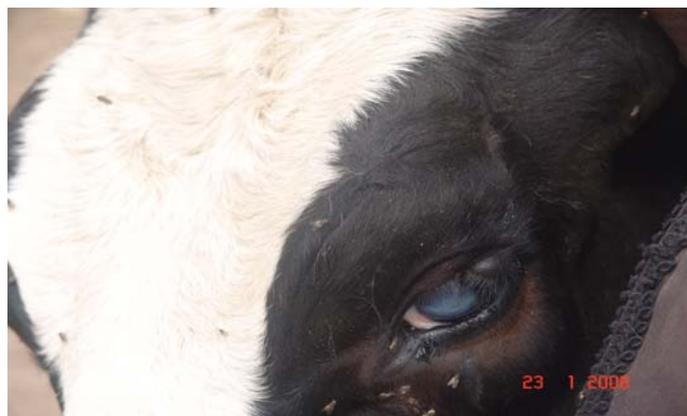


Figure 1

Sample and sampling technique:

Duplicate eye swab were collected aseptically and under sterile condition and were transported in ice to the laboratory.

Culturing:

The collected eye swabs were inoculated onto blood agar and Sabouraud dextrose agar plates. Blood agar plate was incubated at 37°C for 72 hours while Sabouraud dextrose agar plate was incubated at 25°C for the same period.

Staining:

Smears from the vegetative fungal parts were prepared and stained with lactophenol cotton blue, and examined under microscope.

Results:

A typical *As. flavus*, yellowish green colonies, appeared on both inoculated blood agar and Sabouraud dextrose agar after 72 hours incubation.

Microscopically, stained smears of the fungal parts with lactophenol cotton blue showed typical conidia of *As. flavus* (Figure 2)

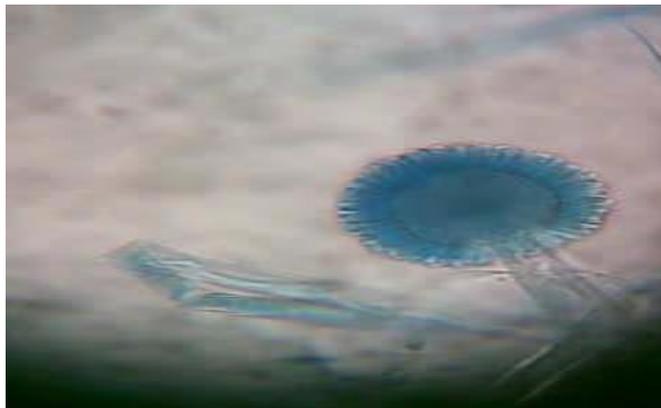


Figure 2

Discussion:

A. flavus was the only isolate from samples collected from the infected calf. Analysis to reveal the presence of the bacteria was negative; this confirms the main role of the fungus in the occurrence of the disease in the infected calf.

Infectious bovine keratoconjunctivitis was reported for the first time in the Sudan in 1971 and some cases were found to be associated with vitamin A deficiency (El Sanousi *et al.*, 1971; 1975). It is worth to mention many types of bacteria were isolated from other calves during the investigations.

The present study is in agreement with Colleen *et al.*, (2006) who stated that *Aspergillus* DNA was detected using PCR from a five year-old female Holstein cow examined for ocular discharge.

The result is considered as a new addition to the literature since there was no previous report about fungal bovine eye infection in Sudan.

References:

Baldwin, E.M. (1945). A study of bovine infectious keratitis. *Am. J. Vet. Res.* **6**:180-187.

Baptista, P.J. H. P (1979). Infectious bovine keratoconjunctivitis. A review. *Br. Vet. J.* **135**: 225-242.

Colleen R. Elligott.; David A. Wilkie.; Vanessa J. Kuonen.; I. Dineli Bras.; and Andrew Neihaus. (2006). Primary *Aspergillus* and *Fusarium* keratitis in a Holstein cow *Veterinary Ophthalmology.* **9**:175-178.

El Sanousi, S. M.; Ibrahim, A. A.; Babiker, H. A.: (1971). Isolation of *Moraxella bovis* from an out break of infectious bovine keratoconjunctivitis in the Sudan. *Bull. Epizoot. Dis. Afr.* **19**: 207-211.

El Sanousi, S. M.;Eisa, M.; El Bedawi,E. S.: (1975). Infectious bovine keratoconjunctivitis in association with vit. A deficiency in a feed lot. *Bull. Anim. Hlth Prod. Afr.* **24**: 293-295.

Giles, M. B. deC.: (1975). New Forest Disease. *Vet. Rec.* **96**: 117.

Hughes,D. E.;Pugh, G. W.; McDoland,T. J.: (1965).Ultraviolet radiation and *Moraxella bovis* in the aetiology of bovine infectious keratoconjunctivitis. *Am. J. Vet. Res.* **26**:1331-1338.