

# Clinical signs of animal brucellosis in Eastern Sudan

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## Key words

Cattle - Sheep - Goat - Equidae - Dromedary - Brucellosis - Animal hospital - Sudan.

## Summary

A study was conducted to identify the association of brucellosis with the different clinical signs in the animals presented to the veterinary clinic of Gedaref, Eastern Sudan. The five most associated with brucellosis clinical signs in cattle were carpal hygroma, fever and septicaemia, abortion, mastitis and weakness accompanied by weight loss. The relation between brucellosis and age and sex of the animals are also discussed.

## ■ INTRODUCTION

Brucellosis is a disease caused by various species of the genus *Brucella* and has a worldwide distribution. It causes appreciable losses to the livestock industry in the affected areas, which are mainly due to abortion, stillbirth, prenatal mortality, reduction in milk yield, restriction in movement and trade, increased veterinary care expenses and increased culling and replacement rates. Moreover, brucellosis is considered by the WHO/OIE/FAO as the most widespread zoonosis in the world (8).

In this study the exact situation of brucellosis among different animal species in Gedaref area, Eastern Sudan, is presented and the association of the disease with the different clinical signs in the animals taken to the District veterinary Clinic of Gedaref is discussed.

## ■ MATERIALS AND METHODS

Blood samples were collected from different animal species presented to the veterinary clinic in Gedaref between October 1995 and September 1996. Serum samples were obtained by centrifugation of the coagulated blood collected from the jugular vein in plain vacutainer tubes. The clinical signs of the sick animals were recorded as they were perceived by the animal attendants, as well as other data including age and sex. The serum samples were tested for brucellosis using the standard Rose Bengal plate test. The antigen used was prepared in the Brucellosis Unit of the Central veterinary Research Laboratory, Khartoum, Sudan, according to the technique described by Alton *et al.* (3).

## ■ RESULTS AND DISCUSSION

The total number of animals from various species examined throughout this study was 916 including bovines, ovines, caprines, equines and camels (*Camelus dromedarius*). Fifteen of the bovines (13.3 %) and only one camel (2.9%) were found positive while all the equine, ovine and caprine species were negative to brucellosis.

The five most associated with brucellosis clinical signs were carpal hygroma, fever and septicaemia, abortion, mastitis and weakness accompanied by weight loss.

Out of the fifteen seropositive bovine reactors, 2 (13.3 %) were males while 13 (86.7%) were females.

Two (13.3%) of the 15 bovine seropositive reactors were less than one year old, none were between 1-3 years old, while 13 (86.7%) were over three years old.

Blood *et al.* (4) stated that in bovines hygromatous swellings, especially of the knees, should be viewed with suspicion of brucellosis. Abortion after the fifth month of pregnancy is well known as the cardinal clinical feature of bovine brucellosis (4, 6). In this study, forty percent of the cattle that incurred late abortion yielded positive results, which may further support the association of brucellosis with abortion.

Although fistulous withers and chronic bursal enlargement of the neck and withers are strongly associated with *B. abortus* infections in horses (4), all the equines presenting these signs (n = 10) were found negative to brucellosis. This may indicate that pathogens other than *Brucella* sp. might be incriminated as the aetiology of this disease. However, in Nigeria the disease prevalence among horses was found to be 8 % (1).

During the course of brucellosis septicaemia may occur due to acute metritis following retention of the placenta (4). However, in

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this study the only positive reactor with clinical signs of fever and septicaemia was a young bovine calf suffering from foot-and-mouth disease (FMD).

From the results of this investigation some association could be made between brucellosis and mastitis. *Brucella* is known to localize for some time in the mammary gland (4). Of the animals presented to the clinic with a history of weakness and weight loss 16.3% were found to be positive to brucellosis. To some extent these signs might be regarded as associated with bovine brucellosis.

Prevalence according to sex is in agreement with the findings of previous authors (2, 10, 11) and further supports the fact that female animals are more susceptible than males.

The positive seroconversion in calves less than one year old is attributed to the passive dam-calf immunotransfer through the colostrum (4), whereas the negative reaction of all bovine animals aged over one year and less than three years might be attributed to the loss of colostral antibodies (9). Animals older than three years yielded higher prevalence rates due to the increased susceptibility with the advancement of age and approach to sexual maturity (4).

Since the greatest risk of developing human brucellosis was found to be associated with indirect contact with animals through consumption of dairy products (5), and consumption of raw milk and contact with infected animals are the main factors for contracting the disease (7), ordinary precautions such as boiling or milk pasteurization and careful handling and disposing of fetal material and animal discharges should be practiced. Efforts to investigate the disease prevalence in the human population of the Gedaref area are highly justified, particularly among those working in close contact with animals such as veterinary workers, butchers and animal attendants.

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### Résumé

**Agab H.** Manifestations cliniques de brucellose animale à l'Est du Soudan

Une étude a été menée pour identifier les relations entre différents signes cliniques et la brucellose chez des animaux présentés à la clinique vétérinaire de Gedaref, à l'Est du Soudan. Les cinq manifestations cliniques les plus fréquemment associées à la brucellose chez les bovins étaient l'hygroma du genou, la fièvre avec septicémie, l'avortement, des mammites et un affaiblissement général accompagné de perte de poids. Des liaisons entre la brucellose et l'âge et le sexe des animaux sont aussi discutés.

**Mots-clés :** Bovin - Ovin - Caprin - Equidae - Dromadaire - Brucellose - Clinique vétérinaire - Soudan.

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### Resumen

**Agab H.** Signos clínicos de brucelosis animal en Sudán del Este

Se llevó a cabo un estudio para identificar la asociación entre la brucelosis y los diferentes signos clínicos que presentaron los animales al veterinario clínico de Gedaref, Sudán del Este. Los cinco signos clínicos principalmente asociados con la brucelosis en el ganado fueron higroma de la rodilla, fiebre y septicemia, aborto, mastitis y debilidad, acompañada por pérdida de peso. Se discute la relación entre brucelosis y edad y sexo de los animales.

**Palabras clave:** Ganado bovino - Ovino - Caprino - Equidae - Dromedario - Brucelosis - Clínica animales - Sudán.