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BRUCELLOSIS IN CAMELS IN IRAN

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Abstract

A survey on camel brucellosis in Iran was carried out in 1986 and 1987 at the Razi Institute. A total of 953 serum samples and over 3,500 lymph nodes from 300 camels were examined. In serological investigations, 77 cases (8%) showed laboratory evidence of *Brucella* infection. Strains of *Brucella* were isolated from three lymph node cultures (1%). The isolates were *Brucella melitensis* biotype 1 (1 case) and *B. melitensis* biotype 3 (2 cases).

Introduction

Brucella abortus was identified as a causal agent of bovine abortion in Iran in 1944 (5). The first report on the isolation of *B. melitensis* as a cause of abortions in sheep and goats dates back to 1950 (8). Since that time many review articles on investigations into brucellosis in cattle, sheep and goats, and human beings have been published (9, 10, 11, 14, 15, 16, 17, 18). This report presents serological and bacteriological studies of brucellosis in camels, identified in Iran for the first time.

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Materials and Methods

Samples

During 1986 and 1987, a total of 953 serum samples and the lymph nodes from 300 camels were obtained from the Ziaran and Abyek slaughterhouses. Serum samples were stored at 4°C and tested on the same day or two to three days after collection. The lymph nodes were cultured directly onto agar plates of serum dextrose antibiotics.

Antigens

Antigens for the tube agglutination and Rose Bengal plate (RBP) tests were prepared and standardised according to the method recommended by Alton *et al.* (1).

Serological tests and interpretation

The RBPT, serum agglutination test (SAT), complement fixation test (CFT) and 2-mercaptoethanol (ME) test were conducted using the standard procedures described by Alton *et al.* (1) and Brinley Morgan *el al.* (3).

The RBPT was read as positive with any degree of agglutination and negative when agglutination was absent.

Titres of 1/80 or above in the SAT were considered positive, taking into account the other serological tests as well.

The titres of 1/40 or above in CFT were taken as positive.

The ME test was interpreted in relation to SAT, and titres of 1/40 or above were considered positive.

Lymph node cultures

Over 3,500 lymph node sample from 300 camels were inoculated on serum dextrose agar (with antibiotics). Each lymph node was cultured on 2-3 plates, and all plates were incubated at 37°C in a carbon dioxide incubator for *B. abortus,* and in an ordinary incubator for *B. melitensis.* These were examined over 4 to 7 days for *Brucella* colonies. Subcultures of *Brucella* isolates were biotyped by using techniques described by Corbel *et al.* (4).

Results

Of 953 serum samples from camels obtained during 1986 and 1987, 77 (8%) were positive in serological tests for brucellosis. Samples positive to RBPT and SAT were cross-checked by the CF and ME tests.

Brucella strains were isolated from 3 of the 300 camels from which a total of 3,500 lymph nodes had been cultured. All the organisms were biotyped and were *B. melitensis* biotype 1 (1 case) and *B. melitensis* biotype 3 (2 cases). The rate of positive cultures for 300 camels was 1%.

Discussion

Brucellosis has been diagnosed in camels in many countries in the Middle East (2, 6, 7, 12, 13). In a addition, there are many reports on *B. abortus* abortion in camels (2, 12, 13), but infection of camels with *B. melitensis* is rare.

In iran, sheep and goats are the principal farm animals, and *B. melitensis* has spread in many areas of the country. Hence the occurrence of *B. melitensis* in camels is not surprising.

The regional distribution of infection in camels can be controlled by differential serological tests once a year and the isolation of reactors.

The movement of animals should be controlled. Nevertheless, the control of disease among camels would be more successful if reactors were slaughtered, and other animals such as calves and lambs vaccinated with S19 and Rev 1 vaccines respectively.

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