

A case report

Meningeal Anthrax in a Twelve-Year Old Child in Iran

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Introduction

Anthrax is mainly a disease of herbivorous animals but man may acquire the infection if contact is made with infected animals, their products or ingestion of infected meat. The disease in human largely is a professional one and is acquired during butchering, skinning or handling infected hides, wool, hair, and bone used as bonemeal or fertilisers. The disease usually follows the introduction of the microorganism, in vegetative or spore form, into wounds or abrasions in the skin. Meningeal Anthrax follows the dissemination of the *Bacillus* via blood stream, either from the primary cutaneous lesion or without any identifiable focus. The first reported cases were those of Wagner (1984) who described the pathological changes in anthrax meningitis. Greenfield (1881) reported 3 cases of anthrax meningitis in persons affected with Wool-sorter's Disease in England. Bruce and Shennan (1910) were able to find in the literature only 26 verified instances of meningitis due to *Bacillus anthracis*. House (1920) reviewed the literature and found 45 reports. He reported 3 cases himself with detailed descriptions of gross and microscopic pathological changes. In this communication we report a case of anthrax meningitis, assumably originated from the cutaneous source, in a 12-year old boy in Iran. To the best of our knowledge this is the first report of the kind in Iran.

Description of the case

An Iranian farmer-12-year-old male child from a village remotely located in Alborz Mountains was admitted to Shahid Bahonar Hospital, Karaj, Iran. The boy was unconscious and showed convulsions. On examination, it was revealed that the patient had:

Pyrexia, lymphadenopathy, cutaneous ulcers in the face and the neck, positive signs of meningitis, dilated pupils and convulsions .

After controlling the convulsions by (by IV injection of Diazepam), lumbar puncture was performed and a haemorrhagic CSF was tapped and sent to the laboratory. Patient returned to convulsions 20 minutes later and went into respiratory and, then, cardiac arrest. Despite artificial respiration and external cardiac massage the patient expired.

C.S.F examination showed the following picture:

Fluid appearance= haemorrhagic.

Proteins = 750 mg/ml.

Glucose = 60 mg/ml.

Total W.B.C = 828 / mm³

R.B.C = 8640 / mm³

Polymorph = 52%

Lymphocytes = 48%

Direct smears, prepared from CSF and cutaneous ulcers, stained with Gram stain for microbiological studies showed capsulated Bacilli. In cultures made from the CSF and ulcers, on the face and the neck, long chains of Gram positive rods of 1 x 5-10 µm in size, with square to concave ends, and the spore located in the centre grew. The microorganism was non-motile, colonies grown on nutrient agar, after 24 h., were dull grey, flat and had typical "Medusa head" appearance. On blood agar, the microorganism was nonhemolytic. These characters served to distinguish the microorganism from strongly hemolytic and saprophytic species of the genus *Bacillus* and place it as *Bacillus anthracis*.

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