Clinical picture

Fatal disseminated neurobrucellosis

A 59-year-old cattle breeder hailing from rural northwestern India presented with insidious onset and gradually progressive hoarseness of voice and painless dysphagia for 5 months followed by ascending paraparesis and hearing loss for 2 months. He had significant loss of weight with anorexia of 5 months duration. Physical examination revealed pallor, bilateral 7th, 8th, 9th, 10th and left 12th cranial nerve palsies with sensorimotor deficits in radicular distribution (L3-S4) and neck stiffness. Hemogram showed elevated erythrocyte sedimentation rate of 42 mm in the first hour (normal <30). Chest X-ray and biochemical parameters were normal. Screening for viral markers (HIV, HBV and HCV) was negative. Cerebrospinal fluid (CSF) revealed 10 lymphocytes with elevated protein 186 mg/dl, normal glucose and adenosine deaminase levels. CSF VDRL, malignant cytology, tuberculosis (TB)-polymerase chain reaction were negative with cultures being sterile. Neuroimaging of the brain and whole spine showed diffuse abnormalities in the form of multiple parenchymal ring enhancing lesions and spinal arachnoiditis (Figure 1). Nerve conduction study revealed axonal

Figure 1. Gadolinium-enhanced cranial MRI showing (A) multiple heterogeneously enhancing lesions in cerebellum (arrows) and (B) left frontal grey matter. Gad MRI of the whole spine revealing (C) irregular patchy enhancement of thecal sac in the lumbar-sacral and (E) cervical region (black arrow). (D) Clumping of nerve roots seen in cauda equina on contrast-enhanced T1 axial section (white arrow).

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polyradiculoneuropathy involving bilateral tibial, common peroneal and sural nerves. Malignancy screening (contrast computerised tomography of the chest and abdomen, prostate-specific antigen, carcino embryonic antigen, whole-body positron emission tomography) was unremarkable. In view of close contact with domestic animals, brucella workup was carried out, which revealed a serum Brucella agglutination titre of 320 IU (IgM fraction 290 IU) with rise in titre noted on 2-week paired sample (640 IU). He was managed with oral doxycycline 200 mg/day and rifampicin 450 mg/day with i.v. ceftriaxone 2 g/day. He however succumbed to his illness after 2 weeks of therapy. This fatal course of disseminated neurobrucellosis depicts the dark side of this potentially treatable tropical illness. Our patient had received antituberculous therapy for 4 weeks prior to being evaluated by us on the presumptive diagnosis of disseminated TB. An early and prompt diagnosis of neurobrucellosis with subsequent institution of appropriate antibiotic polytherapy could have averted the fatal outcome in our case. Even though TB constitute a close differential for such multifocal neurological syndrome in an endemic area such as ours, bilateral vestibulocochlear neuritis almost always points towards a diagnosis of neurobrucellosis.

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References