An 8-Year-Old Boy with Fever, Axillary Ulcerative Lesion, and Altered Mental Status

(See pages 1266–7 for the Photo Quiz)

Figure 1. Left axillary lesion

Diagnosis: tularemia with meningitis.

After the lumbar puncture was performed, intravenous ceftriaxone was added to the patient’s vancomycin therapy, and later that day, treatment with intravenous doxycycline and gentamicin was initiated, because tularemia was suspected on the basis of the axillary lesion (figure 1) and a predominance of lymphocytes (figure 2) in the CSF cell count (87% lymphocytes; 13% neutrophils). The CSF culture grew Francisella tularensis. The patient subsequently developed seizures with a decreased level of consciousness and required endotracheal intubation. He then was noted to have left pupillary dilation, and CT showed hydrocephalus and a hypodense area in the territory of the right middle cerebral artery that was consistent with ischemia. Because of the hydrocephalus, an external ventricular drain was placed, which was removed on day 16 of hospitalization. The patient regained consciousness, and after a period of rehabilitation, his only residual health defect was slight right arm weakness.

Tularemic meningitis is a rare illness, with few reported cases involving children [1–4]. Examination of the CSF sample that grew F. tularensis revealed a predominance of mononuclear cells, hypoglycorrhachia, and an elevated protein level [1–4]. Mononuclear cell predominance is unusual in cases of bacterial meningitis, although in a recent review, one-third of patients with Listeria monocytogenes meningitis had a lymphocytic pre-
dominance [5], and Salmonella meningitis can have a lymphocytic predominance [6]. This patient’s clinical course was consistent with ulceroglandular tularemia and hematogenous dissemination to the CNS, although cultures of blood samples obtained at hospital admission and during hospitalization showed no growth. A tick bite was the suspected vector for transmission of tularemia.

This patient’s course was complicated by hydrocephalus and a cerebrovascular infarct, which was consistent with other microbial agents that cause meningitis, although those complications have not been specifically reported with tularemic meningitis. Aminoglycosides (e.g., streptomycin and gentamicin) are the first-line treatment for tularemia, but because of decreased CSF penetration, this patient was treated with both gentamicin and doxycycline [7].

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References