Testicular Abscess Due to *Streptococcus pneumoniae* in an Infant with Human Immunodeficiency Virus Infection

*Streptococcus pneumoniae* infections occur more frequently in children infected with HIV than in immunocompetent children. Bacteremia, sinusitis, pneumonia, and meningitis are the most common serious presentations [1]. We report a case of testicular abscess due to *S. pneumoniae* in an HIV-infected infant.

A 15-week-old male with vertically transmitted HIV infection was admitted to the hospital because of fever, irritability, and swelling and erythema of the scrotum of 1 day's duration. He had been delivered at term by elective cesarean section; his 31-year-old mother had not been treated with zidovudine during pregnancy. Twenty-four hours after birth, he was found to be positive for HIV by PCR. Therapy with oral zidovudine and prophylaxis with trimethoprim-sulfamethoxazole were started when the patient was 1 week and 4 weeks of age, respectively. The infant developed a urinary tract infection due to *Escherichia coli* at 1 month of age and *Streptococcus bovis* meningitis at 9 weeks of age. Evidence of rapidly progressing HIV disease included failure to thrive, hematopoesis, spastic quadriaparesis, and an absolute CD4 cell count of 680/mm$^3$ (CD4 cells, 22%). Didanosine was added to the regimen when he was 3 months of age.

On admission, the patient was irritable but did not appear toxic. Vital signs were temperature, 39.9°C; respiration rate, 38; and heart rate, 126. He weighed 4 kg (below the third percentile). In addition to the previously noted findings, the physical examination was remarkable for an enlarged, tender, and erythematous right scrotum (~2.5 cm in diameter), without detectable abnormalities on transillumination.

Tests revealed the following significant laboratory values: hemoglobin, 9.1 g/dL; WBCs, 2,060/mm$^3$ (25% neutrophils, 65% band forms, 8% lymphocytes, and 2% metamyelocytes); alanine aminotransferase, 340 U/L; aspartate aminotransferase, 652 U/L; total bilirubin, 1.4 mg/dL; and alkaline phosphatase, 182 U/L. The results of urinalysis were normal. Cultures of blood and urine were performed, and the patient started treatment with parenteral ceftriaxone (75 mg/[kg • d]). A chest roentgenogram showed a right-upper-lobe infiltrate, which had been noted on previous films. Transillumination of the right scrotum showed a right scrotal abscess and concomitant bacteremia were confirmed with blood cultures drawn on admission.

The patient was evaluated by a urology consultant on hospital day 2, but aspiration was not attempted because the fever and local signs of inflammation had decreased significantly after the patient began receiving antibiotic therapy. Follow-up blood cultures performed on day 2 after admission remained negative. After completion of a 14-day course of antibiotic therapy, the results of a scrotal examination were normal.

Impairment of humoral immunity is an early feature of HIV infection and may account for the high incidence of invasive bacterial disease seen in populations of both children and adults infected with HIV [2, 3]. Serious bacterial infection was the AIDS indicator disease in 13% of 1,535 cases of AIDS in children reported to the Pediatric HIV/AIDS Surveillance Unit of the New York City Department of Health as of September 1995 [4].

In the largest prospective study to date, *S. pneumoniae* accounted for 21 (31.8%) of 66 laboratory-proven serious bacterial infections in a cohort of 372 HIV-infected children [5]. Previous studies [reviewed in 6] have shown that HIV-infected individuals have impaired mucosal immunity, decreased phagocytic activity, and selective defects in IgG2 responses, which may explain the high incidence of infections due to *S. pneumoniae* and other encapsulated pathogens in this population. Infants with vertically transmitted HIV infection may be at particularly high risk for bacterial infections because of immaturity of the fetal-neonatal immune system at the time of HIV infection.

The finding of an enlarged, tender scrotum in a prepubertal child suggests either testicular torsion or incarcerated hernia, and diagnostic evaluation is directed at ruling out these acute entities [7]. Pyogenic epididymo-orchitis is an unusual finding in this age group, and few cases have been reported; pathogens isolated in these cases include *Pseudomonas aeruginosa*, *Salmonella enteritidis*, and *Haemophilus influenzae* [8–10].

Testicular abscesses are thought to occur either through hematogenous spread of organisms or, in the presence of urinary tract infection, by reflux through the vas deferens [7]. In our case, although the patient's scrotum was not surgically explored, the physical and sonographic findings consistent with a testicular abscess and concomitant bacteremia are strong evidence that *S. pneumoniae* was the causative pathogen. Management of scrotal abscess usually involves a combination of surgical drainage and systemic antibiotic therapy. As the findings in this case illustrate, medical therapy alone may at times be adequate, even for an immunocompromised host.

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References


Primary Hydatidosis of the Peripheral Muscles: Treatment with Albendazole

Infection due to *Echinococcus* species mainly affects the liver and lungs and, to a lesser extent, the brain, bones, and other organs [1]. There are few reports of primary muscular hydatidosis [2], perhaps partly because the parasites have to cross pulmonary and hepatic barriers to reach the muscles [1] and because the presence of lactic acid in the muscles renders them an inhospitable environment. We describe a patient with primary hydatidosis of a muscle in the forearm.

A 20-year-old woman was referred to our unit on 28 March 1994 with suspected soft-tissue sarcoma. Over the previous 3 months she had noticed a swelling on the right forearm and difficulty in extending the hand and wrist. Physical examination showed a relatively immobile subcutaneous mass that was ~10 × 8 cm in diameter and adhered to the deeper layers of the forearm; the overlying skin was inflamed, and the wrist was flexed and could not be extended. Plain films of the affected area yielded no information. An MRI revealed a mass (figure 1) suggestive of soft-tissue sarcoma. Routine blood tests yielded the following results: erythrocyte sedimentation rate, 35 mm/h; leukocyte count, 5.25 × 10⁹/L; eosinophil count, 0.15 × 10⁶/L. Other test results were normal.

A biopsy was performed, and ~50 mL of pus was drained together with a number of small white membranes that resembled grape skins. Following histological and bacteriologic analysis of the specimen (during which *Staphylococcus aureus* was isolated), the condition was diagnosed as a hydatid cyst. A hemagglutination inhibition test revealed that the titer of antibodies to *Echinococcus* was 1/160; findings on plain films of the chest and abdomen were normal, as were findings on an abdominal CT scan. The patient began receiving therapy with oral albendazole at a dosage of 10 mg/(kg⋅d) (200 mg every 8 hours) in preparation for surgical removal of the cyst.

Examination of the patient after 1 month had elapsed revealed that the mass had decreased considerably in size and was barely palpable; the patient was able to flex her wrist and fingers almost fully. She refused the operation and requested to be allowed to continue receiving albendazole. After she had received a 4-month course of therapy, findings of the physical examination were completely normal, no tumorous mass was palpable, and the patient had almost complete mobility of her hand and wrist. Treatment with albendazole was stopped. One year later, the patient had no symptoms at all, and findings on another CT scan with contrast...