Salmonella typhi epidural abscess occurring 47 years after typhoid fever

Case report

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A Salmonella typhi epidural abscess developed in a patient 47 years after he had recovered from typhoid fever. A search of the literature failed to reveal a previous case of epidural abscess due to Salmonella or a comparably long interval between an initial Salmonella infection and a resultant metastatic abscess. It is suggested that Salmonella be considered as the cause of focal central nervous system infection in any patient with previous salmonellosis, regardless of how long the interval between the two infections.

KEY WORDS • Salmonella typhi • epidural abscess • typhoid fever

FOCAL extra-intestinal infections with Salmonella occasionally complicate Salmonella gastroenteritis and the enteric fevers. Skeletal and endothelial structures are most commonly involved, and the central nervous system (CNS) is rarely affected. Indeed, when Salmonella does infect the CNS, it usually causes a nonfocal disease (meningitis).9,10 We report an apparently unrecognized focal CNS complication of salmonellosis: an epidural abscess. The case is also remarkable in that this abscess appeared almost a half-century after the patient's initial typhoidal infection.

Case Report

This 58-year-old man was admitted to Kaiser-Permanente Medical Center at Los Angeles for evaluation of headaches of several months' duration. He had otherwise been entirely well, although he claimed that he had suffered a nearly fatal episode of typhoid fever 47 years earlier.

Examination. At the time of admission, the results of a physical examination were normal except for papilledema. Skull radiographs were normal. A computerized tomography (CT) study of the head disclosed a large cystic mass in the right frontal area.

Operations. At surgery, a large epidural abscess was found and drained. The pus contained Gram-negative bacilli, and cultures grew Salmonella typhi sensitive to ampicillin and chloramphenicol (minimum inhibitory concentration of each drug was 3.1 μg/ml). Treatment with chloramphenicol was begun at a dose of 4 gm daily. Eight days later, the dose was reduced to 2 gm daily; therapy was discontinued after 23 days when leukopenia was noted.

The operative site healed well, and the patient had no further headaches. However, soon after, the incision began to exude sterile serous fluid. A second operation revealed inflamed tissue, cultures of which were negative. Antibiotic therapy was not given, and the incision healed rapidly. Two months later, serous drainage was again noted; this time, cultures of the drainage grew S. typhi. A bone scan indicated inflammation around the original burr hole, but skull radiographs did not show osteomyelitis. Additional laboratory studies revealed negative blood cultures, and negative stool cultures for enteric pathogens. (The patient's only household contact also had negative stool cultures.) Serum antibody titers to Salmonella "H" and "O" antigens were 1:5120 and 1:320, respectively, compared to titers of 1:60 and 1:80 at the time of the first admission.

A third surgical exploration revealed grossly infected bone around the burr hole. The involved bone was excised, complete with the capsule from the previous epidural abscess. Cultures of the bone grew S.
typhii. The patient received 6 weeks of intravenous ampicillin, 12 gm daily (self-administered at home for the last 4 weeks), and had no further problems. One year following completion of this therapy, a prosthesis was implanted in the cranial defect. At that time, the patient has subsequently remained well.

Discussion

Our patient's epidural abscess probably represented an extension of his cranial osteomyelitis. It is well known that epidural abscesses due to more common pathogens often arise from contiguous cranial infections. It is intriguing to speculate that the cranium may have been colonized with S. typhi during the course of typhoid fever that occurred almost a half-century before the present illness. Salmonella osteomyelitis may develop many years after initial infection with the organism, but such a long latent period has not previously been described. Salmonellae have not previously been reported as a cause of epidural abscesses and have only rarely been implicated in infections of the CNS besides meningitis. The other reported cases of focal Salmonella infection of the CNS have included several brain abscesses and subdural empyemas, and an infected epidural hematoma (Table 1).

Two of the reported focal infections (brain abscesses) developed in association with meningitis. Three cases appeared to be precipitated by trauma or neurosurgery. Finally, three other cases (including ours) probably were late sequelae of an earlier typhoidal illness. These cases demonstrate not only that Salmonellae can cause focal CNS infections but that it is important to suspect these organisms as a cause of such infection in any patient with previous salmonellosis, regardless of how long the interval.

References

Delayed *S. typhi* epidural abscess


Manuscript received March 25, 1982.

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