Recurrent Intraabdominal Abscess Caused by *Salmonella paratyphi* C

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We describe a patient who suffered from recurrent intraabdominal abscesses. The last two of the three abscesses were certainly caused by *Salmonella paratyphi* C. The time interval between the first and the second abscess was 25 years, and that between the second and the third abscess was 20 years. Single infection with this microorganism is very rare in Israel, with only four known cases in the last 20 years. The annual frequency in the United States is 0 to 2 cases per year. In recent years, this infection has also been very rare in other parts of the world. Our case is unique as it recurred two or three times. The infection was probably dormant for a very long time. During the dormant years, the patient was clinically healthy. To our knowledge a recurrent infection with this microorganism has not previously been reported in the literature.

*Salmonella paratyphi* C is an uncommon cause of infection in humans (2, 8, 9, 11). We describe a patient with three episodes of intraabdominal abscesses in 1935, 1960, and 1980. In the last two episodes, 20 years apart, the abscesses were shown to be caused by *S. paratyphi* C.

The patient, who was born in Russia in 1908 and immigrated to Israel in 1922, was admitted to our medical ward in August 1980, because of a fever which had persisted for several weeks despite antibiotic therapy.

In 1935, she was hospitalized elsewhere because of protracted fever. According to the incomplete records available, she was found to have an intraabdominal abscess. She recovered after the abscess was drained and was well for 25 years.

In 1960, she was admitted to our hospital because of fever, chills, and night sweats that had not responded to oral tetracycline. Physical examination revealed a large, tender mass in the left lower quadrant of the abdomen. Percutaneous puncture of the mass produced 300 ml of pus which grew *S. paratyphi* C on culture. After surgical drainage of the abscess, the patient recovered completely and was well for 20 years.

In August 1980, she was admitted to our medical service because of intermittent spiky fever, shaking chills, and night sweats that had persisted for several weeks. Antibiotic therapy before admission had been ineffective. A physical examination gave negative results except for kyphoscoliosis and moderate right lower quadrant abdominal tenderness. Routine laboratory tests, including complete blood count and urinalysis, were normal. Routine serologies were negative. No growth was obtained on repeated blood, urine, and stool cultures. Barium studies of the upper and lower gastrointestinal tract, ultrasonogram of the abdomen, liver scan, bone scan, and whole body gallium scan were negative. Approximately 1 month after admission, a large tender mass appeared in the right lower quadrant of the abdomen. A computed tomography scan revealed a finding compatible with a retroperitoneal abscess in the right psaas muscle. (Fig. 1). The mass was drained under computerized tomography control, and 300 ml of yellowish pus was aspirated. A culture of the pus grew *S. paratyphi* C. After aspiration, the temperature of the patient returned to normal, and the mass disappeared. The patient received trimethoprim-sulfamethoxazole and made an uneventful recovery. She has remained completely well, and follow-up physical examination after 2 years was completely normal. A culture of a duodenal aspirate for salmonella was negative.

*S. paratyphi* C was first identified in 1916 (5). Clinical syndromes related to infection with this organism were enteric fever, typhoid-like syndrome, bronchitis, and pneumonia (1). There were no reports of localized abscess formation. During subsequent years, isolated cases of *S. paratyphi* C infections were reported in the United Kingdom, China, the United States, New Guinea, and Egypt (1, 3, 4, 7, 10). In a report from a mobile U.S. military laboratory in a prisoner of war camp in South Korea, *S. paratyphi* C was isolated in 5 of a total of 357 cases of *Salmonella* infection during a 5-month period in 1953 (11). In a review by Saphra and Wasserman in 1954 and one by Saphra and Winter in 1957 (8, 9) only 11 cases of *S. paratyphi* C infection occurred as a result of 9,518 cases of nontyphoid salmonellosis.

Clinical findings in patients with *S. paratyphi* C infection or closely related *Salmonella choleraesuis* infection were (in decreasing order of frequency) sepsis, gastroenteritis, focal abscesses, pneumonia, urinary tract infections, SBE, and meningitis. An official report from the Centers for Disease Control in Atlanta, Ga., between 1973 and 1979 points to an annual frequency of 0 to 2 cases of *S. paratyphi* C infection in the United States (2). In a report from the Eastern Transvaal region of South Africa, 47 cases of *S. paratyphi* C were documented. All of the patients had clinical symptoms of enteric fever that lasted for 14 days. The organism was susceptible to chloramphenicol, trimethoprism-sulfamethoxazole, and ampicillin. All patients recovered and none were carriers of the organism. The infective agent was apparently spread by contaminated drinking water. Most of the patients were black young adults and children (6).

From our review of the literature it is apparent that *S. paratyphi* C infections are rare and usually sporadic. A relatively large number of cases were reported during World War I, but infections with this organism were very rare during subsequent wars. A relatively large outbreak occurred recently (1978) in South Africa, but this was appar-

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for 20 years until the exacerbation in 1980. To our knowledge, this is the first case to be reported of a recurrent abscess due to *S. paratyphi* C, and the long time lapse between the two episodes is certainly exceptional.

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**LITERATURE CITED**