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CASE REPORTS

A Pilot with Pain in His Leg: Thigh Abscess Caused by Salmonella enterica Serotype Brandenburg

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Salmonella enterica serotype Brandenburg is one of the more uncommon serotypes isolated from patients with gastrointestinal. Few cases of extraintestinal infections with serotype Brandenburg have been documented. The first case of a serotype Brandenburg-dependent thigh abscess originating from an atherosclerotic pseudoaneurysm of the femoral artery is reported.

CASE REPORT

During a medium-distance flight, a 57-year-old male Caucasian pilot suddenly experienced sharp pain in his right thigh followed by fever. The patient had hypercholesterolemia and non-insulin-dependent diabetes mellitus regulated by diet. In addition, he had previously experienced mild claudicatio intermittens in his right leg and had thus been prescribed acetylsalicylic acid. On the following day, he was seen by his general physician, who found no signs of deep venous thrombosis and prescribed diclofenac for symptomatic relief. During the subsequent week, the thigh swelling increased and the fever persisted. Five days after the initial symptoms, a tender nonfluctuating mass measuring 10 by 15 cm was found in the right thigh adjacent to the groin. A fine-needle puncture of the mass yielded blood only. A week later, magnetic resonance tomography of the thigh showed an extensive swelling surrounded by soft-tissue edema (Fig. 1A and B). A pseudoaneurysm of the right femoral artery with extensive collateral circulation was identified by intravenous angiography (Fig. 1C). Empirical antibiotic therapy with difloxacillin (750 mg three times orally) was initiated. However, the patient’s condition deteriorated and two anaerobic blood cultures were all negative. In addition, urine culture and four aerobic blood cultures, Campylobacter spp. In addition, urine culture and four aerobic blood cultures, Campylobacter spp., Yersinia, Shigella, and Campylobacter spp. In addition, urine culture and four aerobic blood cultures, Campylobacter spp., Yersinia, Shigella, and Campylobacter spp. were all negative. During a medium-distance flight, a 57-year-old male Caucasian pilot suddenly experienced sharp pain in his right thigh followed by fever. The patient had hypercholesterolemia and non-insulin-dependent diabetes mellitus regulated by diet. 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and 40 cases of muscle infections caused by *Salmonella* species have been published during the last 40 years (for a review see reference 6). Extraintestinal manifestations of serotype Brandenburg are rare, and in a recent paper only two cases of bacteremia with serotype Brandenburg were found out of a total of 32 cases of *Salmonella* bacteremia (11). The low incidence of serotype Brandenburg bacteremia is reflected by the few reports on focal extraintestinal infections. However, case reports have been published on isolation of serotype Brandenburg in a ruptured abdominal aorta (3), in an ovarian cyst due to endometriosis (9), and finally in acute suppurative thyroiditis (4).

Serotype Brandenburg belongs to genomic group XVIII when defined according to biotype, serotype, and randomly amplified polymorphic DNA typing (11). Although most cases of serotype Brandenburg are sporadic, the species has also been described in national epidemics (1, 14). An extensive study in New Zealand including pulsed-field gel electrophoresis and macrorestriction fragment length polymorphism revealed that, among 115 isolates, seven clusters were defined during a 5-year time period (14).

Extraintestinal manifestations of salmonella are found mainly in immunocompromised hosts (11) or in patients with atherosclerosis. Diabetes mellitus and human immunodeficiency virus infection are the most common predisposing conditions for systemic salmonella infections (6). Salmonella is a well-recognized cause of endovascular infection in different anatomic sites, of which mycotic aneurysm of the aorta is considered to be the most frequent (13). Among patients above 50 years of age with non-serovar Typhi *Salmonella* bacteremia, 7 to 10% have been reported to develop arterial infection (2, 5, 12). In our patient, the muscular abscess most probably originated from an atherosclerotic plaque that had become infected during a transient bacteremic episode. The intracellular bacterium salmonella has developed a sophisticated mechanism for surviving and replicating in macrophages (8), a phenomenon that might explain the organism’s preference for atherosclerotic plaques, which contain numerous phagocytic cells (7).

Our case illustrates that *Salmonella* infection has to be considered in the differential diagnosis of muscle infections, especially in patients with predisposing conditions such as atherosclerosis. Apart from surgical drainage of abscesses, correct identification of the causative organism is of utmost importance, especially for the long-term outcome of endovascular infections.

**REFERENCES**