Answer to Photo Quiz: Enteric Fever

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Ryan F. Relich,a John J. Manaloor,b Thomas G. Foxb

Department of Pathology and Laboratory Medicinea and Department of Pediatrics,b Indiana University School of Medicine, Indianapolis, Indiana, USA

Manual and automated phenotypic methods identified the lactose-nonfermenting blood culture isolate as a Salmonella species. Subsequent serotyping of the isolate by use of O and Vi group D antisera definitively identified it as Salmonella enterica subsp. enterica serovar Typhi, the etiologic agent of typhoid fever. A distinguishing feature of S. Typhi, which is evident in Kliger iron agar and triple sugar iron agar slants, is an alkaline slant, an acid butt, a lack of gas production, and a small amount of hydrogen sulfide that is limited to the stab line and the area where the agar was punctured (1). This feature alone is often sufficient for a preliminary identification of S. Typhi, since most nontyphoidal salmonellae produce hydrogen sulfide that is dispersed throughout the butt of these media.

Enteric fever results from infection with S. Typhi and Salmonella enterica subsp. enterica serovar Paratyphi A, B, and C. More common in countries with poor sanitation and lack of access to safe food and clean water, enteric fever affects an estimated 20 million people annually worldwide and causes approximately 200,000 deaths, many of the victims being children under age 5 (2). In the United States, approximately 400 cases are reported annually, the majority of which are associated with international travel to countries where the disease is endemic (3). South Central Asia has the highest incidence of infection, but disease in other locations such as Latin America and Africa is not infrequent (2).

The clinical manifestations of enteric fever are nonspecific, especially in children, who rarely have the classic clinical findings of rose spots and relative bradycardia. Fever is nearly universal, and abdominal pain and diarrhea can be seen. Severe disease and complications are most common in young children (4). Febrile children returning from travel to regions where typhoid is endemic should be evaluated for enteric fever and, depending on the specific locale visited, other potentially life-threatening travel-related diseases such as malaria, dengue, rickettsial infection, and viral hepatitis. Bacterial blood culture is the mainstay for the diagnosis of enteric fever. The Widal test, which detects serum antibodies to Salmonella enterica O, H, AH, and BH antigens, is utilized in many resource-limited settings despite its poor sensitivity and specificity (5).

Intravenous antibiotic therapy with a third-generation cephalosporin is the recommended therapy for children with severe disease. Resistance to ampicillin and trimethoprim-sulfamethoxazole is common; therefore, these agents should not be used before determination of in vitro susceptibility (3). Oral therapy with a fluoroquinolone or azithromycin is an option in nonsevere cases (4).

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REFERENCES