

Cambodian Monk with Malaise

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A 26 year-old Cambodian monk presents with complaints of a three week history of fatigue and malaise. The patient reports that four days prior to presentation he developed fevers to 103F, chills and a severe headache. The patient reports that he had returned from Cambodia one week prior to initiation of symptoms. He denies any sick contacts and denies any neck stiffness, photophobia, visual changes or abdominal pain. The patient does report diarrhea for one week with approximately 8-10 bowel movements per day. The patient denies any risk factors for HIV. The patient had been seen in the Emergency Department one day prior to admission. His temperature was 102F, pulse was 110 beats per minute, respirations were 20 breaths per minute and blood pressure was 110/80mm Hg. A lumbar puncture was performed, blood cultures and stool cultures were sent. The patient was discharged with a prescription for Percocet.

On the following day, the blood cultures yielded gram negative rods. The cerebrospinal fluid (CSF) was sterile and the patient was contacted and admitted to the hospital.

On examination, the temperature was 103.6F, pulse was 110 beats per minute, respirations were 18 breaths per minute and blood pressure was 102/66mm Hg. The patient had erythematous linear lesions on trunk and back, sclera was anicteric and there was no lymphadenopathy. Heart was regular without murmurs, lungs were clear to auscultation and abdomen was benign without evidence of organomegaly. Rectal exam was negative for occult blood. Laboratory examination revealed a normal white cell count. The patient's chemistries were also within normal limits. Liver tests revealed an AST and ALT of 219 and 192 respectively. Stool studies were negative and blood parasite smear was negative.

During his hospitalization, the patient was started on broad spectrum antibiotics and blood cultures grew out *Salmonella typhi*.

Discussion

Typhoid fever is a systemic infection with the bacterium *S. typhi*. Typhoid fever occurs mainly in the developing world such as India and Vietnam where sanitary conditions remain poor. Typhoid is usually contracted by ingestion of food or water contaminated by fecal or urinary carriers excreting *S. typhi*.

Salmonella organisms multiply within mononuclear cells in the lymphoid follicles, liver and spleen. The most

common sites of secondary infection are the gallbladder, Peyer's patches and the bone marrow. The incubation period is 7-14 days.

The clinical manifestations of typhoid start initially as an asymptomatic period of 7-14 days. Patients then develop fever and malaise, a dull frontal headache, anorexia and nausea. A tender abdomen, hepato/splenomegaly and a relative bradycardia are common. The fever in typhoid is initially low grade but rises progressively and by the second week is sustained. Occasionally, patients may develop rose spots on the abdomen and chest. Lab work usually reveals a normal white cell count, normal hemoglobin and platelets. Liver enzymes are usually two times the upper limit of normal.

The most important complications of typhoid are intestinal perforation, encephalopathy, and gastrointestinal bleeding. Relapse usually occurs two to three weeks after resolution of fevers and is usually milder than the initial attack. Fatality rate is less than one percent.

Blood cultures are the standard diagnostic method of detecting typhoid. They are positive in 60-80% of patients with typhoid. Typhoid can also be detected in the bone marrow with approximately 80-95% sensitivity. Typhoid needs to be distinguished from other endemic subacute febrile illnesses such as malaria, dengue, brucellosis, leptospirosis and tuberculosis.

The introduction of chloramphenicol for the treatment of typhoid transformed a debilitating disease into a treatable one. The emergence of resistance to chloramphenicol and other antimicrobials has been a major setback. The fluoroquinolones are the most effective drugs for the treatment of typhoid fever. Patients should be treated for a minimum of 10-14 days. Third generation cephalosporins are also effective. Chloramphenicol is appropriate in areas where the bacterium is susceptible.

Control of typhoid required the provision of safe drinking water, effective sewage disposal and hygienic food preparation. The typhoid vaccine is recommended for travelers to areas where typhoid is endemic.

References

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