Aeromonas Hydrophila: A Rare Cause of Biliary Sepsis

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Aeromonas hydrophila is a gram negative rod facultative anaerobe that is known to cause septicemia, gastroenteritis, and extra-intestinal infections that include: peritonitis, cholangitis, soft tissue infections, septic arthritis, osteomyelitis, ocular infections, myositis, urinary tract infections, pneumonia, meningitis, and hemolytic uremic syndrome (1,2,3). They mainly proliferate in aquatic environments with transmission occurring when humans make contact with such waters. Patients most prone to infection are infants with multiple medical problems, the immunocomprised patients, and patients with underlying chronic hepatobiliary disease. Aeromonas hydrophila have been most associated with causing human infections, approximately 85% compared to the other related species. (4) The case below presents a patient with an insidious onset of cholangitic symptoms associated with Aeromonas hydrophila bacteremia.

A 74-year-old white male with a history of hypertension, prostate cancer, dyslipidemia presented to the emergency room with abdominal pain. The pain has been present for the past three weeks since he returned from a cruise to Canada. He described the pain as dull and present mostly in the epigastrium without any radiation. At first, the pain was intermittent, however, over the past three weeks it has progressively become worse. The patient reports having up to seven loose brown bowel movements daily over the past three weeks. One week prior to coming to the emergency room, he saw an outpatient gastroenterologist who started him on a course of Metronidazole due to presumed Clostridium difficile colitis. One day before coming to the emergency room, the patient reported fevers of 103°F, chills, night sweats, dark colored urine and clay colored stools.

In the emergency room the patient was found to have a blood pressure of 90/P, a heart rate of 130, and a temperature of 100 F. There was no evidence of jaundice or scleral icterus and his mucous membranes were moist. The abdomen was soft, nontender, non-distended with bowel sounds present. Initial laboratory data revealed a mild leukocytosis of 10.8, BUN 19, Creatinine 1.3, Total Bilirubin 2.8, Direct Bilirubin 1.8, AST 411, ALT 302, and Alkaline Phosphatase 266. The patient was admitted to the general medical service for further evaluation and was started on aggressive fluid management as well as IV Moxifloxacin therapy. Abdominal ultrasound was performed that showed a thickened gallbladder wall and gallbladder sludge without evidence of acute cholecys-(continued on page 30)
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titis. MRCP was done that revealed a small amount of sludge in the dependant portion of the gallbladder, no biliary dilatation, and common bile duct measuring 5mm, without evidence of choledocholithiasis or pancreatitis. Hepatitis serology was non-reactive for A, B, C as well as stool studies being negative for ova, parasites, WBCs, and enteric pathogens. Blood cultures, however, were positive for Aeromonas Hydrophila. Based on the aforementioned laboratory and imaging, the patient was diagnosed with subacute cholecystitis with early signs of cholangitis complicated with Aeromonas Hydrophila bacteremia. Our patient underwent a laparoscopic cholecystectomy and he improved during his hospital course. Repeat blood work, liver function tests and blood cultures all normalized.

Aeromonas Hydrophila and its related species exist in various aquatic environments. From fresh, brackish, estuarine, marine, chlorinated and unchlorinated water supplies, human transmission can occur with transient contact (4,5). As noted above, Aeromonas species are known to cause various infectious disease conditions. Aeromonas Hydrophila has been recently found to be the cause of emerging extraintestinal infections in the coastal region of southern Karnataka (6). Infections such as leg ulcers and abscesses, cellulitis, pelvic inflammatory disease, spontaneous bacterial peritonitis, and pneumonia were found with positive Aeromonas Hydrophila cultures.

Some of the underlying conditions these patients had included diabetes mellitus, liver cirrhosis, and malignancy. Our patient did have a history of hypercholesterolemia predisposing him to a risk of precipitating cholesterol calculi, which can potentially compromise the biliary tract. This is the case for several patients who developed acute suppurative cholangitis with positive Aeromonas Hydrophila in bile cultures (7). Furthermore, out of one thousand forty-five patients with acute suppurative cholangitis, twenty-eight were found to have positive Aeromonas Hydrophila in bile cultures, proving it to be an uncommon pathogen affecting the hepatobiliary system.

In summary, Aeromonas Hydrophila is an uncommon pathogen that is can infect the biliary tract of humans. It should be a source explored in patients who present with cholangitic symptoms who have had recent travel history.

References