

## INTRODUCTION

- The genus *Aeromonas* consists of Gram-negative rods omnipresent in both fresh water and soils.
- They cause diarrheal disease; and extraintestinal manifestations such as bacteremia, hepatobiliary infections, meningitis, skin, and soft tissue infections.
- Bacteremia occurs commonly in patients with hepatobiliary disease, malignancy, and immunocompromised state.
- Some strains of *Aeromonas Caviae* have been found to invade the gastrointestinal tract and cause bacteremia even in immunocompetent patients.
- Recent studies have also shown that some species are responsible for healthcare-associated infections, causing significantly high mortality as compared to community-acquired infections.

## CASE HISTORY

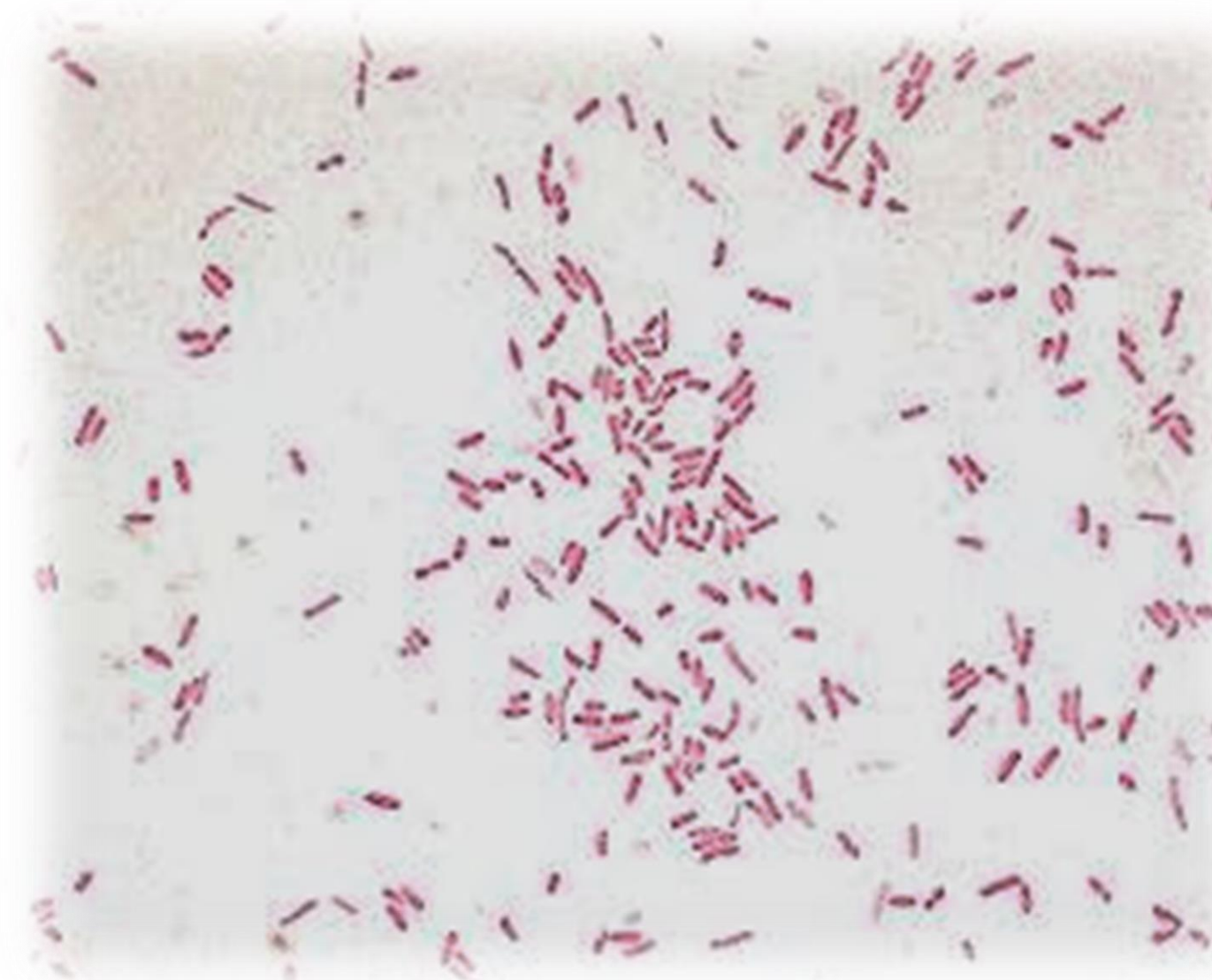
- A 38-year-old gentleman from rural India presented with one month of intermittent high-grade fever with chills, progressively worsening abdominal distension, anorexia, nausea, recurrent episodes of vomiting, and weight loss.
- His past medical history was significant for liver cirrhosis from alcohol use disorder; there were no complaints of altered sensorium, hematemesis, melaena, jaundice, or seizures.

## PHYSICAL EXAMINATION

- On admission his vitals revealed a pulse rate of 148 bpm, blood pressure of 124/80mm Hg, respiratory rate of 24 breaths per minute, and temperature of 102F. General examination revealed pallor.
- The liver edge was palpable 1 cm below the right costal margin with a liver span of 12 cm, no splenomegaly. There was abdominal distension with diffuse tenderness but no guarding or rigidity. Free fluid was present in the abdomen.
- The neurological examination was within normal limits with no features of encephalopathy.

## LABORATORY INVESTIGATIONS

- Hb of 9.9 g/dl, platelet count of 48,000/mm<sup>3</sup>, and white blood cell count of 4800/mm<sup>3</sup> with neutrophilic predominance. Liver functions revealed hyperbilirubinemia with transaminitis and hypoalbuminemia.
- Ascitic fluid analysis revealed 17,448 white blood cells per mm<sup>3</sup> with 96% polymorphonuclear cells. Ultrasound abdomen with doppler showed features of cirrhosis with gross ascites without any hepatic vein obstruction.
- He was diagnosed with spontaneous bacterial peritonitis with an underlying decompensated chronic liver disease (Child Pugh-C, MeldNa-25).
- Blood and ascitic cultures were sent, and he was started on IV Meropenem 1g Q8H.
- The blood cultures isolated *Aeromonas Caviae*, which was sensitive to Levofloxacin. The ascitic fluid culture was sterile.



Blood culture isolated *Aeromonas caviae* species

## HOSPITAL COURSE AND FOLLOWUP

- The antibiotic was changed to IV Levofloxacin and a course of two weeks was completed.
- His repeat ascitic fluid count was 104 WBCs/mm<sup>3</sup>.
- The patient had symptomatically improved. Within two weeks, he regained his appetite and remained afebrile.
- He was continued on his management for chronic liver disease.
- At an office visit one month later, he was symptomatically doing well. He was referred to an alcohol deaddiction program and planned for regular follow-up.

## DISCUSSION

- Most of the *Aeromonas*-implicated clinical diseases are caused by *A. caviae* (30.5%), *A. veronii* (23.1%), *A. dhakensis* (23.0%), and *A. hydrophila* (18.1%), and they are also known for causing polymicrobial infections.
- The three leading clinical manifestations are fever, septic shock, and altered consciousness.
- According to a study by Rhee et al, *A. caviae* was less prevalent in skin and soft-tissue infections and more prevalent in primary bacteremia and hospital acquired infections, and predominantly occurred in patients with solid organ malignancies.
- Initial empiric therapy of suspected *Aeromonas* infections is with a fluoroquinolone or carbapenem, as high antimicrobial-resistance rates have been noted to third-generation cephalosporins around the world.
- Although rare, the *Aeromonas* species should be considered one of the causative agents of bacteraemia in patients with hepatobiliary diseases or malignancies.

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