

Severe *Plesiomonas shigelloides* Gastroenteritis in a Young Healthy Patient

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Abstract

Introduction: *Plesiomonas shigelloides* gastroenteritis is rare in humans and occurs following the consumption of raw seafood, contaminated water and oysters containing the microorganism.

Clinical Picture: We describe a case of a young healthy lady, who had severe gastroenteritis after eating undercooked fish at hawker centre. The stool culture grew positive for *Plesiomonas shigelloides*.

Treatment and Outcome: She was treated with

intravenous ceftriaxone and later changed to oral ciprofloxacin. She was discharged well.

Conclusion: *Plesiomonas shigelloides* should be diagnosed and treated early as can cause severe gastroenteritis even in young healthy individuals. Untreated infections can be severe and fatal especially in immunocompromised hosts. Prevention of infection is the key and can be done by avoiding the consumption of raw seafood, contaminated water and oysters containing the microorganism.

Key words: *Plesiomonas shigelloides*, gastroenteritis, adult, raw seafood, oysters.

Introduction

Plesiomonas shigelloides (formerly *Aeromonas shigelloides*) is an anaerobic, Gram negative bacillus. This infection is rare in humans. (1-3) In humans, gastroenteritis occurs especially in immunocompromised hosts following the consumption of raw seafood, contaminated water and oysters containing the microorganism. We describe a case of young healthy lady, who had severe gastroenteritis after eating undercooked fish at Hawker Centre.

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Case report

Miss ASK, a 41 year-old Chinese lady was admitted on 11 Feb 2009 with loose stools, fever and severe crampy abdominal pain since one day before. The frequency of loose stools was 12 to 14 times per day. On 8 Feb 2009, she went to Hawker Centre and ate porridge with undercooked fish.

She had past medical history of *Helicobacter pylori* gastritis diagnosed on oesophago-gastroduodenoscopy and was treated with triple therapy in December 2008.

On examination, she was febrile with temperature of 37.9 °C, blood pressure 130/80 mmHg and pulse 86 per minute. Systemic examination was normal.

On admission, his full blood count showed haemoglobin 12.2

g/dL, total white $6.2 \times 10^9/L$, (neutrophils 82.4%, lymphocytes 10.3%, monocytes 7.1%, eosinophils 0%, basophils 0.2%), platelets $202 \times 10^9/L$. His CRP was 119.8 mg/L, potassium was 3.4 mEq/L, sodium, urea and creatinine were normal, urine and blood cultures were negative. Stool test showed leukocyte 3+ and stool cultures showed *Plesiomonas shigelloides* sensitive to cephalosporins, augmentin and carbapenems.

She was treated with intravenous ceftriaxone 1 gm per day for 2 days, followed by oral ciprofloxacin 500 mg twice a day for 2 days, 2 liters of intravenous hydration per day with potassium replacement for 4 days. Her blood culture was negative. After 4 days, her symptoms improved and she was discharged well on 17 Feb 2009.

Discussion

Plesiomonas shigelloides (formerly *Aeromonas shigelloides*) is an oxidase positive, facultative anaerobic Gram negative bacillus. It is rare in humans. It has emerged as a potential cause of enteric disease in humans, especially following the consumption of raw seafood and contaminated water and oysters containing the microorganism. (1-3)

There have been several well documented outbreaks of diarrheal disease associated with the microorganism in Japan, China, and Cameroon. (4-7)

The incubation period for illness ranges from 24 to 48 hours. (2) Patients present with watery or secretory diarrhea, but some have a more invasive, dysenteric illness. (1,2) Severe abdominal pain and cramping are common in adults. Symptoms are typically self-limited. However, a sub acute to chronic presentation, lasting between two weeks and two to three months, occurs in some patients.

Extra intestinal infections have included meningitis or meningoencephalitis (usually in neonates, with an associated case fatality rate of 80 percent), bacteremia (which may be preceded by enteric symptoms), wound infection, cellulitis, peritonitis and congenital endophthalmitis. (8-10) Reports

of *Plesiomonas shigelloides* infection in HIV-infected patients are increasing. Among patients with AIDS-associated diarrhea, this organism was the second most common pathogen (after *Campylobacter*) in a study from South Africa, and the third most common pathogen (behind *Salmonella* and *Vibrio parahaemolyticus*) in a study from Thailand. *Plesiomonas shigelloides* has also been isolated from patients with inflammatory bowel disease. There are case reports of extra intestinal infections with *Plesiomonas shigelloides*, including cellulitis, meningoencephalitis. Cases have generally involved immunocompromised hosts, including neonates, and patients with underlying hepatobiliary disease or hemochromatosis. Cases of peritonitis in association with continuous ambulatory peritoneal dialysis have also been reported. (8-14)

Plesiomonas shigelloides grows rapidly on selective and nonselective media. The organism is a nonlactose fermenter (as are *Salmonella* and *Shigella*), and consequently can be picked from MacConkey agar on routine stool culture. Colonies are oxidase positive. (3)

Treatment for diarrhea due to *Plesiomonas shigelloides* is usually not required, although antimicrobial therapy may be of value if symptoms are severe, protracted in young children, the elderly or immunocompromised hosts. Most *Plesiomonas shigelloides* strains are susceptible to cephalosporins, quinolones, and trimethoprim-sulfamethoxazole. The risk of *Plesiomonas shigelloides* infection can be reduced by avoiding consumption of raw or undercooked shellfish (particularly during warmer summer months).

Conclusion

Plesiomonas shigelloides should be diagnosed and treated early as can cause severe gastroenteritis even in young healthy individuals. Untreated infections can be severe and fatal especially in immunocompromised hosts. Prevention of infection is the key and can be done by avoiding the consumption of raw seafood, contaminated water and oysters containing the microorganism.

Figure 1. *Plesiomonas shigelloides*.



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