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Letter

Comamonas testosteroni: An Unusual Bacteria Associated with Acute Appendicitis

Dear Editor,

Comamonas testosteroni has been rarely observed as an infectious agent in clinical practice. The organism has the low virulence potency and infrequently causes human disease. *Comamonas* species (previously classified within the *Pseudomonas* group) have widespread environmental distribution and also survive for a long time in hospital environments (1, 2). We present a previously healthy adolescent with localised peritonitis as a complication of perforated appendicitis associated with polymicrobial aetiology including *C. testosteroni*.

A 16-year-old male presented to our hospital with acute abdominal pain, vomiting, and constipation for 3 days. On physical examination, abdominal tenderness, guarding and rebound tenderness at the right iliac fossa, and absence of bowel sounds were detected. The remaining examination findings were unremarkable. Laboratory findings were as follows: white cell count was $24.2x10^3$/μL (normal range: 5.1–15.5); haemoglobin 16.1 g/dL; platelet count $234x10^3$/μL; and C-reactive protein 189 mg/L (normal range: 0–8). Serum electrolyte levels, renal and liver function tests were in normal ranges. Abdominal ultrasonography revealed a tubular structure compatible with appendicitis. The presence of an appendicolith was detected. Exploration of the abdominal cavity showed an inflamed and perforated appendix and several adhesions around the terminal ileum. The appendix was removed and the adhesions were dissected. Saline peritoneal lavage was performed. The patient was treated with intravenous amicasin, ampicillin, and clindamycin. He was discharged from the hospital on the fifth day after the operation. The culture of peritoneal fluid revealed *C. testosteroni*, *Escherichia coli,* and *Enterococcus* spp. The isolated *C. testosteroni* was sensitive to ampicillin, ampicillin-sulbactam, ceftazidime, cefazolin, gentamicin, amicasin, ciprofloxacin, imipenem, and piperacillin and was resistant to ceftriaxone, cefuroxime, and trimethoprim/sulfamethoxazole.

Comamonas species are aerobic, Gram-negative, motile, pink-pigmented, oxidase-positive bacilli that grow well on routine bacteriological media. This group consists of four species: *Comamonas terrigena, C. testosteroni, Comamonas denitrificans*, and *Comamonas nitrativorans*. The organisms have low virulence potency and infrequently cause human disease (1). *C. testosteroni* is the most common pathogen of the genus. This organism is called 'testosteroni' because it can grow on media containing testosterone as a sole carbon source (2, 3)

The authors recently collected all reported cases relating to *C. testosteroni* since 1987. *C. testosteroni* had been isolated from the bloodstream in 13 cases, abdominal cavity in 10 cases, cerebrospinal fluid in three cases, urine in one case, cord blood in one case, vitreous sample in one case, and one from the infection site of an animal bite. Among the 10 cases with abdominal cavity infection, *C. testosteroni* had been isolated from the peritoneal cavity in eight cases, abscess material in one case, and appendix in one case. Any cases of peritoneal infection had predisposing factor. In two cases, perforated appendicitis or alcoholic cirrhosis was identified as the predisposing factor (2, 4). *C. testosteroni* had also been reported among the pathogens isolated from respiratory secretions of cystic fibrosis patients (5). *C. testosteroni* abdominal infections occur most often in association with perforation of the appendix; therefore, these infections are commonly polymicrobial. Our patient also had a polymicrobial aetiology.

Among the 33 patients with *C. testosteroni* infections including the present case, four patients died. All of the patients who died had underlying conditions. Apart from these patients, *C. testosteroni*-related infections responded well to antibiotic treatment (2, 3, 6). None of the patients with *C. testosteroni* abdominal infections died. As in previously reported cases, our patient recovered uneventfully by force of surgical intervention and antibiotic therapy. Most of the reported *C. testosteroni* isolates are susceptible to aminoglycosides, fluoroquinolones, carbapenems, piperacillin-tazobactam, most cephalosporins, and trimethoprim-sulfamethoxazole (3, 4, 7).

The patient presented localised peritonitis as a complication of perforated appendicitis due to a polymicrobial aetiology, including a rare human pathogen. We concluded that *C. testosteroni* peritonitis originating from perforated appendicitis might involve a healthy adolescent without known environmental exposure. Because the pathogen was susceptible to the empirical antibiotic treatment of appendicitis and timely surgical intervention, an uneventful outcome was achieved.

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