CORRESPONDENCE

Peritonitis Due to *Moraxella Non Liquefaciens*

*Editor:*

Peritonitis remains a major complication of peritoneal dialysis (PD). We present a case due to *Moraxella non liquefaciens*. To our knowledge, this is the first published report of PD peritonitis associated with this organism.

A 73-year-old Caucasian man on PD for about 2 years for end-stage renal disease due to diabetic nephropathy was referred to our division because of abdominal pain and fever. His medical history did not include previous episodes of PD. On admission, no infection was noted at the peritoneal catheter exit site. However, the dialysate was cloudy and showed $1.5 \times 10^9$/L white blood cells (WBC), of which 95% were polymorphonuclears. Initial Gram stain did not reveal bacteria. The patient was started on empirical treatment with cefazolin and ceftazidime according to our service’s protocol. Upon receiving the laboratory results, cefazolin was discontinued and ceftazidime was continued for 4 weeks, with complete recovery. A repeat culture, 1 week after discontinuation of ceftazidime was sterile and no WBC were observed.

According to standard procedures, the peritoneal fluid culture was cultured in aerobic and anaerobic blood culture bottles using the BACTEC FX (Becton–Dickinson, Mountain View, CA, USA) system. After 2 days of incubation, bacterial growth was detected in the aerobic bottle and Gram stain revealed coccobacilli. The organism was subcultured on trypticase soy agar with 5% sheep blood and chocolate agar; small, smooth, non-hemolytic, catalase and oxidase-positive colonies were observed. The isolated bacteria were biochemically identified by Vitek-2 system (bioMérieux, Marcy-l’Étoile, France) as *Moraxella* group, which include *Moraxella osloensis* (*M. osloensis*), *M. lacunata* and *M. nonliquefaciens*. Species identification was achieved by gene amplification and sequencing. The resulting sequence of the partial 16S rRNA gene yielded 99% identity to the strain CIP 68.36 of *M. nonliquefaciens* (accession number: JN75343).

In order to test β-lactamase production, chromogenic cephalosporin nitrocefin disk test was used as reference method (1). Antimicrobial susceptibility was determined by the Kirby-Bauer disk diffusion method as recommended by the Clinical and Laboratory Standards Institute (M45-A2). The bacterial isolate showed susceptibility to amoxicillin/clavulanic acid, cotrimoxazole and azithromycin.

The genus *Moraxella* consists of aerobic, gram-negative coccobacilli, which are a part of the normal flora in human skin and mucosal surfaces. The main natural habitat of *M. nonliquefaciens* is most probably the human nasal cavity, and this organism has mostly been isolated from respiratory and ocular sites (2). Even though *M. nonliquefaciens* can be considered a saprophytic organism in humans, some cases of infection caused by this organism have been reported: infective endocarditis (3), septic arthritis (4), thyroiditis (5), endophthalmitis (6,7), pulmonary infection (8) and sepsis (9).

**TABLE 1**

*Moraxella* Types Described in the Literature to Cause Peritonitis in Peritoneal Dialysis

<table>
<thead>
<tr>
<th>Author</th>
<th>Year</th>
<th>Cases</th>
<th><em>Moraxella</em> type</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cirillo P et al.</td>
<td>2009</td>
<td>1 patient transfer to hemodialysis</td>
<td><em>M. phenylpyruvic</em></td>
</tr>
<tr>
<td>Velesamy L et al.</td>
<td>2003</td>
<td>1 patient with HIV</td>
<td><em>Moraxella</em> and <em>kluyvera</em></td>
</tr>
<tr>
<td>Contreras MR et al.</td>
<td>1996</td>
<td>1 patient with diabetes</td>
<td><em>Moraxella (Branhamella) catarrhalis</em></td>
</tr>
<tr>
<td>MacArthur RD et al.</td>
<td>1990</td>
<td>2 cases with malnutrition</td>
<td><em>Branhamella catarrhalis</em></td>
</tr>
</tbody>
</table>

HIV = human immunodeficiency virus.

Our case highlights the rarity of *Moraxella* as cause of infection in peritoneal dialysis. Our patient completely recovered like the one described by Contreras et al. (12). However, the case described by Cirillo et al. (10) required transfer to hemodialysis, suggesting that this organism may cause loss of peritoneal catheter in spite of appropriate and prolonged antibiotic treatment.
To our knowledge, this is the first published case of PD associated with Moraxella nonliquefaciens. Several cases with other strains of Moraxella have been described, including M. catarrhalis and M. phenylpyruvica (Table 1).

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