Peritoneal Dialysis–Related Peritonitis Caused by Erosion of Umbilical Abscess into the Peritoneal Cavity

KEY WORDS: Peritonitis; umbilical abscess.

Editor:

We report a case of peritoneal dialysis (PD)–related peritonitis because of erosion of the peritoneal cavity by an umbilical abscess.

A 63-year-old man with end-stage renal failure because of diabetic nephropathy had been on PD for 10 years. He also had a history of bullous pemphigoid, and 1 week before admission, he had resumed taking systemic steroids because of worsening skin condition. This patient presented with generalized abdominal pain and turbid effluent. His PD effluent total cell count was $11\,360 \times 10^6/\text{L}$, and he was initiated on intraperitoneal cefazolin and amikacin. Culture of the PD effluent grew *Escherichia coli* and *Streptococcus salivarius*, both of which were sensitive to carbapenems. However, the peritonitis persisted despite a switch to intraperitoneal meropenem–amikacin.

A repeat physical examination found pustular discharge from the umbilicus. Abdominal computed tomography revealed a rim-enhancing collection at the umbilical region with fluid and gas, but with no evidence of intra-abdominal pathology (Figure 1). During surgical drainage of the umbilical abscess, a communication between the abscess and the peritoneal cavity was found, with turbid fluid draining out. The Tenckhoff catheter was simultaneously removed. Culture

Figure 1 — Contrast computed tomography of abdomen, showing a rim-enhancing lesion at the umbilical region (arrow).

of the abscess fluid identified the same organisms found in the PD fluid. The peritonitis resolved after catheter removal and completion of 2 weeks of intravenous meropenem.

The umbilicus is an embryologic remnant of the umbilical cord, which has direct communication with the peritoneal cavity in the fetal stage (1). In adults, this communication is usually closed, and umbilical infections are rarely observed. Umbilical infection is more commonly seen in children and neonates and is usually limited to a cutaneous infection. However, published reports have described associations of peritonitis with severe umbilical infections in pediatric populations (2).

Here, we report the first case of PD-related peritonitis in an adult patient as a result of erosion by an umbilical abscess into the peritoneal cavity. It is likely that the combination of poor diabetic control, a blistering skin condition, and recent exposure to corticosteroids contributed to formation of the abscess, which subsequently eroded into the peritoneum.

In patients with PD-related peritonitis, physical examination often focuses on the condition of the exit site and tunnel tract and on other localized intra-abdominal pathologies. However, clinicians should also bear in mind unusual sources of infection—such as the umbilical abscess in the present case—so as to facilitate appropriate and timely investigations and interventions that will significantly affect outcomes in patients with peritonitis.

DISCLOSURES

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