Unusual Cause of Late Peritoneal Dialysate Leakage

KEY WORDS: Catheter break; dialysate leakage.

Editor:

A 38-year-old patient with end-stage renal disease because of chronic glomerulonephritis started renal replacement therapy on continuous ambulatory peritoneal dialysis (PD). Four months later, the patient was transferred to tidal PD because of abdominal pain at the end of dialysate drainage. For 2 months, he remained in good condition on tidal PD. His tidal PD prescription included four 2-L dwells with 2.5% dextrose.

In the 10 days before presentation, the patient became aware of noteworthy pericatheter peritoneal leakage through the exit site. A physical examination revealed blood pressure 150/106 mmHg, body weight 68.8 kg (known dry weight: 60 kg), mild edema in both legs, and a normal-appearing exit site. Clear peritoneal fluid was detected around the catheter exit site. The rest of the physical examination was unremarkable.

The peritoneal dialysate was clear, with a cell count of 30/ μ L. Cultures from the exit site and peritoneal

effluent were negative. The patient was drained, and PD was stopped for 48 hours. Attempts to restart PD using just 1 L 1.5% dextrose caused immediate and significant dialysate leakage around the catheter at the exit site. The peritoneal catheter was removed, and a new catheter was placed in the abdominal wall on the same (right) side. On inspection of the removed catheter, a small break between the subcutaneous cuff and the deep cuff was detected at 2 cm proximal to the subcutaneous cuff.

Dialysate leakage represents a major noninfectious complication of PD and includes any dialysate loss from the peritoneal cavity other than via the lumen of the catheter. Exit-site leakage refers to the appearance of any wetness around the PD catheter identified as dialysate. Early leaks, occurring within 30 days of catheter insertion, most often manifest as pericatheter leakage (1). Late leaks tend to develop more than 30 days after catheter insertion and may present with poor dialysate outflow, subcutaneous edema, weight gain, peripheral or genital edema, hernias, and apparent ultrafiltration failure (1).

Treatments for dialysate leaks include surgical repair, temporary transfer to hemodialysis, lower dialysate volumes, and changing from the continuous ambulatory PD modality to automated PD. Delaying PD for 14 days after catheter insertion may prevent early dialysate leaks (1). Initiating PD with a low dialysate volumes has also been recommended as a good practice measure.

Breaks in PD catheters are not uncommon, but they usually occur in the external segment of the catheter. Although a catheter break usually occurs as a late complication, it can happen at any time after insertion. To our knowledge, this the first case of pericatheter peritoneal leakage caused by a break of the PD catheter inside the tunnel between the subcutaneous cuff and the deep cuff. It may be that some previously reported cases of pericatheter peritoneal leaks occurred as a result of misdiagnosed minor PD catheter breaks in the inter-cuff segment. The differential diagnosis of pericatheter peritoneal leakage or inter-cuff catheter break can be precisely resolved by computed tomography after infusion of 2 L of PD fluid containing radiocontrast material (1).

Inter-cuff breaks should be included in the differential diagnosis of the causes of pericatheter peritoneal leaks, because immediate removal of the broken peritoneal catheter, with placement of a new catheter at another site on the abdominal wall, is required.

DISCLOSURES

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