Persistent Abdominal Pain following Peritoneal Dialysis Catheter Removal for Peritonitis

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Case Description
A 53-year-old woman with ESKD on continuous ambulatory peritoneal dialysis presented to the emergency department with a 3-day history of chills, nausea, generalized abdominal pain, and vomiting. She had not performed peritoneal dialysis treatments for 3 days, and her abdominal exam revealed severe tenderness to palpation. Computed tomography (CT) scans revealed no organized intra-abdominal fluid collections. Attempts at obtaining peritoneal effluent cell counts were unsuccessful due to inability to drain fluid after instillation. The patient was started on intravenous vancomycin and cefepime, given high suspicion for peritonitis. Radiology-guided catheter intervention revealed an encapsulated catheter, with peritoneal cell counts of 10,600/µl (100% neutrophils) confirming the diagnosis of peritonitis, and cultures revealing pan-sensitive Pseudomonas aeruginosa. Catheter dysfunction continued after radiologic intervention and was surgically removed the next day, and the patient was transitioned to oral ciprofloxacin. The patient continued to complain of worsening nausea and left lower quadrant abdominal pain and developed worsening leukocytosis over the next 2 days. Intravenous cefepime was restarted, and repeat CT scans revealed fluid collections with rim enhancement in the right and left lower quadrants concerning for abdominal abscesses (Figures 1 and 2). Aspirate cultures revealed pan-sensitive Pseudomonas aeruginosa. The patient was continued on intravenous cefepime for 3 weeks, with subsequent imaging revealing resolution of the abscesses.

Discussion
Pseudomonas peritonitis has been associated with <50% complete cure rates that are associated with high rates of dialysis catheter removal (1–3). Studies have shown that peritoneal dialysis can be successfully resumed in patients after early catheter removal (1). Development of an intra-abdominal abscess is a rare complication of peritonitis and has been seldom reported in the literature (4,5). Abscess formation
specifically after catheter removal is uncommon and has been reported in small case reports (4,5). Clinical findings of persistent fever, abdominal pain, and tenderness along with leukocytosis are suggestive of abscess development and necessitate further radiographic investigation.

**Teaching Points**

- Abscesses are rarely mentioned in the literature as a complication of peritoneal dialysis associated peritonitis.
- Persistent fever, abdominal pain, tenderness, and leukocytosis during and after appropriate peritonitis management warrants additional radiographic investigation.

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**Author Contributions**

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**References**


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