Bowel Perforation Associated with Continuous Ambulatory Peritoneal Dialysis

Dear Sir,

We are reporting a case of delayed bowel perforation associated with the use of a continuous ambulatory peritoneal dialysis (CAPD) catheter, which resulted in the perforation of the sigmoid colon. We believe this was due to pressure necrosis from the catheter on the bowel wall.

A 74-year-old female patient with a history of end-stage renal failure secondary to hypertension, was admitted to our hospital complaining of nausea, vomiting, and abdominal distention for 3 days prior to admission. She underwent placement of Tenckoff peritoneal dialysis catheter through an open technique 6 months prior to presentation. At the time of admission, she was noted to have a cloudy dialysate drainage from her catheter. Her temperature and vital signs were within normal limits. Her white blood cell (WBC) count was 21,000 with a left shift. Physical examination demonstrated a soft distended abdomen with diffuse tenderness. Abdominal radiographs showed dilated small and large bowel consistent with an ileus but no free intraperitoneal air was identified. Peritoneal fluid samples revealed gram-positive cocci, later identified as Micrococcus species. WBCs or fecal elements were not identified. The patient was admitted to the hospital with a diagnosis of peritonitis secondary to her ongoing CAPD. Gentamycin (15 mg/l × 4 liters) and cefazolin (750 mg/l × 4 liters) was added to the dialysate.

Subsequently on the third hospital day, the patient developed increasing abdominal pain with rigidity. Abdominal films demonstrated free intraperitoneal air. She was taken to the operating room immediately, where a 5 × 5 mm perforation was identified on the antimesenteric border of the sigmoid colon. This corresponded in dimensions to the distal tip of the dialysis catheter. It was our impression that this injury was secondary to pressure necrosis from the catheter aggravated by distended large bowel. We did not observe any evidence of bowel ischemia or other pathology to account for this event. A Hartmann procedure was performed along with peritoneal lavage. The peritoneal catheter was removed. Dialysis was maintained utilizing a percutaneous subclavian access catheter. The patient subsequently expired on the twelfth postoperative day from complications related to the systemic inflammatory response syndrome. Perforation of the bowel is a rare complication of peritoneal dialysis (PD), reported in approximately 1 % of catheter placements [1]. This case, to our knowledge, is the first report of a delayed perforation of the colon resulting from an indwelling PD catheter placed through an open technique. We believe that this event was the result of pressure necrosis from the catheter tip...
on the wall of the sigmoid colon initiated by bowel distension resulting from an adynamic ileus secondary to catheter-associated peritonitis. The initial placement of antibiotics in her dialysate may have added some protection in preventing peritonitis from developing earlier in her hospital course, although the exact time of perforation relative to her initial presentation remains unclear. However, the precise mechanism for the perforation remains unknown. The widespread use of PD is a testament to its safety and efficacy. Minor complications, such as pain and catheter leakage, are the problems most frequently reported [1]. Bowel perforations are rare but serious complications of PD which to date have been limited to occurring at the time of insertion [2]. This case illustrates the case of delayed perforation of the sigmoid colon, which mandates that clinical suspicion for a bowel injury should be maintained in patients undergoing PD who suddenly deteriorate or develop signs of an acute abdomen, especially those patients who present with signs and symptoms of peritonitis associated with PD who fail to improve with conventional chemotherapy within 6-24 h [3]. The need for prompt recognition of this entity cannot be overstated.

References

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