CLINICAL VIGNETTE

Poor flow from Tenckhoff catheter

Kai-Ming Chow a,*, Ka-Tak Wong b, Cheuk-Chun Szeto a, Chi-Bon Leung b, Philip Kam-Tao Li a

a Department of Medicine and Therapeutics, Prince of Wales Hospital, Chinese University of Hong Kong, Shatin, Hong Kong, China
b Department of Imaging and Interventional Radiology, Prince of Wales Hospital, Chinese University of Hong Kong, Shatin, Hong Kong, China

Available online 15 April 2013

A 72-year-old patient reported a sudden development of poor outflow from his Tenckhoff catheter; he had been performing continuous ambulatory peritoneal dialysis for 3 years because of diabetic nephropathy and hypertensive nephrosclerosis.

There was a slow outflow rate, and the effluent volume was only 400–600 mL after an instillation of 2 L of dialysate; the inflow rate was variable. He reported neither constipation symptoms nor the presence of fibrin in the dialysate effluent. Examination confirmed a right inguinal hernia, which had been known for 6 months, and the patient was scheduled to undergo surgical repair. Drainage volume and flow rate showed no improvement with addition of heparin to the dialysate.

Several possibilities of outflow failure (drainage volume being significantly less than the inflow volume) in peritoneal dialysis were considered. Common examples include bowel trapping (mostly due to constipation) and catheter migration (frequently to the subdiaphragmatic location with subsequent omental trapping). In the case of fibrin encasement and catheter kink, the dialysate inflow rate would have been slow as well. Another important consideration is subcutaneous dialysate leakage; however, this condition is accompanied by a reduction in the volume drained but a normal outflow rate. Furthermore, no pitting edema at the lower abdomen was observed in this patient to suggest subcutaneous leakage of dialysate.

An abdominal radiograph was taken to confirm the position of the Tenckhoff catheter tip and to rule out kinking of the catheter. Two striking features in this case are the presence of a preexisting right inguinal hernia and the apparently extraperitoneal location of the catheter tip from the abdominal radiograph (Fig. 1). The catheter appeared to have passed down on the right side, via a point approximately midway between the patient’s right anterior superior iliac spine and the right pubic tubercle, and extended beyond the pubic bone.

A computed tomography of the abdomen and pelvis confirmed that the catheter was located within the enlarged right scrotal sac containing bowel loops and mesenteric fat (Fig. 2). Surgical exploration after incision down to the right external oblique aponeurosis identified the indirect inguinal hernia sac containing the Tenckhoff catheter and 1 L of clear peritoneal dialysate fluid. Hernia mesh repair and repositioning of the Tenckhoff catheter allowed the resumption of smooth peritoneal dialysis.

Despite a relatively high prevalence (10–25%) of hernia in peritoneal dialysis patients,1 the complication of catheter migration into an indirect inguinal hernia is relatively uncommon. To our knowledge, only one similar case of flow obstruction secondary to misplaced Tenckhoff catheter at

* Corresponding author. Department of Medicine and Therapeutics, Prince of Wales Hospital, Chinese University of Hong Kong, Shatin, Hong Kong.
E-mail address: Chow_Kai_Ming@alumni.cuhk.net (K.-M. Chow).
the inguinal hernia sac had been reported in the literature; that patient experienced immediate flow obstruction after Tenckhoff catheter insertion. Both cases were diagnosed after a simple investigation of plain abdominal radiograph.

References
