CASE REPORT

Travails of self-manipulation of a catheter

¹A MISHRA, ²A ELUSTA, ²T SHWAISH and ²E F EHTUISH

¹Department of Radiology, National Organ Transplant Program, Central Hospital, Tripoli, Libya, and ²Department of Surgery, Tripoli Central Hospital, Libya

ABSTRACT. A large number of patients suffer from Stage 5 chronic kidney disease (CKD). One of the treatment options used in these patients is continuous ambulatory peritoneal dialysis (PD), which is known to improve patient quality of life. 15–50% of Stage 5 chronic kidney disease patients are on PD in the USA. The PD catheter maybe inserted into the abdominal cavity by a surgeon, an interventional radiologist or a nephrologist. We report the most unusual case of an adult patient who reinserted the slipped PD catheter himself leading to an “unseen before” complication.

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Peritoneal dialysis (PD) was introduced in 1976 and has been shown to be an effective method of renal replacement therapy for end-stage renal disease patients. It has several advantages over haemodialysis, but is still an underused treatment. There are various means of PD insertion and they can be inserted by a surgeon, an interventional radiologist or interventional nephrologist. We report an unusual case of an adult patient who reinserted the PD catheter leading to interesting consequences.

Case report

A 38-year-old male patient with end-stage renal disease owing to adult onset polycystic kidney disease who had been on continuous ambulatory peritoneal dialysis for 6 months presented to the emergency department with the complaint of “something coming out of anus” and vertigo. He gave a recent (6 days) history of “fall-down” in the toilet with slipped-out PD catheter. He had then forcibly manipulated the catheter himself to try reinsert it. He had undergone a single session of dialysis 36 hours previously and had noticed “something coming out” of the anus for 6 hours. There was no history of sudden-onset abdominal pain, bleeding per rectum or abdominal distension.

On examination, the PD catheter was seen coming out of anal opening. Biochemical results showed a white blood cell count of $4.5 \times 10^3 \text{ ul}^{-1}$; with lymphocytes at 47.3% and neutrophils at 36.1%. Haemoglobin levels were 8.3 g dl^{-1} .

A CT scan was performed to locate the track of the PD catheter. It was seen to enter through the rectosigmoid junction (Figure 1) into rectal lumen and protrude out

through the anal opening (Figure 2). Curved multiplanar reformatted images were useful to demonstrate the catheter track (Figure 3). There was no pneumoperitoneum or any pelvic collection. No sign of pelvic inflammation was seen.

The open surgical method had been used for PD catheter insertion with the catheter tip placed in the true pelvis.

The PD catheter, which was a Tenckhoff single-cuff type with straight intra-peritoneal segment (Quinton Instrument Company, Seattle, WA), was removed under general anaesthesia from its anterior abdominal wall insertion site without any complications.

The patient is now on haemodialysis and preparing for renal transplant.

Discussion

In the mid-twentieth century PD was mainly used for patients with acute renal failure. The use of PD has grown in chronic kidney disease (CKD) patients since then but is still underused. Patients on regular nephrology follow-up are frequently made to commence dialysis in an unplanned manner. For no valid reason, haemodialysis is more popular than PD in these situations despite several advantages, such as preservation of renal function, better clearance of middle molecules, good blood pressure and volume control, fewer dietary restrictions, improved quality of life and cost-effectiveness. Even the survival rate is comparable with haemodialysis. On the other hand, there are various complications limiting the use of PD, which can be attributed to the method of PD placement. There are various methods for PD insertion; these include surgical, laparoscopic, peritoneoscopic, fluoroscopy-assisted and “blind”. The major complication of percutaneous placement as a blind technique is the risk

Address correspondence to: Anuj Mishra, P.O. Box 7913, Tripoli, Libya. E-mail: dranujmish@yahoo.com

Figure 1. Sagittal reconstructed CT scan showing the entry point into the colon.

of inadvertent puncture of the viscera [1, 2]. In our patient, the technique of reinsertion by the patient himself was quite crude and hence visceral perforation was not unexpected. His “fall-down” episode was accidental and

not related to his mild anaemia. The incidence of visceral perforation in nephrologist-related procedures has been reported as 0.8% [3]. Maya [4] reported 1 bowel puncture in 32 PD catheter attempts (31 successful) with resolution

Figure 2. Sagittal reconstructed CT scan shows the exit point of the peritoneal dialysis catheter.

Figure 3. Curved multiplanar reformatted CT scan shows the complete track of the peritoneal dialysis catheter.

and without surgical intervention. Most of the perforations reported are small and seal spontaneously without any intervention. We did not come across any published reports during the MEDLINE and PubMed searches where the patient had tried to reinsert the PD catheter themselves resulting in such a complication.

Conclusion

Patients should be clearly instructed not to manipulate the PD catheter as it may result in major problems and the risk of having to switch to haemodialysis.

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