Peritoneal-Uterine Communication: A Complication of Prolonged Embedding of a Peritoneal Catheter

Editor:

To avoid temporary hemodialysis in patients approaching end-stage renal failure, early placement of a peritoneal dialysis (PD) catheter has been suggested (1,2). However, complications have been reported with prolonged embedding of PD catheters (3,4). In particular, bowel perforation has been noted (5,6), but no reports of uterine perforation have been published.

A 76-year-old woman with advanced renal failure secondary to diabetic nephropathy and hypertension was admitted to hospital because of dull discomfort in her lower abdomen. Ten weeks earlier, a Tenckhoff swan-neck double-cuff catheter had been implanted in her peritoneal cavity without complications. Her creatinine was 5.8 mg/dL, and the Tenckhoff catheter had not yet been used. The catheter extension tubing (connection tubing between the catheter and the PD dialysis solution bag) was noted to be occluded with yellowish crystal-like material (Figure 1).

After the occluded extension tubing had been changed, 1.5% dialysis solution was infused into the patient's catheter through the new extension tubing to

Figure 1 — Yellowish crystal-like material (arrow) was found inside the peritoneal dialysis catheter extension tube (a typical extension tube is shown for comparison). No material of this kind should be found inside the extension tube.

test patency. During infusion, leakage of dialysis solution from the vagina was noted. This vaginal leakage was confirmed by subsequent infusion of methylene blue solution. Abdominal computed tomography showed pooling of contrast in the uterus and vagina with an air–fluid level (Figure 2). Laparoscopy was therefore arranged, during which the Tenckhoff catheter tip was found to have become wrapped by omentum and fixed in the pouch of Douglas, where it had eroded into the wall of the uterus (Figure 3). The Tenckhoff catheter tip was laparoscopically dissected free and pulled back from the uterus into the pelvic cavity without suture at the leakage site. Although no peritonitis was observed, prophylactic antibiotics were administered. The abdominal discomfort soon subsided. Ten months later, PD was initiated with no complications and no further vaginal leakage. The patient continues on PD 12 months later.

Figure 2 — (Left panel) Computed tomography imaging of pelvis, without contrast. The Tenckhoff catheter (arrowhead) is seen at the left vesico-uterine pouch, near the left round ligament (arrow), pointing toward the left cornus of the uterus. Some intraperitoneal fluid is evident (arrow head) in the Douglas pouch. (Right panel) The uterine cavity (arrowhead) is immediately opacified upon injection of contrast medium through the Tenckhoff catheter (arrow), indicating the presence of peritoneal–uterine communication.

Figure 3 — Under laparoscopy, the Tenckhoff catheter is seen to be immobilized in the peritoneal cavity by omental wrapping (arrows) and fibrous bands (arrowhead). All the side holes of the catheter were also wrapped by omentum.

We hypothesize that the omental wrapping had immobilized the catheter tip, which may have been rubbing repetitively against the uterus, eventually penetrating it and creating a peritoneal–uterine communication. We also hypothesize that secretions from the uterine cavity then entered the extension tubing, having traveled from the tip of the Tenckhoff catheter as a result of raised intra-abdominal pressure during coughing, voiding, defecation, and so on. The secretions likely became crystalline after sitting for a period of time in the extension tubing, eventually occluding the tube. The exact nature of those secretions is unclear.

The peritoneal–uterine communication healed spontaneously without primary suturing after the Tenckhoff catheter was pulled back into the pelvic cavity. The uncomplicated PD course after initiation of PD 12 months later shows that the Tenckhoff catheter does not necessarily have to be removed in patients with a peritoneal–uterine communication.

DISCLOSURES

The authors have no financial conflicts of interest to declare.

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