FRESENIUS MEDICAL CARE

For Nurses

PD Drain Problem-Solving Guide

This guide is intended to provide you with a PD outflow problem-solving process.

Identifying the cause of outflow failure is essential to resolving the problem.

If both inflow and outflow are impaired in the weeks following catheterization, subcutaneous segment of the catheter may be kinked or twisted.

Clots or fibrin resulting from surgery, or a recent episode of peritonitis, may also impair flow.[1–3]

If only outflow is impeded, it could be due to an entrapped or misplaced catheter.[1,2]

Outflow obstruction occurs when drainage of the peritoneal cavity is impaired due to:[1–3]

– Intraluminal blockage resulting from fibrin or clots
– Mechanical obstruction such as kinking or clamping
– Entrapment resulting from constipation, or extrinsic bladder compression on the catheter due to urinary retention, omental wrapping, or adhesions
– Misplacement or migration of the catheter tip out of the true pelvis

If peritonitis is suspected, prompt treatment of infection is necessary.

Immediately start intraperitoneal antibiotics.

Ensure the catheter is functional by:

– Flushing to restore proper flow
– Avoiding mechanical manipulation to prevent possible intense pain[3]

If adequate inflow and outflow cannot be achieved this way, acute catheterization may be necessary to start intraperitoneal antibiotic therapy.[2,3]

FRESENIUS MEDICAL CARE

While definitive diagnosis may ultimately require surgical intervention, the following noninvasive sequence is recommended in the literature:

1 Patient on PD with catheter flow problems

– Ensure impaired flow is not due to dialysate leaks

2 Use the following noninvasive approaches

– Look for visible kinks in lines and check that clamped lines are appropriately opened or closed
– Change body position, climb stairs, or place knee to chest to aid in fluid movement or for catheter repositioning[1,4]
– Use laxatives to treat constipation (resolves 50% of outflow problems)
– Irrigate or "power flush" with saline[1,4,5]
– Use intraperitoneal heparin to prevent fibrin formation (500–2000 units/L)[1–3]

3 Has the flow problem resolved?

Yes

No further evaluation required

No

Obtain abdominal radiograph to check for kinks or adherent intraperitoneal structures including omental wrapping. Options may include wire manipulation of catheter, fluoroscopy, laparoscopic repositioning, and catheter replacement.[1–7]

If outflow issue is not resolved, more aggressive approaches may be necessary.

The information contained here is not intended to replace the judgment or experience of the attending physician or other medical professional. The treatment prescription is the sole responsibility of the attending physician. Please refer to your dialysis center's policies and procedures for further information.

Fresenius Medical Care North America
920 Winter Street, Waltham, MA 02451 | fmcna.com

D/N US-PD-000008 Rev B 07/2024

1. Gokol R, et al. Peritoneal catheter and exit site practices toward optimum peritoneal access: 1998 update. Perit Dial Int 1998;18:11-33.
2. Crabtree JH, et al. Creating and maintaining optimal peritoneal dialysis access in the adult patient: 2019 update. Perit Dial Int 2019;39:414-436.
3. Crabtree JH, Jain A. Peritoneal dialysis catheters, placement, and care. In: Daugirdos JT, Blake PG, Ing TS, eds. Handbook of Dialysis. 5th Ed. PA: Lippincott Williams & Wilkins, 2014:425-450.
4. Ales LM. Peritoneal dialysis complications. In: Counts C., ed. Core Curriculum for Nephrology Nursing. 7th Ed. Pitman, NJ: American Nephrology Nurses' Association, 2020:1166-1182.
5. Zaman F. Peritoneal dialysis catheter placement by nephrologist. Perit Dial Int 2008;28:138-141.
6. Crabtree JH. Selected best demonstrated practices in peritoneal dialysis access, Kidney Int 2006;70:S27-S37.
7. Flanigan M, Gokal G. Peritoneal catheters and exit-site practices toward optimum peritoneal access: a review of current developments. Perit Dial Int 2004;25:132-139.