

PD Drain Problem Solving Guide For PD Nurses

The PD Drain Problem Solving Guide is intended to provide you with a PD outflow problem solving process.

Outflow obstruction occurs when drainage of the peritoneal cavity is impaired due to¹:

- Intraluminal blockage resulting from fibrin or clots
- Mechanical obstruction such as kinking or clamping
- Entrapment resulting from constipation, omental wrapping, or adhesions
- Misplacement or migration of the catheter tip out of the true pelvis

Identifying the cause of outflow failure is essential to resolving the problem. If both inflow and outflow are impaired, particularly in the weeks following placement, the subcutaneous segment of the catheter may be kinked or twisted. Likewise, clots or fibrin resulting from surgery or a recent episode of peritonitis may also impair flow^{1,2}. In contrast, an entrapped or misplaced catheter may not impair inflow while outflow would likely be impeded¹. While definitive diagnosis may ultimately require surgical intervention, the following non-invasive sequence is recommended in the literature:

1. Look for kinked or clamped lines and feel for subcutaneous kinks²
2. Change body position (move fluid)^{1,3}
3. Prevent and treat constipation (relieves ~50% of outflow problems)^{1,2,3}
4. Irrigate or “power” flush with dialysate^{1,3,4}
5. Intraperitoneal heparin to prevent fibrin formation (500-2000 units per L)¹
6. Non-invasive catheter repositioning (knee chest, climb stairs)^{1,3}

If peritonitis is suspected, the interventional focus shifts to treating the infection, preferably through intraperitoneal antibiotic administration. Therefore, it is paramount to have a functional catheter. Flushing of the catheter is suggested in an attempt to restore proper flow. Mechanical manipulation of the catheter is contraindicated because it would likely result in intense pain². If it is not possible to achieve an adequate inflow and outflow, an acute catheter might be necessitated to start intraperitoneal antibiotic therapy².

If all else fails, more aggressive therapies may be required to relieve outflow problems.

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2. Ash S and Daugirdas JT, Peritoneal Access Devices, pp 356-375, Handbook of Dialysis 4th ed, Daugirdas JT, Blake PT, Ing TS editors, Lippincott, Williams and Wilkins, Philadelphia, 2007
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4. Prowant B, Gallagher NM. Peritoneal dialysis. In: Lancaster LE, ed. Core Curriculum for Nephrology Nursing. 3rd Ed. Pitman: American Nephrology Nurses' Association, 1995:281-32
5. Zaman F. Peritoneal dialysis catheter placement by nephrologist, *Perit Dial Int* 28: 138-141, 2008
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The information contained here is not intended to replace the judgement 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 clinic's policies and procedures for further information.