Catheter-Related Problems

These usually occur soon after implantation:

• 2-way obstruction
  • problem with inflow and outflow
• 1-way obstruction
  • good inflow, poor outflow
• painful inflow or outflow
First Patient

• A 6’2” man, weighing 110 kg has an uneventful insertion of a PD catheter
• At the visit to the PD unit 1 week later, the nurse instills 1 L of dialysis fluid, which flows in easily
• The nurse drains it out, but only 300 ml returns (also good flow)
Now What?

1. Irrigate the catheter with heparin
2. Instill tPA in the catheter and allow it to stay for >2h
3. Instill another 1 liter of dialysis fluid
4. Prescribe PEG or something similar for constipation
5. Place a permcath and start hemodialysis
Second Patient: Painful Inflow and Outflow

- A 67 year old type 2 diabetic has an uneventful insertion of a PD catheter
- She comes to clinic for training
- The last 200 mls of effluent outflow repeatedly leads to discomfort and even cramping in the abdomen
- On the cycler every drain leads to this cramping
Now What?

1. Prescribe a narcotic analgesic to be taken at the start of each dialysis session
2. Convert the patient to hemodialysis
3. Add bicarbonate, or use pH-neutral dialysis fluid instead of conventional dialysis fluid
4. Prescribe tidal PD
Patient 3: Terror in the ER

• A 19 year old woman with CKD has a PD catheter inserted uneventfully
• She is trained successfully for APD and is discharged
• 5 weeks later she calls the unit to say that her effluent is bloody
• There is no pain and no symptoms of infection
• She is told to bring her bloody effluent to the ER
Terror in the ER: 2 Liters of Blood!
Now What?

1. Cross and type for 2 U PRBC
2. Ask her if she is menstruating
3. Follow the ISPD protocol for empiric treatment of PD peritonitis
4. Request an urgent CT scan from the ER
Patient 4: Trouble Down Below

- 36 year old man, IgA nephropathy
- deceased donor transplant X 10 years, chronic allograft nephropathy
- returns to PD
- catheter inserted laparoscopically
- patient trained on cycler PD
Trouble Down Below, continued

- discharged on night IPD, *day dry*
- 1 month later, started on day dwell
- comes to unit 1 week after start of day dwell complaining of an edematous penis
Now What?

A. Prescribe high-dose loop diuretics
B. Ask for a urology opinion
C. Get a CT scan with IP radiocontrast
D. Get a serologic test for syphilis
Patient 5: Early-Onset Shortness of Breath

- 42 year old woman with progressive GN, decides on home PD
- she is discharged on APD, 2L X 3 exchanges over 8 h, 1.5L last fill
- 3 days later, she calls the unit, complaining of *progressive shortness of breath*
- mild cough, but no fever or sputum
- weight is increased 1 kg, but no edema nor change in blood pressure
Now What?

A. Advise the patient to use all 4.25% dialysate solutions
B. Advise the patient to take furosemide 40 mg bid
C. Get a chest X ray
D. Advise the patient to use icodextrin exchanges every 4 hours
The Chest X Ray
A. Start IV antibiotics to cover community-acquired pneumonia
B. Order pulmonary angiography to rule out pulmonary embolus
C. Start anti-tuberculous therapy as soon as possible
D. Stop peritoneal dialysis
Patient 6: Complications Fixing a Sink

- 48 year old man with polycystic kidney disease is trained on cycler dialysis. Current prescription is 2.0 L X 4 exchanges over 8 hours at night, with 1.8 L day dwell
- one year later: he is doing well
- residual renal GFR is 8 ml/min
- his wife is almost finished being worked up as a kidney donor and is likely to be accepted
Complications Fixing a Sink

- at clinic, he reports a new “lump” in his left groin
- he had been bent over looking under a sink and felt a “pop” and some tenderness in the groin
- on physical exam, there is a left inguinal hernia
Now What?

1. Order an urgent CT scan of the abdomen
2. Order urgent surgery consultation
3. Convert the patient to permanent hemodialysis
4. Change the PD prescription to one with lower intra-abdominal pressure and discuss hernia repair with the patient
Patient 7: “I Feel Like I’m Going to Explode”

• A 29 year old woman with CKD secondary to lupus nephritis has an uneventful insertion of a PD catheter
• She is 5’ 1” and weighs 48 kg
• Residual GFR is 8 ml/min
• Initial prescription is 2L x 3 exchanges overnight, 2 L last fill
• She writes on Facebook that her abdomen feels tight and bloated and she wants to change to hemodialysis
Now What?

1. Change the day dwell from dextrose to icodextrin
2. Reduce the volume of the day dwell, or eliminate it altogether
3. Change the patient to hemodialysis
4. Use intra-peritoneal xylocaine for the discomfort
Catheter dysfunction is a significant cause of early PD technique failure. Have an organized approach to inflow vs outflow problems, good communication with whoever is inserting the catheter, and use tidal PD for inflow and outflow pain.

Early hemoperitoneum is usually from PD catheter insertion, and later on hemoperitoneum most commonly from the menses.

Leaks are usually the result of pre-existing anatomical defects and can frequently be fixed and temporized with low-pressure PD.

Hernias are common in PD and can usually be repaired without a temporary or permanent transition to HD.