

St. Paul's Hospital

Peritoneal Dialysis Catheter Bedside Insertion

G. Nussbaumer

SPH – Bedside PD Catheters

- Thanks to Dr. Abeer Jamal
- Data obtained from PROMIS Access Module

SPH – Bedside PD Catheters

- Pt. Selection
- Technique Used
- Patient Numbers
- Advantages/Disadvantages
- Outcomes

SPH – Bedside PD Catheters

- **Pt. Selection**
- Technique Used
- Patient Numbers
- Advantages/Disadvantages
- Outcomes

SPH – Bedside PD Catheters

- Almost everyone is a candidate for bedside insertion
- Exceptions
 - Pt. Needing other surgical intervention such as hernia repair
 - Pt. With previous hernia repair with mesh (that is in the way)
 - Pt. With multiple previous abdominal surgeries

SPH – Bedside PD Catheters

- Admit over night
- Procedure takes 30 to 45 minutes

SPH – Bedside PD Catheters

- **Technique Used**
- Patient Numbers
- Advantages/Disadvantages
- Outcomes

SPH – Bedside PD Catheters

- Peritoneoscope
- Procedure Room on Renal Ward

SPH – Bedside PD Catheters



SPH – Bedside PD Catheters



SPH – Bedside PD Catheters

- Pt. Supine, in trendelenberg
- Abdomen Exposed
- Prepped and draped (2% chlorhexidine gluconate)
- No premedication (no prophylactic antibiotics, no analgesic, usually no anxiolytic)

SPH – Bedside PD Catheters

- 1 % xylocaine with epinephrine
- 1 cm incision approx. 2 cm below umbilicus
- Quill inserted into peritoneum, abdomen insufflated with 1 liter air
- Quill directed to LLQ with peritoneoscope
- Scope removed, quill dilated
- PD cath advanced through quill as quill is removed

SPH – Bedside PD Catheters



SPH – Bedside PD Catheters

- PD catheter connected to flush
- If good inflow and outflow, tunnel is measured and frozen
- PD tube pulled through tunnel, fitted with titanium adapter, transfer set, capped of with 7cc 1000 u/ml heparin
- Midline incision sutured with 2 2-0 silk sutures

SPH – Bedside PD Catheters



SPH – Bedside PD Catheters

- Technique Used
- **Patient Numbers**
- Advantages/Disadvantages
- Outcomes

SPH – Bedside PD Catheters

Pt. #

	Bedside	Surgical	Total	# Pts
2005- Aug	41 (85%)	7	48	46 2,2
2006	50 (89%)	6	56	52 4,2
2007	72 (95%)	4	76	71 1,3 3,2
2008	29 (94%)	2	31	27 4,2

SPH – Bedside PD Catheters

- Technique Used
- Patient Numbers
- **Advantages/Disadvantages**
- Outcomes

SPH – Bedside PD Catheters

Advantages

- No wait for PD tube insertions
- No mistakes with insertion/tube assembly
- Smaller incision, faster recovery, less bleeding
- Significantly less cost to healthcare system
- Easier to initiate changes to procedure/equipment etc.

SPH – Bedside PD Catheters

Disadvantages

- Visualization not as good as in OR
- No lysis of adhesions etc.
- Loss of surgical expertise
- Pt. awake
- Pt. discomfort from intraperitoneal air

SPH – Bedside PD Catheters

- Technique Used
- Patient Numbers
- Advantages/Disadvantages
- **Outcomes**

SPH – Bedside PD Catheter Outcomes

- Inability to place PD catheter (6/217 = 2.8%)
- Perforation of Viscus (1/212 = 0.47%)
- Early infection (< 30 days post insert 0%)
- Nonfunctioning catheter (14/211 6.6%)

SPH – Bedside PD Catheter Outcomes

- Various reports of catheter obstruction 5 – 35 %
- Usually secondary to wrapping of omentum
 - Tenckhoff recommended a caudally placed intraperitoneal catheter segment so the tip enters the pelvis because the omentum does not extend into the pelvis
 - Skin exit site also needs to be directed down
 - Cuff acts as a fulcrum and catheter memory causes cephalad displacement of catheter

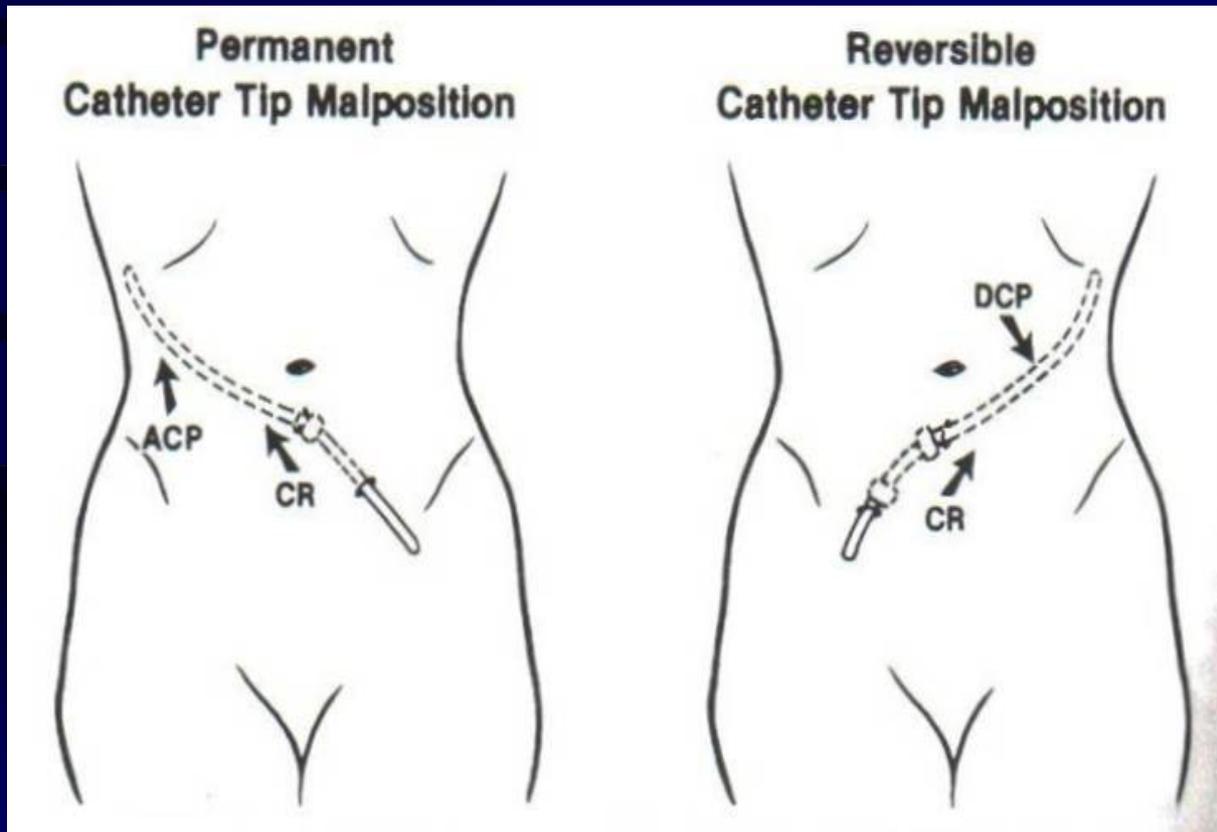
SPH – Bedside PD Catheter Outcomes

- Factors implicated in Obstruction
 - Adhesions
 - Body Habitus
 - Omentum
 - Catheter migration

SPH – Bedside PD Catheter Catheter Migration

- Reversible versus Permanent
 - Left side
 - Thought to be reversible, due to peristalsis of descending colon
 - Right side
 - Peristalsis of ascending colon displaces the catheter further cephalad

SPH – Bedside PD Catheter Catheter Migration

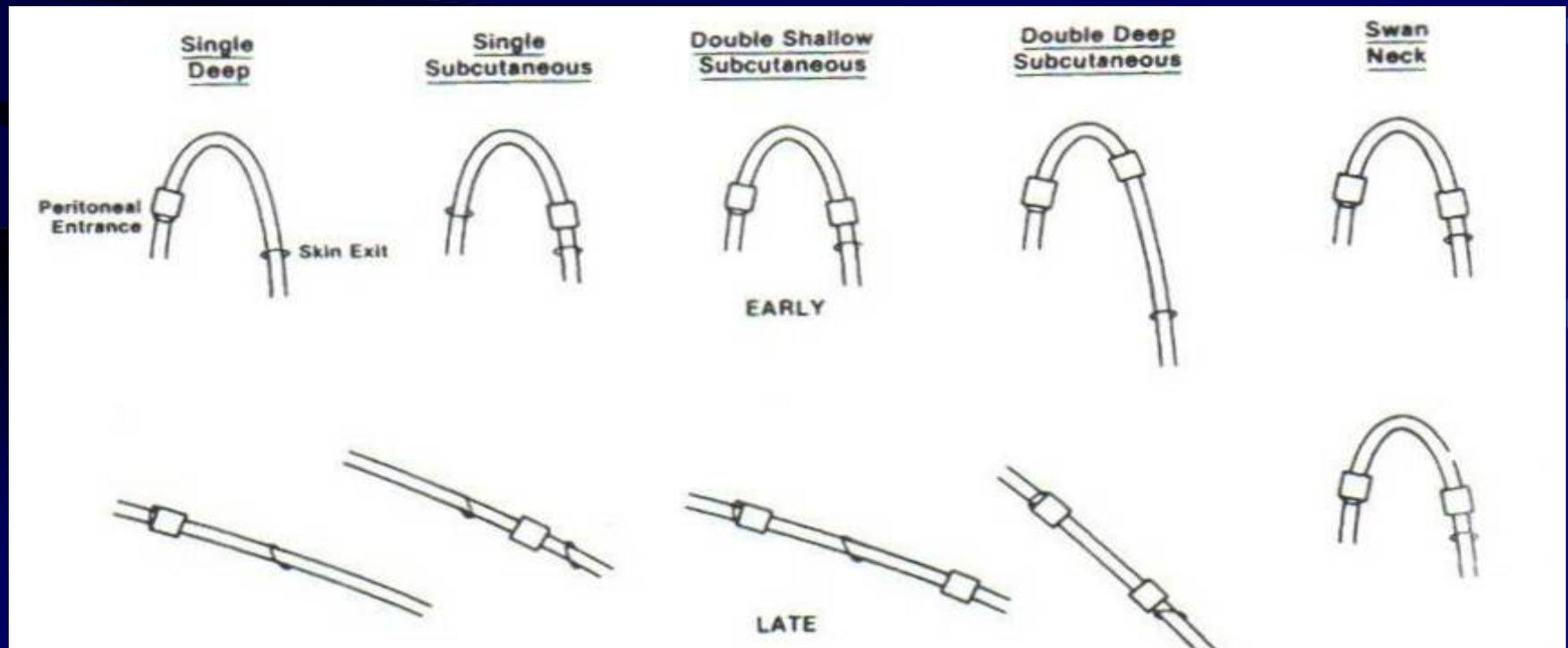


SPH – Bedside PD Catheter Catheter Migration

- Prevention
 - Catheter Design
 - Multiple different designs
 - Cuffs
 - Coiled versus straight
 - Weighted
 - Swan neck versus straight

SPH – Bedside PD Catheter Catheter Migration

- How to avoid?
 - Catheter design



SPH – Bedside PD Catheters Migration Prevention

- Gadallah et al, 2000 Adv in PD
 - Six Year study comparing straight versus swan neck catheters in 2 centers
 - Only examined laparoscopically placed catheters
 - All catheters were coiled and identical other than the swan neck

SPH – Bedside PD Catheters

Migration Prevention

- Swan Neck

- N= 243
- Age 49
- 58 % Caucasian
- 82% Diabetic
- Body weight 81.2kg
- Prior Abd Surgery
46%

- Straight

- N= 219
- Age 46
- 66% Caucasian
- 74 % Diabetic
- Body weight 77.5kg
- Prior Abd Surgery
48%

SPH – Bedside PD Catheters Migration Prevention

- Non functioning catheters
 - Documented x-ray evidence of migration
 - 48 hour trial of laxatives
 - Soap suds enema
 - PO Sorbitol
 - If patency restored these patients were not counted as migration, but if still non-functioning after catharsis, then included

SPH – Bedside PD Catheters

Migration Prevention

- Results
 - Migration rates
 - 2/243 Swan neck = <1%
 - 33/219 Straight = 15%
 - P value <0.002

SPH – Bedside PD Catheters

Pt. #

	Bedside	Surgical	Total	# Pts
2005- Aug	41 (85%)	7	48	46 2,2
2006	50 (89%)	6	56	52 4,2
2007	72 (95%)	4	76	71 1,3 3,2
2008	29 (94%)	2	31	27 4,2

SPH – Bedside PD Catheters

Summary

- Bedside PD catheter insertions are successful
- Result in more timely intervention
- Low complication Rates