St. Paul’s Hospital

Peritoneal Dialysis Catheter
Bedside Insertion

G. Nussbaumer
SPH – Bedside PD Catheters

- Thanks to Dr. Abeed Jamal
- Data obtained from PROMIS Access Module
SPH – Bedside PD Catheters

- Pt. Selection
- Technique Used
- Patient Numbers
- Advantages/Disadvantages
- Outcomes
SPH – Bedside PD Catheters

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• 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
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- Admit over night
- Procedure takes 30 to 45 minutes
SPH – Bedside PD Catheters

• Technique Used
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SPH – Bedside PD Catheters

• Peritoneoscope
• Procedure Room on Renal Ward
SPH – Bedside PD Catheters
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- 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
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- 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 off with 7cc 1000 u/ml heparin
- Midline incision sutured with 2 2-0 silk sutures
SPH – Bedside PD Catheters
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• Technique Used
• **Patient Numbers**
• Advantages/Disadvantages
• Outcomes
## SPH – Bedside PD Catheters

**Pt. #**

<table>
<thead>
<tr>
<th>Year</th>
<th>Bedside</th>
<th>Surgical</th>
<th>Total</th>
<th># Pts</th>
</tr>
</thead>
<tbody>
<tr>
<td>2005-Aug</td>
<td>41 (85%)</td>
<td>7</td>
<td>48</td>
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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

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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
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Summary

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