

Starting a Bedside PD Catheter Insertion Program

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Bedside PD Catheter Insertion Program

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Introduction

- Kamloops serves the Thompson, Cariboo, Shushwap region of Interior Health with a catchment of 250,000 people
- We have 600 CKD patients, 54 in-centre HD patients in Kamloops, 7 community HD patients in William's Lake, 5 home HD patients, and 32 PD patients
- Thus PD, at 33% of our dialysis population is an important component of our program
- We decided last fall to implement a program for bedside PD catheter insertions
- Program was up and running in the end of January 2008

Rationale for Starting Bedside PD Catheter Insertion Program

- Control over the insertion date
 - No need to wait for surgeon and OR time
- No general anesthesia
- Control over the exit site:
 - Direction of exit site - lateral, caudal, not in fat fold or under belt
 - Size of exit site – puncture the size of the exiting catheter with no stitches
- Control of the catheter type
- Minimal pain and discomfort to the patient, immediate ambulation
- Potential for immediate use if necessary (no large surgical incisions)

Initiation of Kamloops Bedside PD Insertion Program

- Skills
- Resources
- Administration

Initiation of Kamloops Bedside PD Insertion Program

- Skill requirements:
 - Nephrologist able to insert the catheters
 - Nurse able to assist in bedside catheter insertion

Initiation of Kamloops Bedside PD Catheter Insertion Program

- Resource requirements:
 - Procedure room
 - Supplies
 - Peritoneal dialysis insertion tray -
 - General supplies: masks, sterile gloves/gowns, needles, syringes, sutures, chlorhexidine, heparin
 - Drugs: xylocaine, midazolam, fentanyl, maxeran, ancef
 - Adult Trocath PD catheter with connecting tube and Cath-Clip catheter holder - \$50/catheter
 - Tenckhoff double cuff PD catheter kit - \$100/kit
 - Rigid introducer – made by our maintenance department
 - IV pole with Y-Type PD administration set, 2 litre drain bag and 2 litre bag of dialysis solution with heparin
 - O2 sat monitor and automatic BP cuff

Initiation of Kamloops Bedside PD Catheter Insertion Program

- Administration approval
 - Used pre-existing procedure room,
 - Supplies purchased from existing funds,
 - Current PD nurse incorporated bedside catheter insertions into her routine workload
- Therefore, administration approval was not requested

Protocol preparation

- Protocols adapted from VGH Bedside Catheter Insertion protocols and RIH ACU for conscious sedation
 - Pre-procedure patient preparation protocol
 - Nursing protocol for
 - Pre-operative preparation of the surgical field,
 - Intra-operative assisting the nephrologist,
 - Conscious sedation
 - Post-operative care and monitoring
 - Post-procedure patient instruction protocol

Bedside PD Catheter Insertion Technique

- Midline incision 2 cm below the umbilicus then blunt dissection to linea alba
- Blind puncture with trochar in rigid catheter through linea alba
- Remove trochar and use rigid catheter to fill abdo with 0.5 -1 litre heparinized dialysate
- Use the Seldinger technique to insert the Tenckhoff catheter:
 - Insert guide wire through the rigid catheter, then remove catheter
 - Insert dilator with peel away sheath over guide wire
 - Remove dilator, insert soft Tenckhoff catheter stiffened by rigid stylet, through the peel away sheath
- Create exit site with one stab of scalpel exact size of catheter
- Tunnel to exit site

First 8 Months

- Relatively cautious patient selection
- Some growing pains
 - 8 catheters inserted with excellent function
 - 3 catheter insertions unsuccessful
 - One catheter inserted between the layers of the linea alba
 - Procedure called off in 2 catheters due to difficulties puncturing the linea alba
- No complications

First 8 Months

- Re-evaluation of resources required:
 - Realization that current nursing resources were actually inadequate
 - Timeliness of PD catheter access now affected by nursing availability rather than surgeon or OR access
 - Planned PD catheter insertions not a problem
 - “Crash on” patients still a problem
 - Not always able to accommodate urgent catheter insertion
 - Even more difficult to find nursing time to train unexpected patients
 - These patients are still ending up on HD with temporary lines

Future Plans

– Additional funding

- Formal RIH PD catheter bedside insertion project proposed and approved June 2008
 - 2 year project with 2 days per week of dedicated nursing time
 - Assist in catheter insertions and initial training
 - Develop policies and procedures based on best practice guidelines
 - Collection and compilation of stats for evaluation

– Explore

- Peritoneoscopic placement
- Fluoroscopic confirmation of positioning

Conclusion

- The implementation of a bedside PD catheter insertion program is:
 - Relatively straight forward
 - Relatively inexpensive
 - Offers a flexible and less invasive option to surgical catheter placement
 - May increase our PD numbers and decrease temporary HD requirements in patients previously awaiting OR time for PD catheter placement

