

Nursing Management of Venous Access Devices:

Tunneled Central Catheters Mimi Bartholomay, RN, MSN, AOCN

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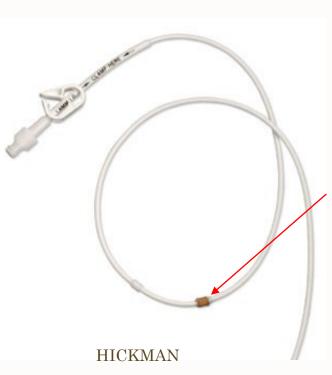




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# Tunneled catheter

- Types: Hickman<sup>®</sup>, Broviac<sup>®</sup>, Groshong<sup>®</sup>, Small bore
- Groshong not normally used in pediatrics
  - Features: Dacron cuff lies under the skin near the exit site. Adhesions form around the cuff to stabilize the catheter as well as provide a mechanical barrier to microorganisms, thereby minimizing the risk of ascending infection.
- Refer to MGH Nursing Policies and Procedures in Ellucid



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Dacron cuff which is placed along the tunnel above the exit site

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### **Tunneled Catheters**

#### **Benefits:**

long-term access

#### **Infusion Guidelines:**

SMALL LUMEN: Designated for TPN or if no TPN anticipated, use for meds and fluid

LARGE LUMEN: blood, high-volume or viscous fluids, meds, and blood sampling

### **Contraindications/Risks**

Infection

Invasive procedure

Thrombosis

## Tunneled Catheters: Flushing

Adults:

- 10-20ml of 0.9% saline following an infusion
- 20-30ml of 0.9% saline following blood draw or transfusion
- flushed at least every 24 hours when in use
- When not in use (e.g. at home):
  - 5 ml (10 units/ml) heparin = 50 units at least 1-2 times a week
- Adolescents:
  - 5ml (10 units/ml) heparin = 50 units (Hickman and Broviac)
  - 10-20ml of 0.9% saline (Groshong)
  - Flushed once a week when not in use

# Tunneled Catheters: Flushing

- Toddlers/Infants:
  - 2ml (10 units/ml) heparin = 20 units
  - Flushed daily when not in use
- Neonates/NICU:
  - 1ml (10 units/ml) heparin = 10 units
  - Flushed after completion of any infusion or blood sampling every 12 hours

# Flushing Groshong<sup>®</sup> Catheters

- Valved catheter
- Heparin not required
- $\circ$  20 ml saline flush after every use
- Flushed with 10 ml saline every seven days, when not in use, as routine flush
- Not generally used in pediatrics



- Negative pressure opens valve inward, permitting blood aspiration.
- Positive pressure opens valve outward, allowing infusion.
- At neutral pressure, valve remains closed, reducing risk of air embolism, blood reflux and clotting.

Three-way valve reduces risk of air embolism, blood reflux and clotting

Tip-first placement allows measuremnt of catheter to size during implantation for more accurate tip placement

Unique design virtually eliminates use of heparin, minimizes nursing time required for maintenance and improves costeffectiveness of therapy

> Silicone material offers superior biocompatability to improve indwelling and catheter time

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All information provided is subject to review and revision. Please continue to refer to MGH Policies and Procedures in Ellucid as your primary resource



- Original power point 2011: Bartholomay, Dreher, Theresa Evans, Susan Finn,
  Deb Guthrie, Hannah Lyons, Janet Mulligan, Carol Tyksienski
- MGH Ellucid-Central Line flushing policy