

Peritoneal Dialysis Catheter Placement: A Surgeon's Approach to a Positive Patient Experience



Peter T. Kennealey, MD, FACS, FICS

Associate Professor of Surgery

Surgical Director, Kidney and Pancreas Transplant Programs

Director, Vascular Access Surgery

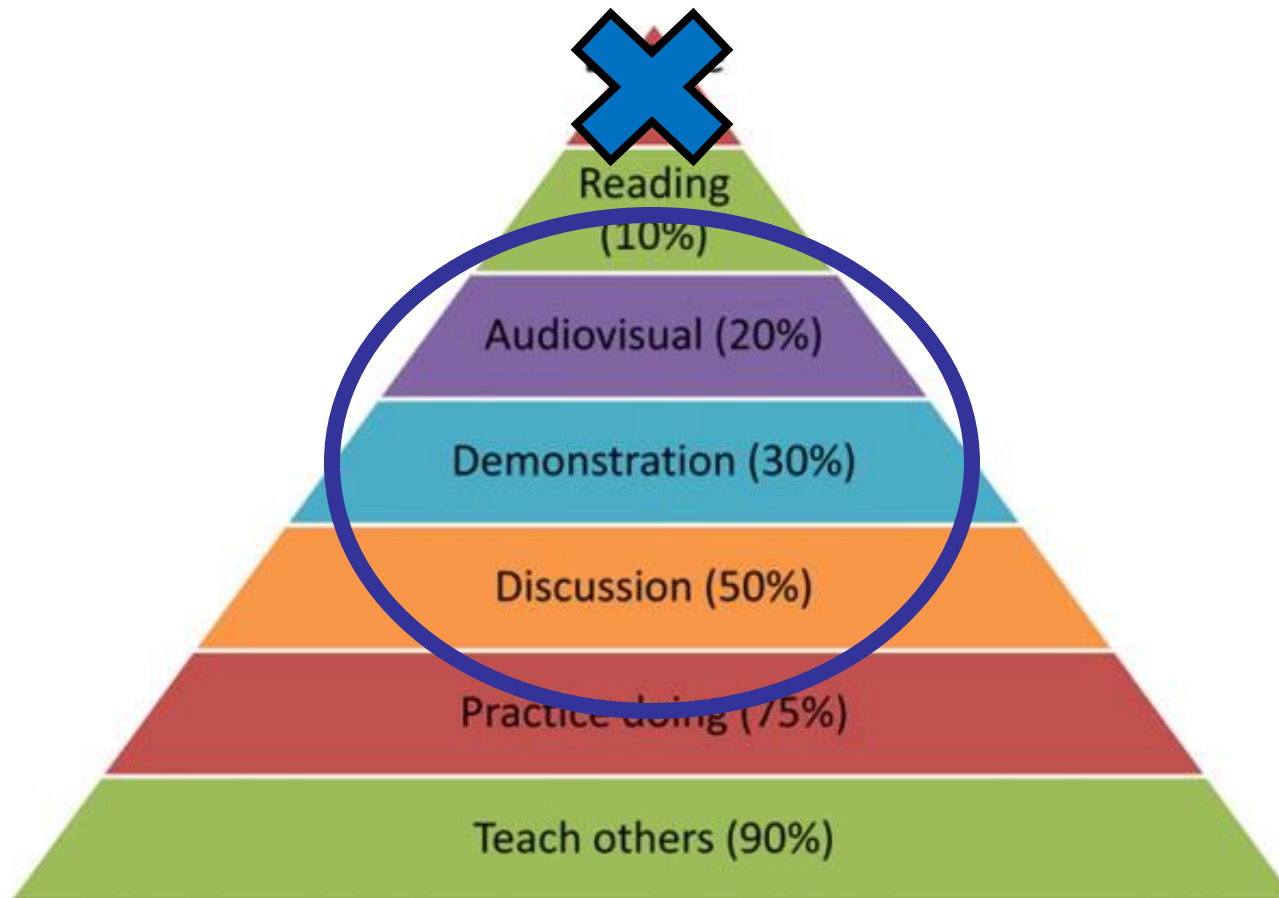
University of Colorado School of Medicine

Disclosure

Medical Board, National Kidney Registry

Advisory Board, National Kidney Foundation

Information Retention



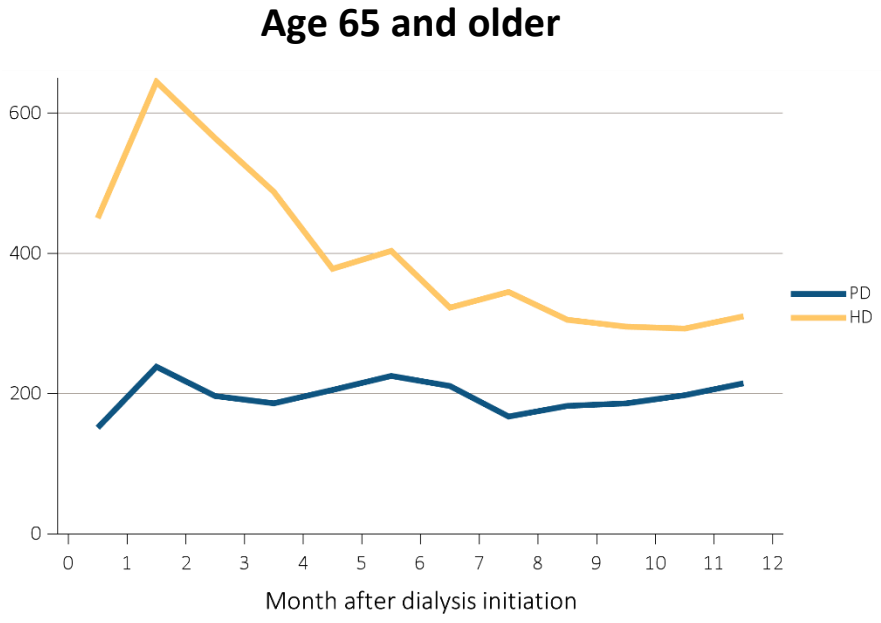
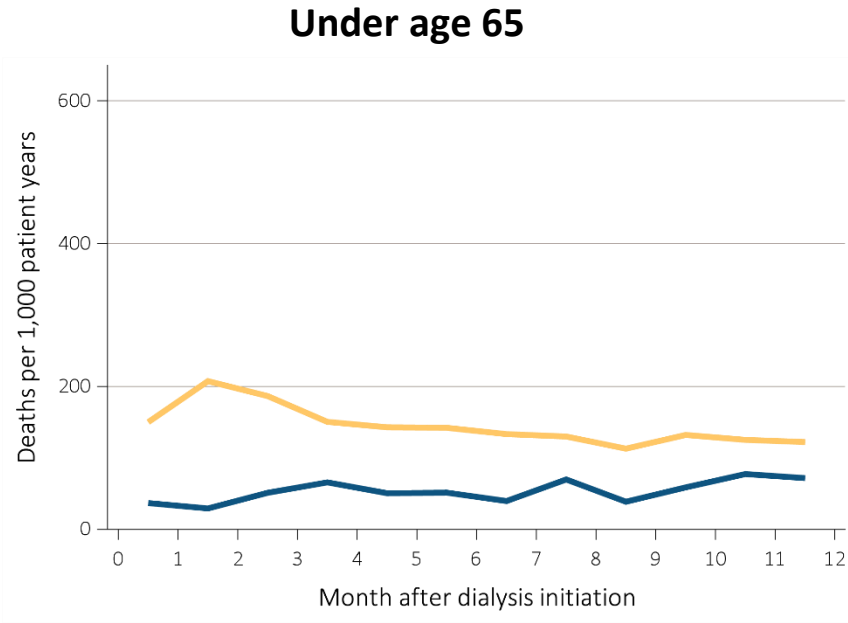
Objectives

- To highlight how appropriate catheter placement facilitates PD longevity
- To understand how to test for, and prevent leaks when placing a PD catheter

Peritoneal Dialysis Catheter Placement: Basic Considerations

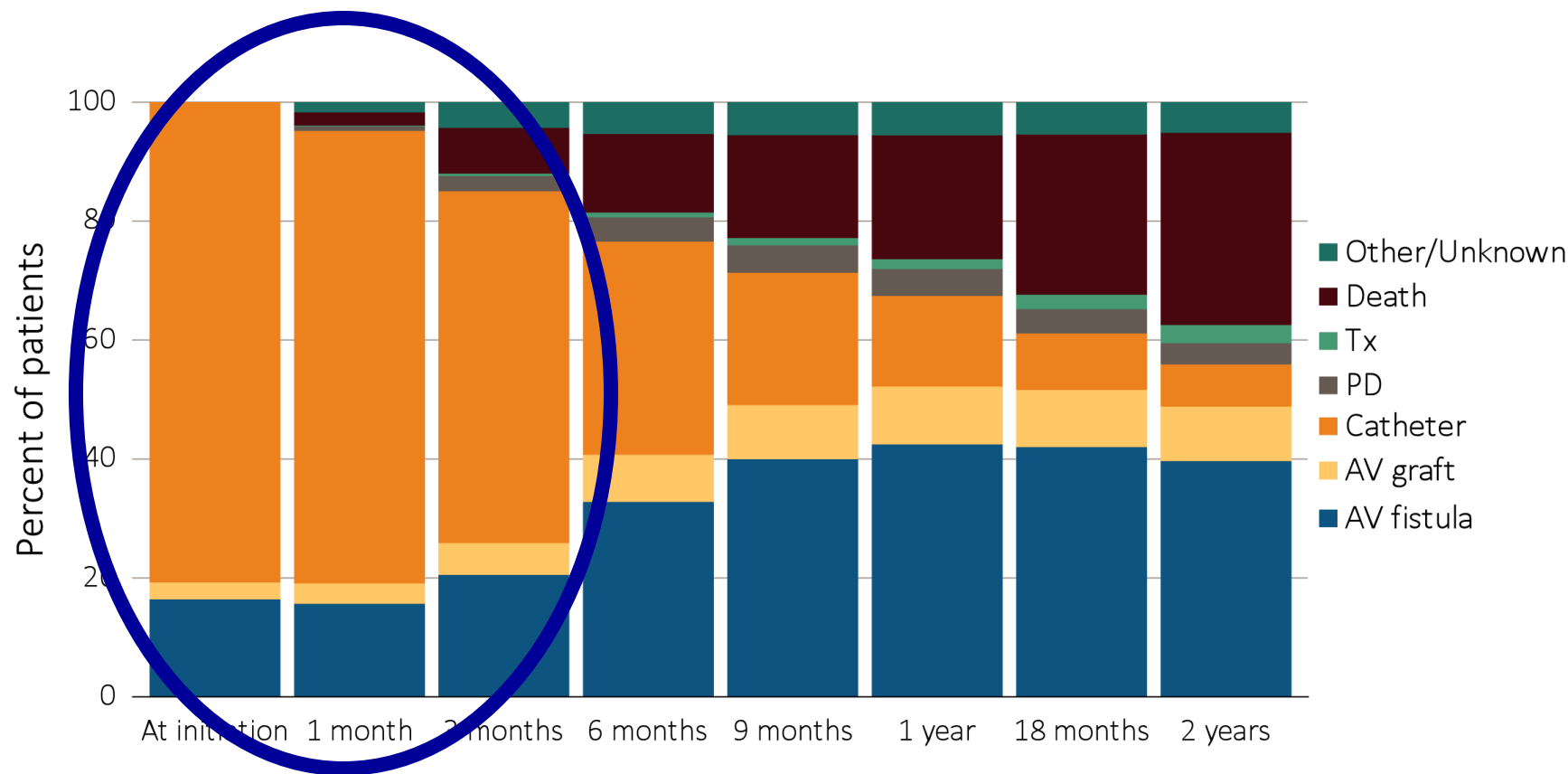
- International Society for Peritoneal Dialysis:
 - One-year actuarial survival should approximate 80%.
- Each PD catheter-related complication:
 - Increases risk of catheter failure more than 3-fold.
- Infection (peritonitis | exit site/tunnel):
 - The leading cause of PD failure (40%).

Adjusted Mortality by Treatment Modality



Dialysis Access: Changes from Initiation – 2 years

2013 - 2016



Peritoneal Dialysis Catheter Insertion Techniques

- Open or percutaneous, blind insertion

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Peritoneal Dialysis Catheter Insertion Techniques

- Open or percutaneous, blind insertion
 - Nothing in medicine/surgery should be done 'blind'.
 - Potential for bowel injury, omental wrapping, poor positioning of the catheter tip etc.
- Laparoscopic assisted insertion
 - Allows for direct visualization of catheter placement/location and significantly reduces procedure associated misadventure.
 - The catheter tip should 'float freely' in the dependent pelvis.
 - Allows for selective omentopexy under direct vision.
 - Precise securing of the deep cuff allows for immediate use of the catheter with no risk of leak – allows for urgent start.
 - No need to wait for the catheter to 'heal' prior to first use.

Infection Prevention

1. Chlorhexidine scrub



2. Surgical prep (ChloroPrep®)

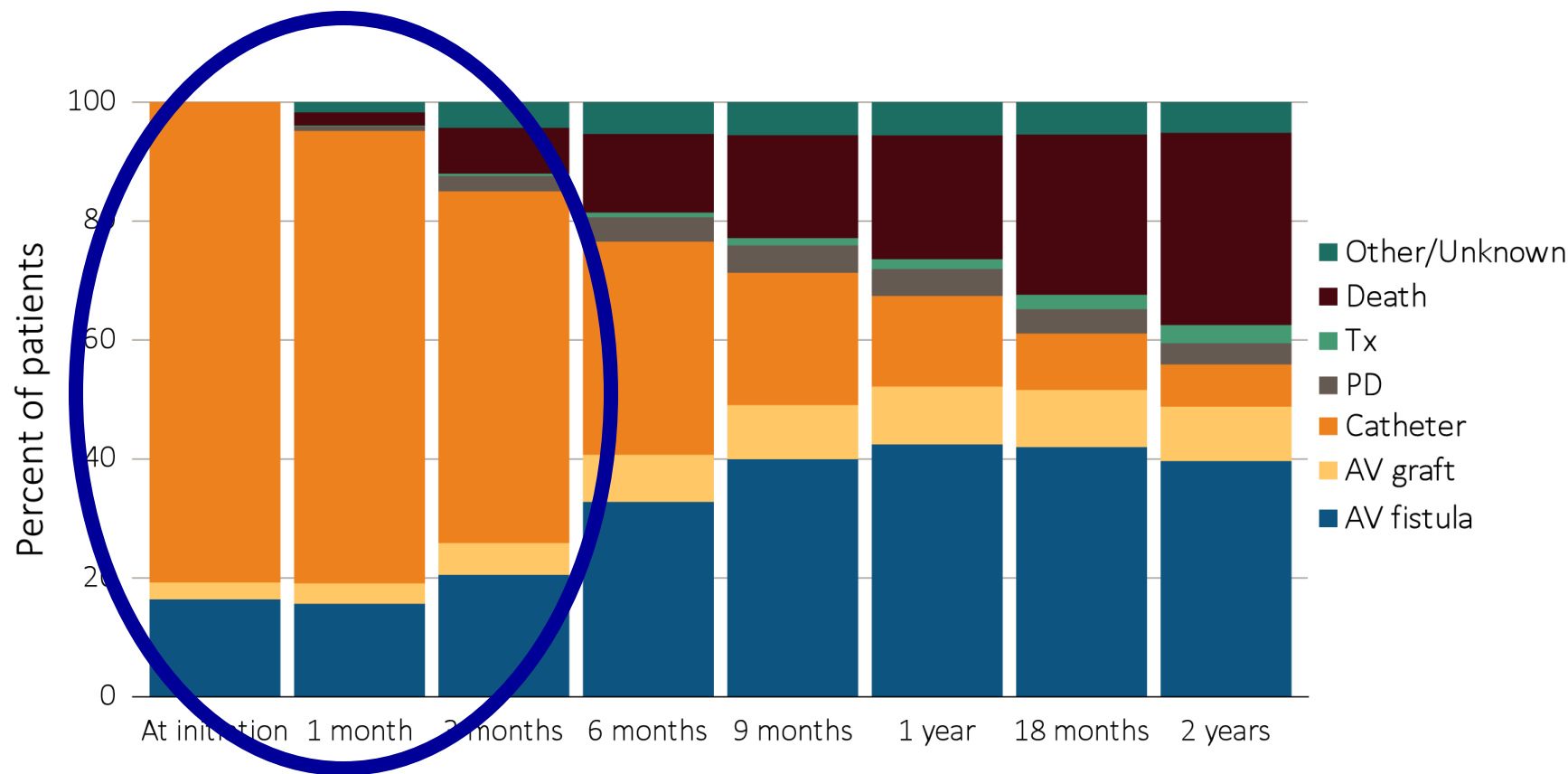


3. Barrier drape

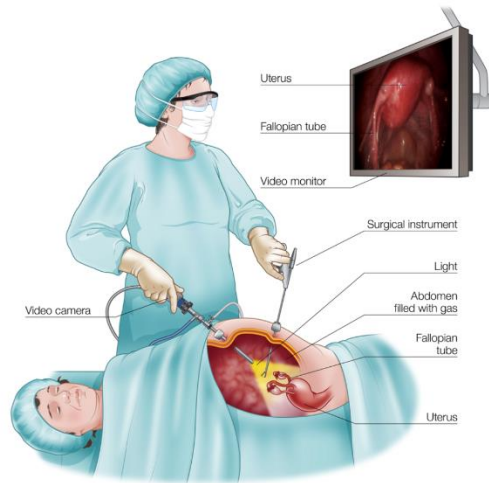


Dialysis Access Changes from Initiation – 2 years

2013 - 2016



Pelvic Anatomy and Catheter Placement



Uterus

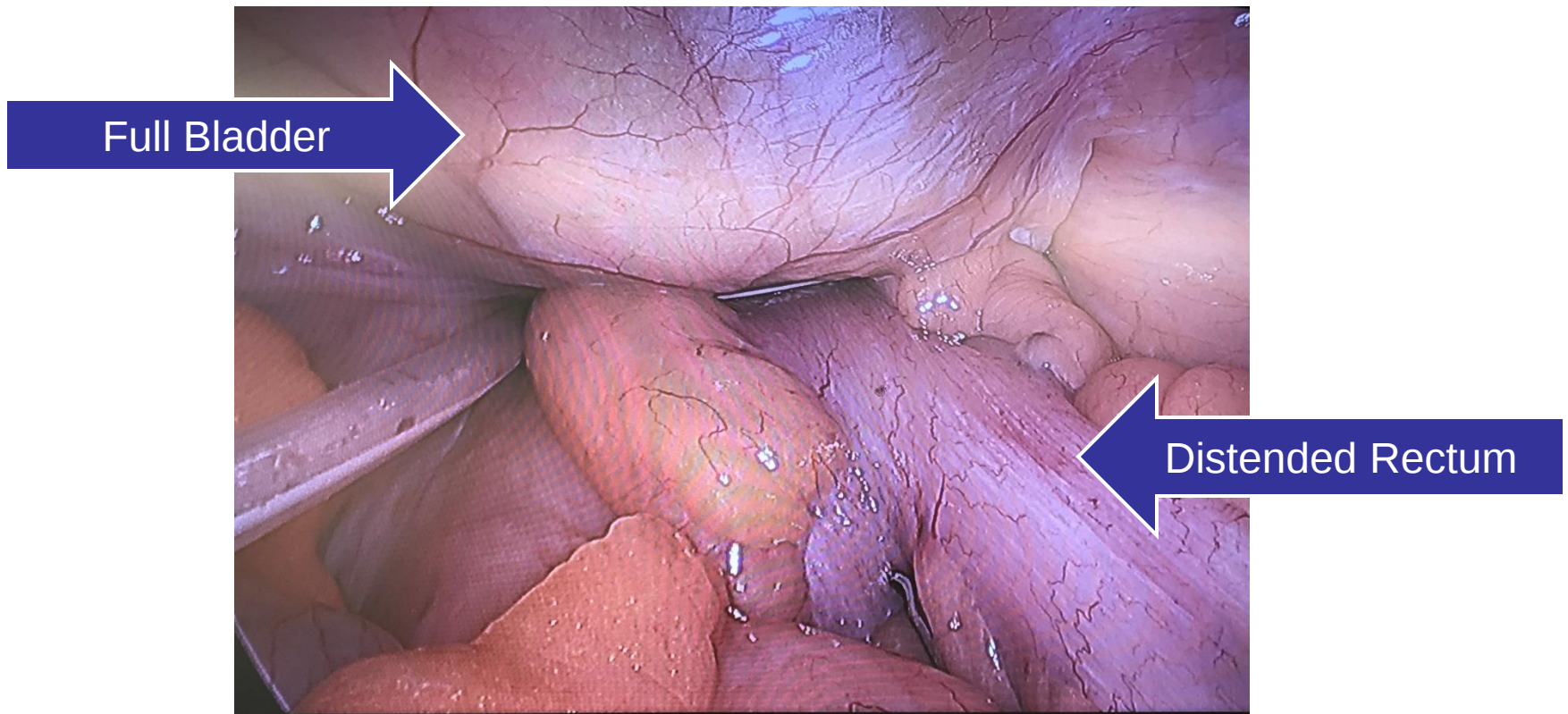


Bladder

Collapsed Rectum

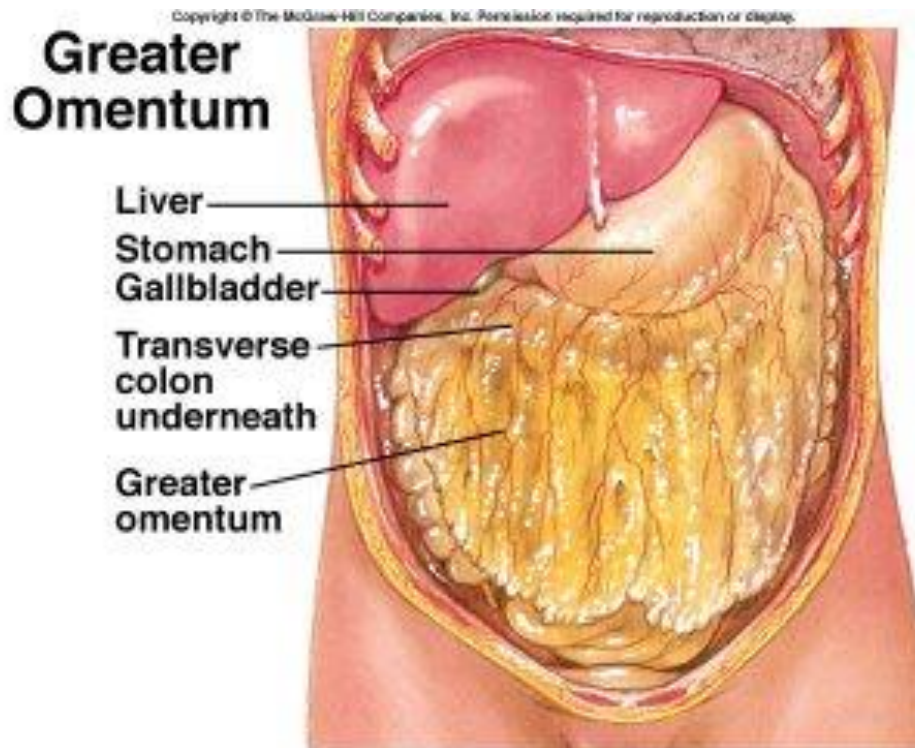
Anatomy and Catheter Placement : Ways to improve outcomes

- Reinforce the importance of emptying the urinary bladder
- Perioperative stool softeners



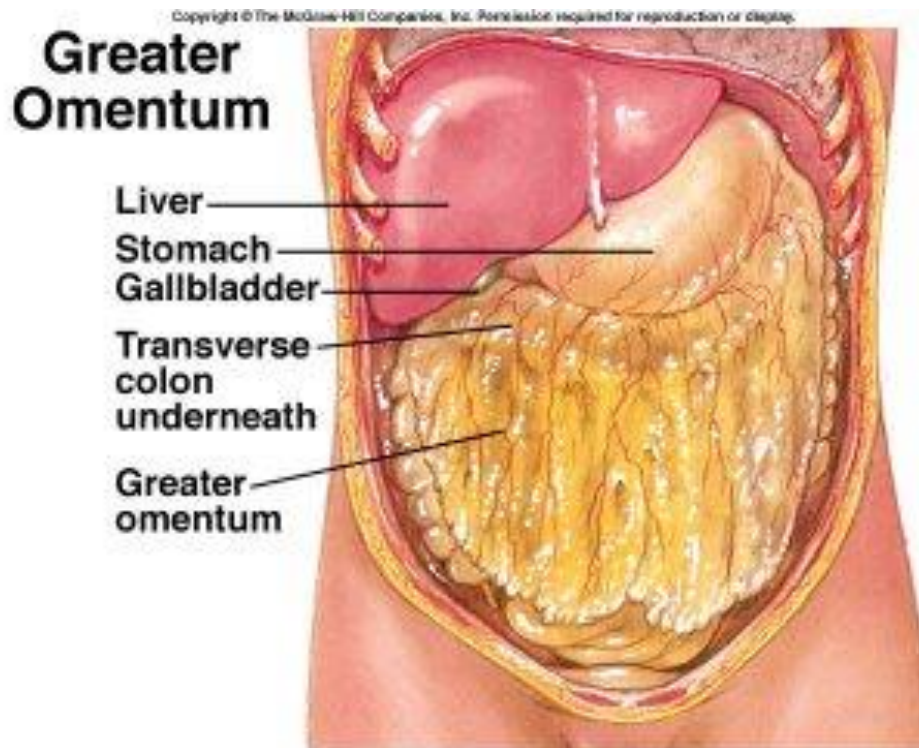
Omentopexy

Omentopexy – securing the omentum to the anterior abdominal wall – this keeps the omentum out of the pelvis.

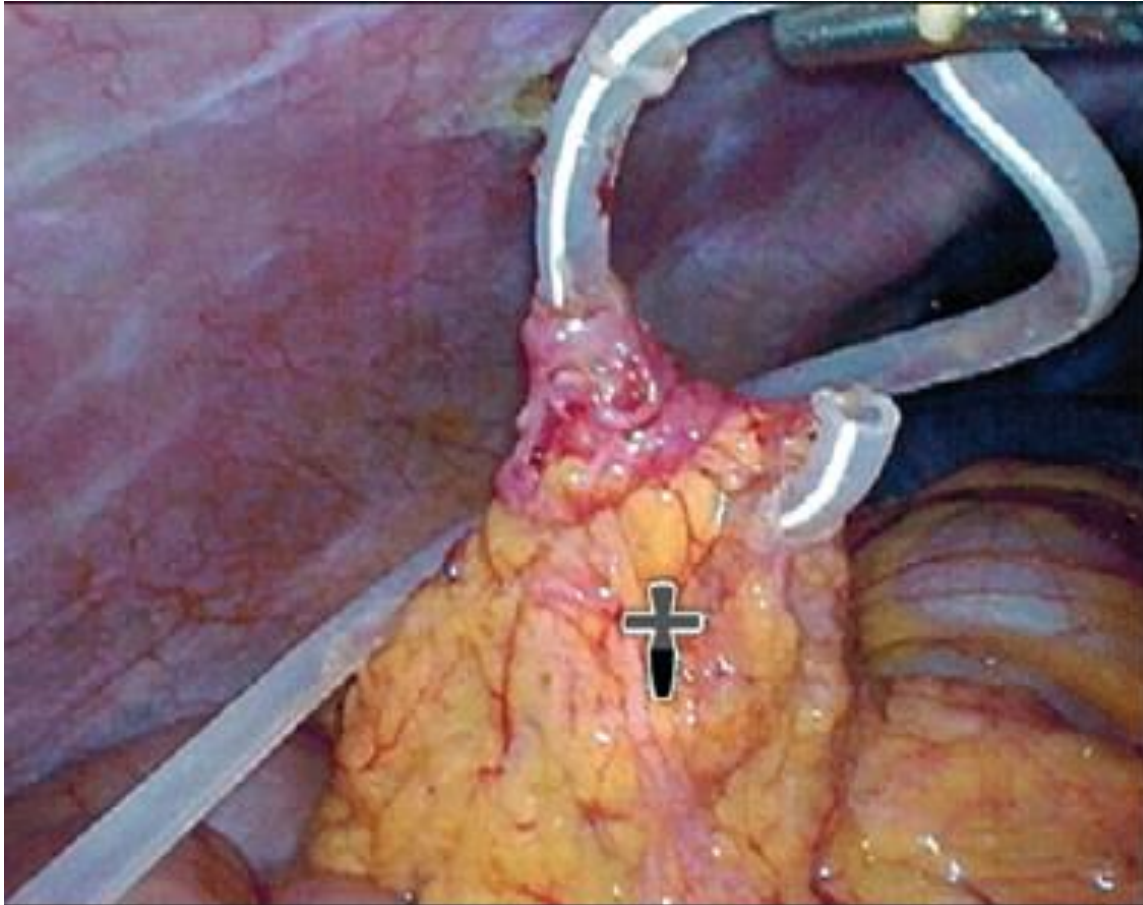


Omentopexy

Omentopexy – securing the omentum to the anterior abdominal wall – this keeps the omentum out of the pelvis.



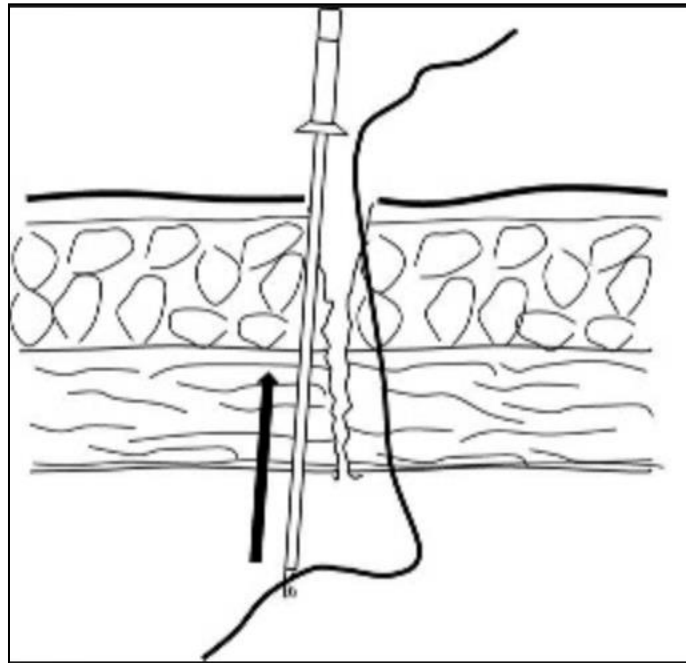
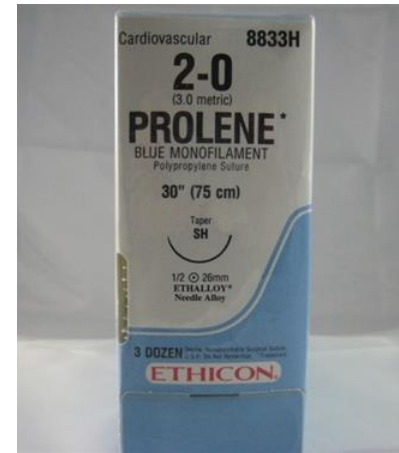
Omentopexy: Why it's Important for Patients on PD



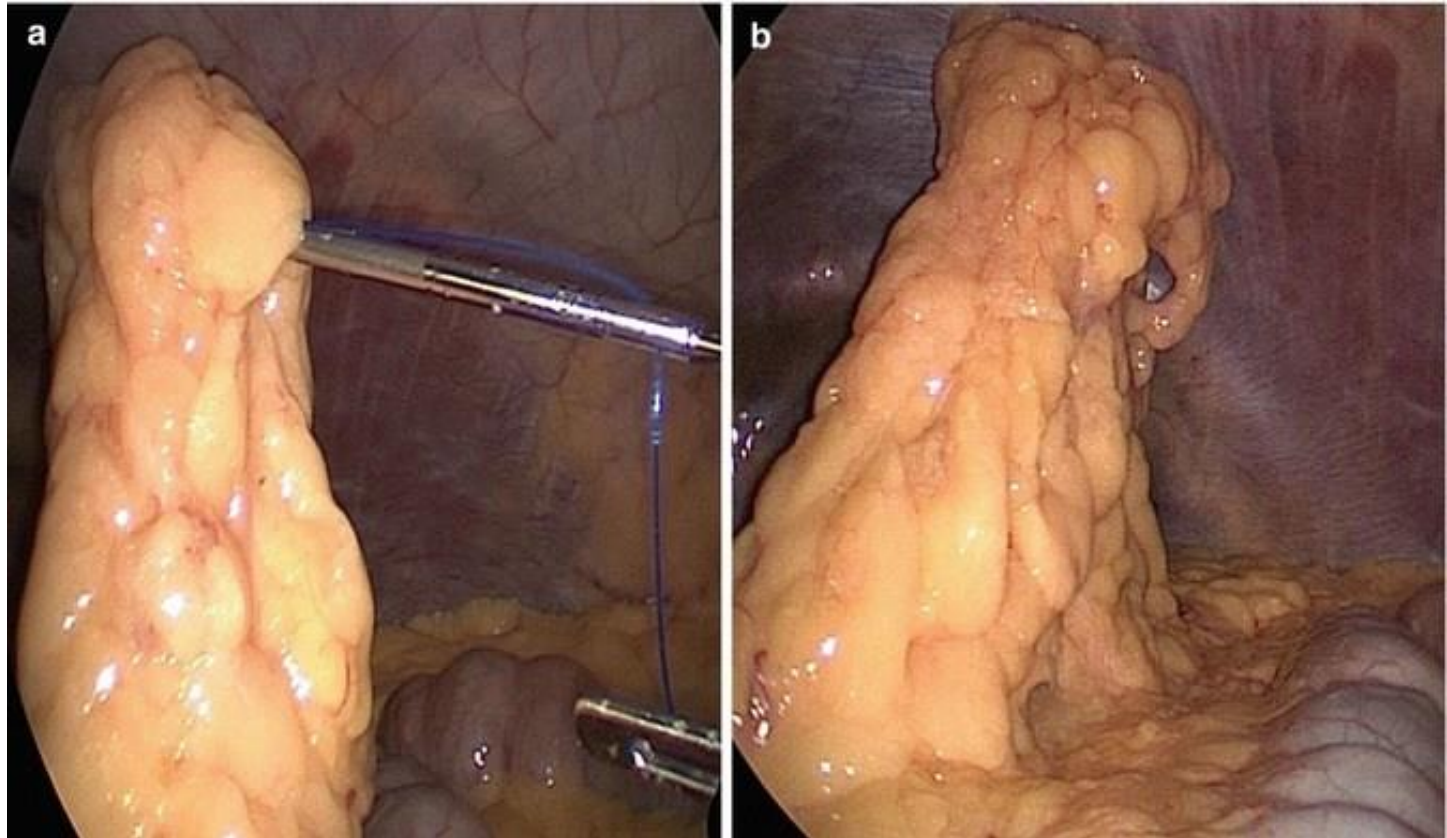
Gifford A, et.al. Int J Acad Med 2016;2:262-5

Omentopexy: Tools

Carter Thomason CloseSure System



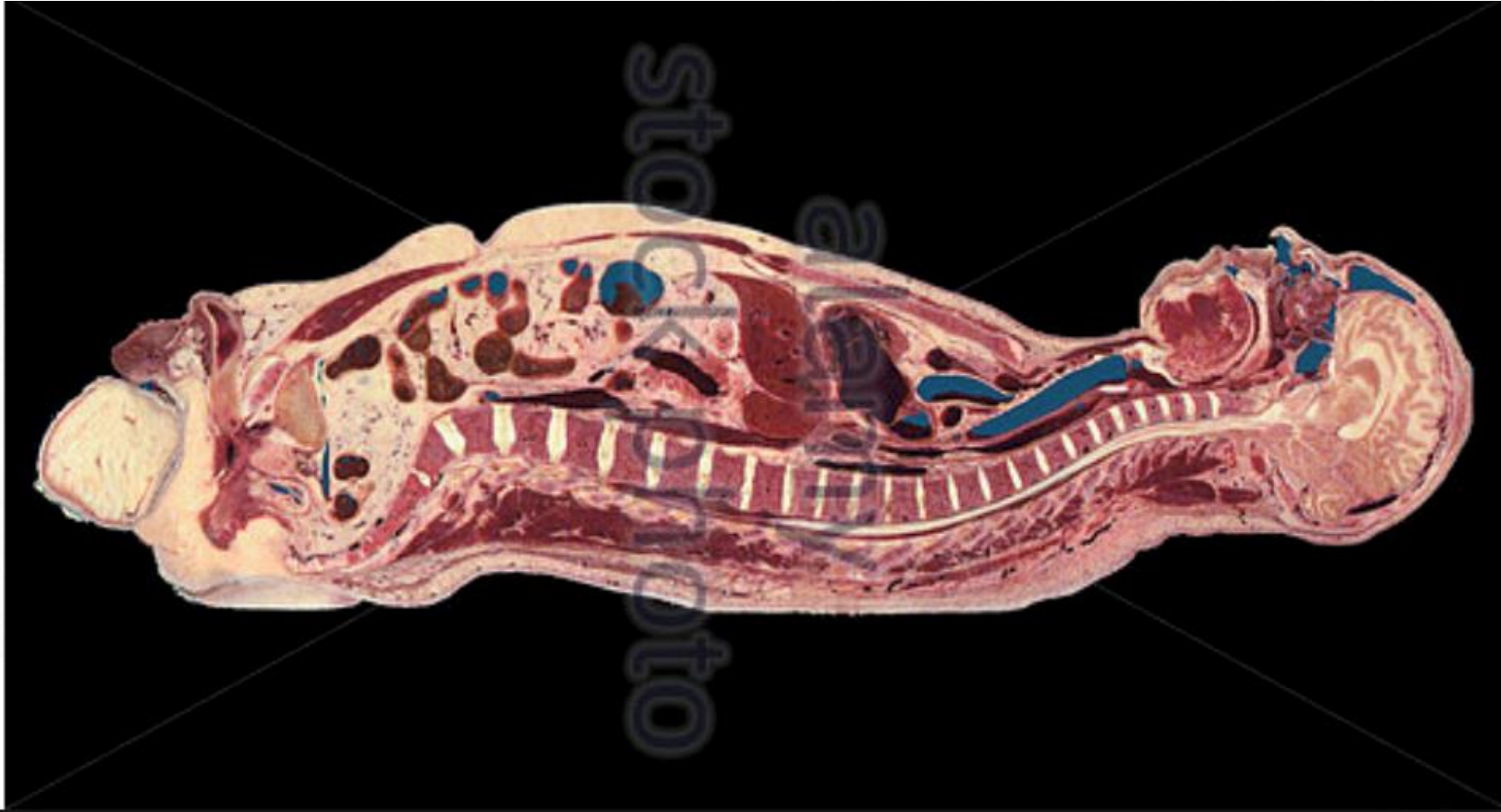
Omentopexy: Technique



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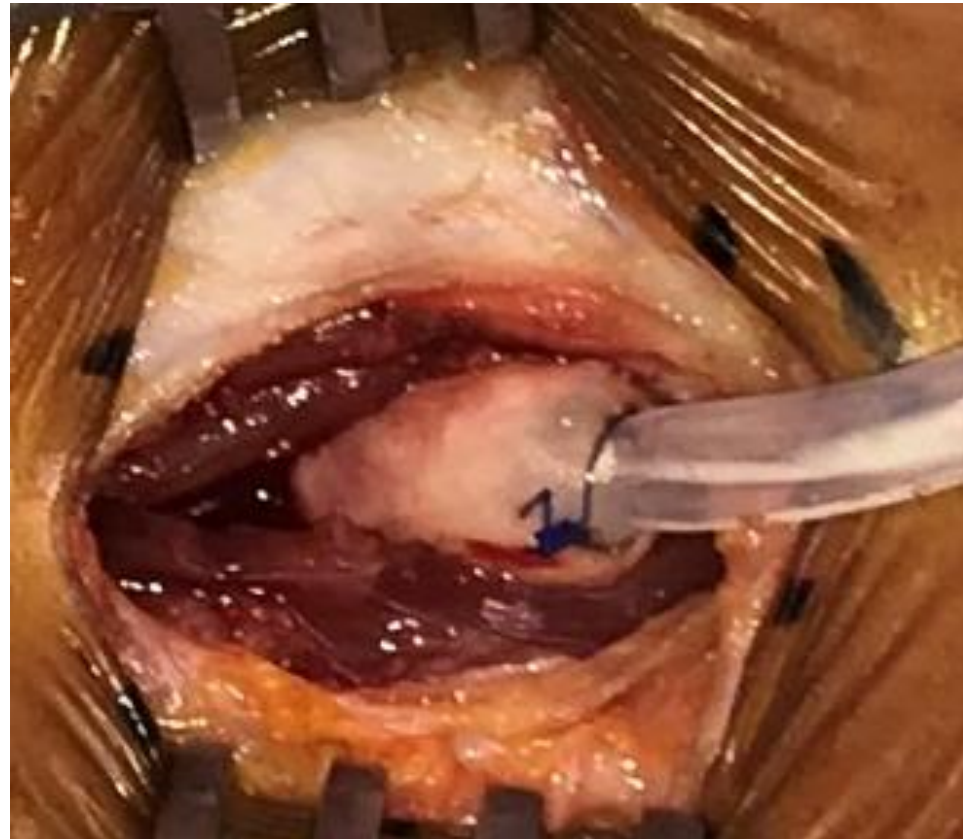


Catheter Placement: Cuff Location Diagram (sagittal view)

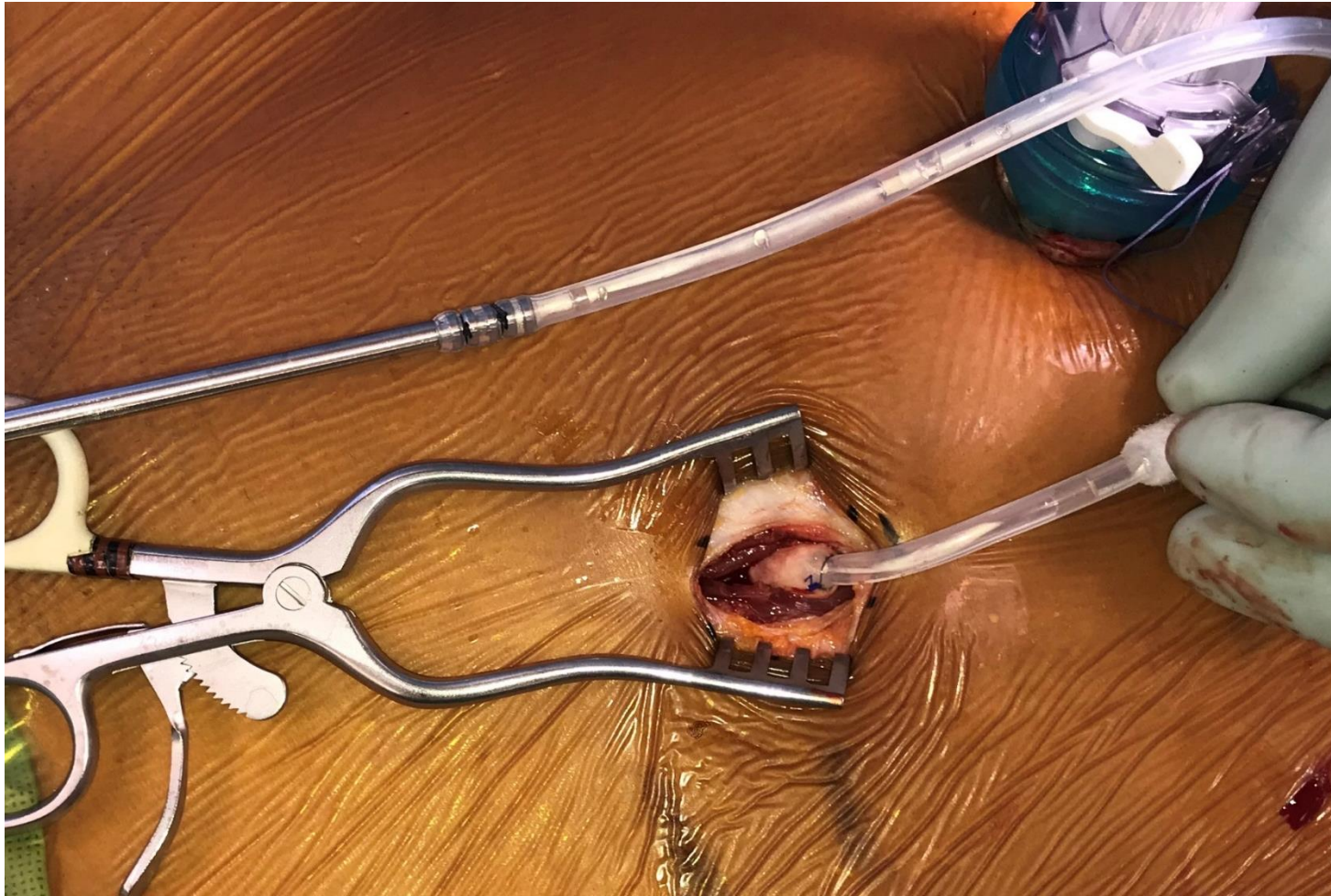


Catheter Placement: Deep Cuff | Urgent Start

- Peritoneum completely surrounds the cuff.
- 'Tire Leak Test' at 15 mm HG.
- If there is no leakage of air under pressure, then PD fluid won't leak.



Catheter Placement: Deep Cuff | Urgent Start



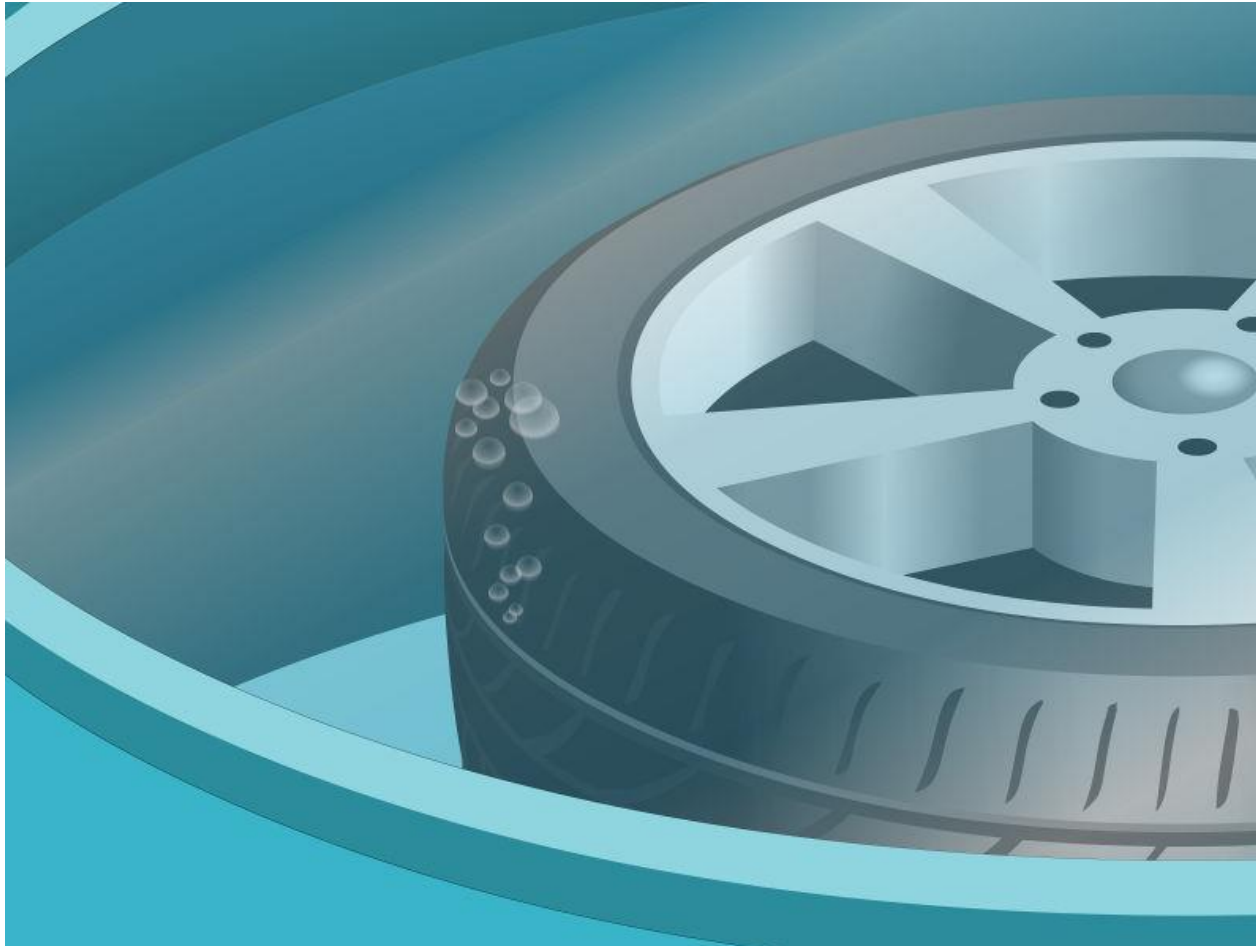
Catheter Placement: Deep Cuff | Urgent Start

Tire Leak Test: Simple and effective



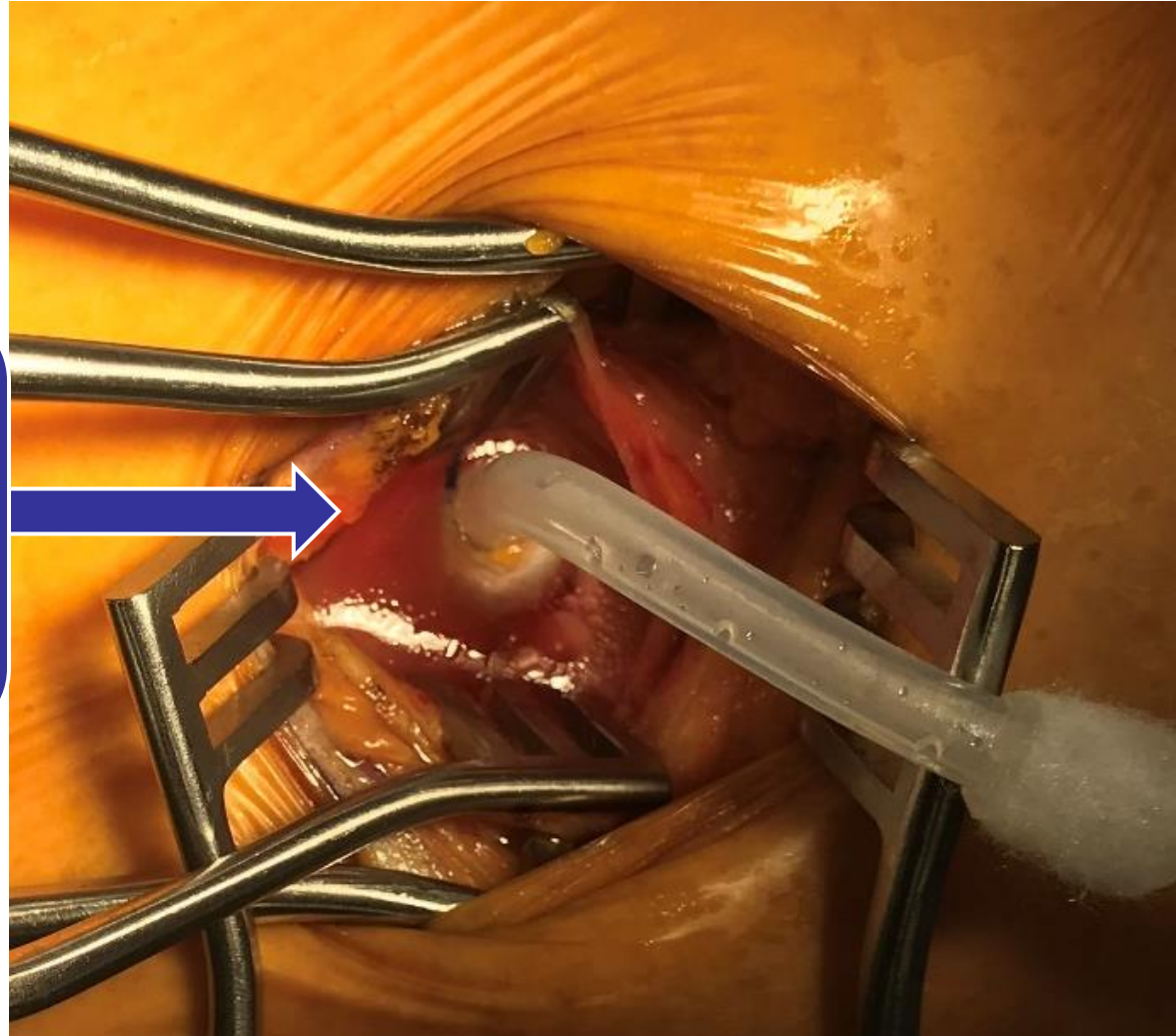
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Tire Leak Test: Simple and effective

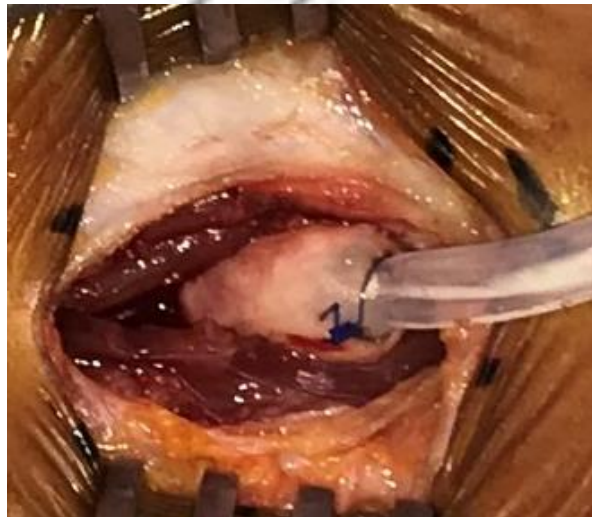
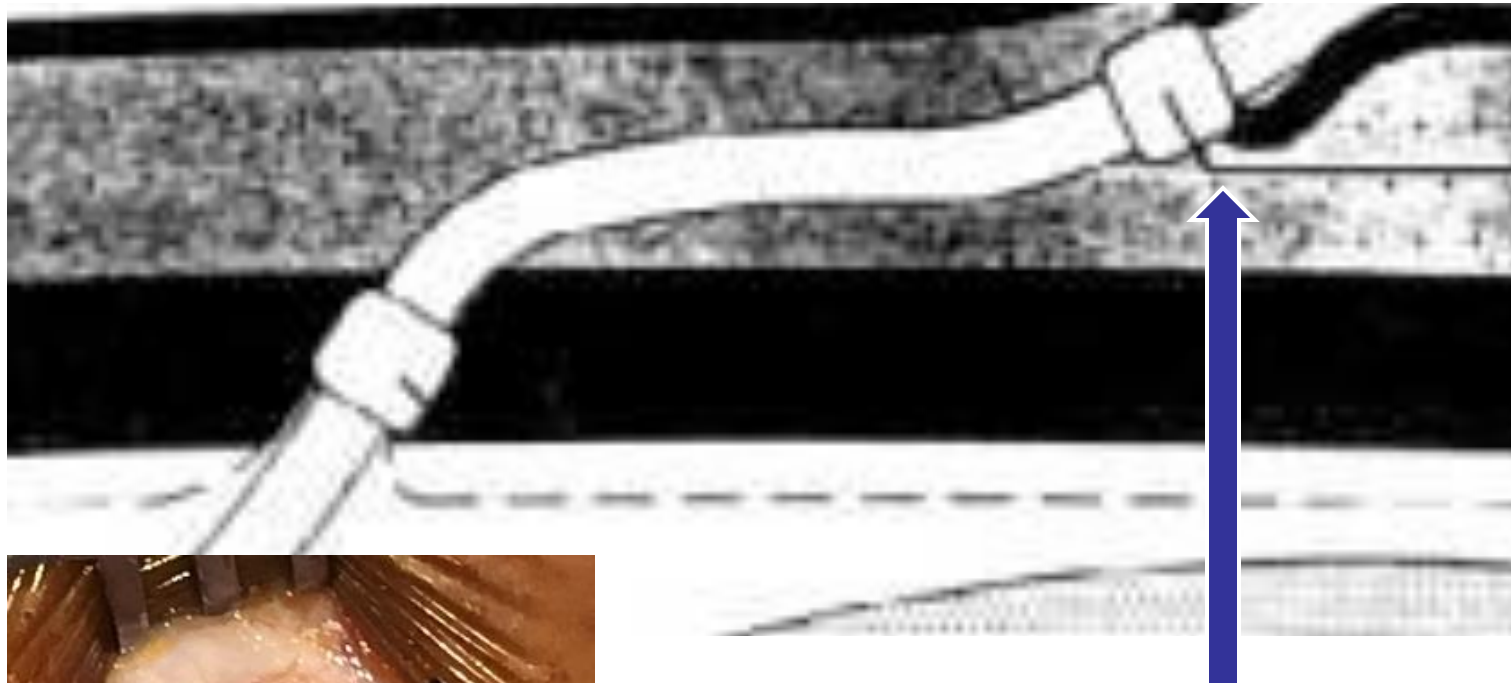


Tire Leak Test : Peritoneal Dialysis Catheter Insertion

- 1) Saline added
- 2) Pneumoperitoneum
- 3) No bubbles – no leak!



Catheter Placement: Cuff Location Diagram (sagittal view)



Exit site is based on
surface anatomy

Urgent (Semi-urgent) Start: Peritoneal Dialysis

Considerations and Benefits:

- Appropriate medical, surgical and psychosocial candidate for peritoneal dialysis.
- Appropriate Pre-ESRD education, establishes realistic expectations for the patient and their family.
- Catheter can be used immediately, regardless of body habitus.
- Can significantly reduce the need for Central Venous Catheters (and associated morbidities).

Summary and Conclusions

- Minimizing procedure related morbidity in peritoneal dialysis catheter placement is paramount to a patient's success with this modality.
- Urgent / Semi-urgent peritoneal dialysis catheter placement continues to be under-utilized in the United States.

Thank you!

Time for Discussion and Questions