

**Bags, Tubes and Diversions:  
Procedure Care for Cancer Patients**

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Which type of urologic cancer could predispose a patient to some alteration in normal voiding?

- Penile?
- Prostate?
- Kidney?
- Bladder?
- Ureters?

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**Penile Cancer**

- Rare in the US
- Mean age is 58
- Procedures
  - Surgery
  - Radiation
  - Chemotherapy

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### Prostate Cancer

- Most frequently diagnosed non-cutaneous cancer
- Rare under 40, increases after 65
- Procedures
  - Surgery
  - Radiation
  - Cryotherapy
  - Hormone therapy
  - Chemotherapy

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### Kidney Cancer

- 3<sup>rd</sup> most common urologic cancer
- Disease of the old – 60's and 70's
- Males > Females
- Procedures
  - Nephrectomy, Partial Nephrectomy
  - Cytoreductive Procedures Systemic therapy
    - Urinary fistula, ureteral stent, indwelling catheter

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### Bladder Cancer

- 2<sup>nd</sup> most common urologic cancer
- Incidence increases with age, 2/3 are 65+
- Males > Females
- Procedures
  - Intravesical Therapy
  - Radiation Therapy
  - TURBT, Urinary Diversions

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### Ureteral Cancer

- Upper Tract Urothelial Cancer
- Rare- associated with bladder cancer
- Mean age is 73
- Procedures
  - Surgery
  - Radiation
  - Chemotherapy

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### Indwelling Catheters

- Transurethral
  
- Suprapubic

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### Suprapubic Tubes

- **Definition:** Insertion of an indwelling catheter through the abdominal wall into the bladder. Called a cystostomy
- **Indications:**
  - Urinary retention, post operative management
  - Complications of cancer diagnosis or side effect of treatment.
  - Penile Cancer: post penectomy
  - Prostate Cancer: incontinence, effects of XRT "radiation cystitis"
  - Bladder Cancer: temporary or permanent, gross hematuria, metastatic disease
  - Kidney Cancer:

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### Suprapubic Tubes

**Advantages**

- Less urethral pain, urethral erosion
- Less risk of fecal contamination
- Improved sexual freedom
- Improved "personal" freedom

**Disadvantages**

- Invasiveness of procedure
- Urethral sphincter must still function.
- Risk of bowel injury with initial placement
- May cannulate the prostate
- Must re-insert the new catheter quickly

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### Suprapubic Tubes

• **Contraindications:**

- Uncontrolled detrusor overactivity ( spasms)
- Small bladder capacity
- Upper tract deterioration related to ureteral colic
- Poor hand dexterity

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### Suprapubic Tubes

• **Complications:**

- Increased mortality and morbidity
- Infectious complications
- Catheter blockage
- Leaking around the catheter
- Inadvertent dislodgement
- Bladder stones
- Squamous cell cancer
- Pain

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## Evidence Based Management

- Insufficient evidence to support best catheter type.
- Insufficient evidence to support/refute catheter irrigation
- Use of catheter valves.
  - Inadequate evidence about CAUTI
  - ( but high patient preference and satisfaction)
- Current guidelines do not recommend fixed schedule catheter changes.(based on opinion not evidence research)

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## Ureteral Stents

- **Definition:** A thin catheter or tube placed into the ureter to maintain ureteral patency or relieve an obstruction
  - Placed under anesthesia
    - Retrograde from bladder to kidney
    - Percutaneous from skin to kidney
- **Indications:**
  - Intrinsic obstruction: stones, tumors, clots strictures
  - Extrinsic obstruction: malignancies from outside the ureter compressing the ureter, radiation damage causing scarring of the tissue around the ureter
  - Post operative stent placement- facilitate healing after ureter reconstruction
  - Cancers: which ones? Penile, Prostate, Kidney, Bladder,Ureter

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## Ureteral Stents

- **Complications:** seen in 85-90% of patients with stents
  - Discomfort,irritative voiding symptoms 78%  
frequency, urgency, nocturia, dysuria
  - Flank pain, suprapubic pain 80%
    - » Due to reflux of urine up the stent during voiding
    - » Due to movement of stent in the kidney
    - » Due
  - Sexual Dysfunction 32-86%, Females > Males
  - Hematuria
  - Stent related UTI's 20- 30%
  - Fistula formation
  - Stent encrustation
    - » At 6 weeks - 9% will be encrusted
    - » At 12 weeks 76% will be encrusted
  - Stent failure
  - Stent migration

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### Evidence Based Management

- Stent related symptoms are not related to size or material.
- NSAIDS and narcotics alleviate stent pain
- Urinary symptoms not improved with NSAIDS or narcotics but are improved with alpha blockers( tamsulosin,alfuzosin)
- Alfuzosin reduces pain during sexual activity and improves overall sexual satisfaction.

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### Percutaneous Nephrostomy Tubes

- **Definition:** A drainage tube that is placed through the skin directly into the kidney allowing external emptying of the kidney, bypassing the ureter and bladder.
- **Indications:**
  - Intrinsic obstruction: stones, tumors, clots strictures, UPJ obstruction
  - Extrinsic obstruction: malignancies from outside the ureter compressing the ureter, radiation damage causing scarring of the tissue around the ureter
  - Renal Abscess, Renal Hematoma, Vascular anomalies
  - Post operative stent placement- facilitate healing after kidney/ureter reconstruction
  - Administer medications directly into the kidney
  - Cancers: which ones? Penile, Prostate, Kidney, Bladder, Ureter

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### Percutaneous Nephrostomy Tubes

- **Complications:** are seen in only 8-10%
  - Encrustations
  - Infections, Sepsis (<2%)
  - Hematuria
    - Major hemorrhage with potential for transfusion 1-3%
      - » Due to injury of segmental arteries in kidney
  - Pulmonary injury during placement of tube
    - pneumothorax
  - Surrounding organ damage during placement

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### Evidence Based Management

- NSAIDS and narcotics alleviate nephrostomy tube pain
- Urinary symptoms not improved with NSAIDS or narcotics but are improved with alpha blockers(tamsulosin, alfuzosin)
- Long term suppressive antibiotic use is not recommended in most patients

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### Surgical Urinary Diversions

- Ileal Conduit
  - Definition: A urostomy is an incontinent urinary diversion in which the bladder has been removed and a section of the ileum is used to transport the urine out of the body. The 2 ureters are re-attached into the segmented section of the intestine. The urine drains into an external urostomy pouch.
  - Causes/Risk Factors
    - Male vs Female
    - Use of tobacco
    - Chemical Agents
    - Other
  - Indications
    - Invasion of lamina propria and deep muscle
    - Unremitting bleeding
    - Persistent pain, small bladder capacity
      - TNM system
        - » Tumor size
        - » Nodes involved
        - » Metastatic sites

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### Surgical Urinary Diversions

- Complications:
  - Stoma problems
  - Peristomal skin problems
  - Hernias
  - Urinary Tract Infections
- Procedures
  - Caring for the stoma and changing the appliance
  - Obtaining a urine sample
  - Skin care
  - Adapting to new body image
- Products
  - 1 piece urostomy appliance // 2 piece urostomy appliance
  - Skin barrier rings
  - Ostomy belt
  - Night drainage collection bags

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**Surgical Urinary Diversions**

- Continent Cutaneous Urinary Diversions
  - Definition:
    - Anatomy
    - Construction
    - Stoma placement
  - Indications:
  - Types
    - Indiana Pouch
    - Koch Pouch

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**Surgical Urinary Diversions**

- Pouch Characteristics
  - Size
  - Continence
  - Low infection
  - Ease of care
- Complications
  - Procedures:
    - How to care for the pouch
    - How to drain
    - Pouch Irrigation
    - UTI Prevention
    - Skin Care

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**Surgical Urinary Diversions**

- Procedures:
  - How to care for the pouch
  - How to drain
  - Pouch Irrigation
  - UTI Prevention
  - Skin Care

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**Surgical Urinary Diversions**

- Neobladder Urinary Diversions
  - Definition:
    - Anatomy
    - Construction
    - Voiding Procedure
  - Types:
    - Hautmann, Studer, Ileal neobladder
  - Indications:

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**Surgical Urinary Diversions**

- Pouch Characteristics
  - Size
  - Continence
  - Low infection
  - Ease of care
- Complications:
  - Urinary incontinence
  - Small bladder incontinence
  - Urethral scarring
  - Cancer recurrence

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