EVIDENCE- BASED PRACTICE: OSTOMY CARE (UROLOGICAL DISORDERS)

Madice Merheb, MSN, ACNS, RN
Objectives

At the end of this session, the audience will be able to:

• Identify the indications for urinary diversions and Ostomy formation

• Describe the types of complications and the related nursing management.

• Discuss the nurse’s role in preparing the patient with a urinary diversion for self-care management in the home setting.
Outline

• Definitions
• Indications
• Types of urinary diversion
• Care of patients with urinary diversions
  • Preoperative considerations
  • Postoperative considerations
  • Follow up and home care
Definitions

• Urinary diversion: Surgically created outlet designed to permit urine excretion when the urinary system is damaged or can no longer function properly. Permanent

• Ostomy refers to a surgical procedure resulting in the external diversion of urine through an abdominal stoma. These procedures are performed on all age groups from the neonate to the elderly.
Indications

Indications for urinary diversion include:

- Bladder cancer,
- Hostile neurogenic bladder (trauma, infection, neurological disorders)
- Refractory interstitial or radiation cystitis,
- Congenital anomalies of the lower urinary tract.

- Bladder cancer is the most common, invasive tumors require radical cystectomy and urinary diversion.
Types of urinary diversions

• Continent—where urine is retained within the body until released by the patient.
• a urine storage system formed through use of the bowel, usually at the terminal ileum or ascending colon.
• No appliance
• Kock pouch, Indiana pouch, Florida pouch, Miami and mainz pouches
Types of urinary diversions

- Neobladder also known as 'continent orthotopic urinary reconstruction',
- Orthotopic “in the same place”
- Neobladder “new bladder”
- Younger patients who wish to avoid a stoma on the abdomen and/or wearing an Ostomy bag.
- Daytime continence, although nocturnal incontinence may present a problem in up to 25%
**Kock Pouch.** Pouch, valves and outlet are made from terminal ileum.

**Mitrofanoff Procedure (and variation).** Pouch is made from the bladder (large or small intestines or a combination of them). Outlet is made from the appendix (fallopian tube or ureter segment).

**Indiana Pouch.** Pouch is made from large intestine (ascending colon). Natural ileocecal valve is used for valve outlet made from terminal ileum.

**Ileal Neobladder.** Pouch is made from small intestine (ileum) and the outlet is the urethra (no stoma).
Types of urinary diversions

- Noncontinent—Bricker's loop, ileal loop, or ileal conduit
- are accomplished by ureteral anastomosis to the ileum or colon, with the stoma being formed by the bowel segment sutured to the outer skin.
- require an appliance to be used at all times to contain the effluent, a combination of urine and mucous.
- Cutaneous ureterostomy: rarely performed in adults, pediatric temporary
CARE OF PATIENT WITH URINARY DIVERSIONS
PREOPERATIVE CONSIDERATIONS
Assessment and teaching

• **Preoperative teaching:**
  - Assess the patient and family’s understanding of pending diagnostic testing, bladder cancer, and the proposed surgical procedure.
  - Evaluate the patient’s anxiety level by providing opportunities to talk about feelings and to ask questions about the upcoming surgery, the potential for distorted body image, and support system.

• **Preoperative Nursing assessment:** Obtain physical assessment findings
  - Patient’s history
  - Preoperative bowel elimination patterns, fluid status, cardiovascular & respiratory assessment
  - Complete a self-care or **functional assessment** to determine whether the patient can manage drains and indwelling catheters and is able to self manage stoma.
Bowel preparation

• Prevent fecal contamination of the peritoneal cavity and to decompress the bowel.

• **Typical bowel preparation includes:**
  • a low residue diet for 1 to 3 days prior to surgery,
  • mechanical bowel cleansing (Laxatives, bowel prep solution)
  • reduction of bacterial flora via an antibiotic bowel preparation with neomycin or erythromycin.

• Intravenous hydration @ late stages of preparation ~ fluid and electrolyte losses

• Parenteral tobramycin and vancomycin → to reduce the risk of postoperative wound infection involving anaerobic pathogens, such as the bacteroides.
Stoma site selection

• **Key points to consider:**
  • should be located within the rectus abdominis muscle.
  • **Positioning issues:** Contractures, posture, mobility (e.g., wheelchair confinement, use of a walker, etc.).
  • **Physical considerations:** Large/protruding/pendulous abdomen, abdominal folds, wrinkles, scars/suture lines, other stomas, waist line, iliac crest, braces, pendulous breasts, vision, dexterity, and the presence of a hernia.
  • **Patient considerations:** Diagnosis, age, occupation, prior experience with a stoma,
  • **Surgical considerations:** Surgeon’s preferences, type of surgery/stoma planned, segment of intestine used, and whether an incontinent versus a continent catheterizable diversion is planned.
**Figure 1.** Illustration of stoma site marking for a female with a protuberant abdomen.

Images used with permission: Step 1, female photograph © mik122/veer; Step 2, female photograph © SeDmi/veer; Step 3 and 4, female photograph ©Kokhanchikov/shutterstock, and muscle overlay ©Randall Reed Photography/veer.
Step 1
Look at the profile of the patient. Notice where the abdomen curves back under toward the body. The underside of the abdomen is not visible to the patient. Avoid this area.

Step 2
Identify and target the rectus abdominis muscle below the ribs.

Step 3
Mark optimal stoma sites on the rectus abdominis muscle, that are in patient's line of sight, while avoiding creases and skin folds.
POSTOPERATIVE
CONSIDERATION
Routine postoperative care

- Cardiovascular and respiratory function (incentive spirometer, coughing and deep breathing, early ambulation)
- Hemostasis
- Fluid and electrolyte balance (metabolic balance)
- Evidence of peristalsis
- Management of drains: urine output monitoring (character, color, presence of blood)
  - Pink or light red urine initially observed,
  - Bright red blood or clots must be directly reported
  - Report any amount less than 0.5 ml/kg/hour (30 ml/hour) or no output for more than 15 minutes.
- Pain management: epidural analgesia → oral analgesics when clear fluid tolerated
Management metabolic balance

- Metabolic problem depends on:
  - the length and the type of bowel segment used
  - the atrophy of the bowel mucosa subsequent to chronic urinary diversion,
  - baseline renal function, baseline liver function, age, prior chemotherapy/radiotherapy and concomitant comorbidities
- In an ileal conduit, the short bowel segment with limited urine contact keeps metabolic changes as minimal as possible. Patients will have episodes of severe acidosis and will have a risk for renal function deterioration.
- Resection of significant amounts of ileum can lead to malabsorption of bile salts and vitamin B12,
Stoma viability

• Ongoing assessment of the stoma
  • Size, shape, color → red, moist, and edematous during the initial postoperative period
    • Any sign of darkness or duskiness raises a suspicion of an ischemic vascular supply.
  • Peristomal sutures → slight bleeding during cleaning is normal
  • Complete healing: 6-8 wks
Nursing ostomy care

- Empty the ostomy bag when it is sufficiently full: 1/3 to 1/2 full (weight weakens the seal and result in leakage)
- Clean and monitor the stoma and the skin surrounding the stoma for signs and symptoms of skin breakdown and infection when changing the ostomy device/appliance.
  - No more than 1/8 inch (3mm) should be visible between stoma edge and flange
  - During this postop period the stoma should be measured about once a week.
- The pouch may be left on as long as it is not leaking for a maximum of 7 days.
- check the seal often if they are perspiring heavily.
- Prevent infection ANTT(aseptic non touch technique)
- Shower allowed, soap can cause irritation, check for leakage
Nursing ostomy care

• Prevent Odor. Urine odor is a common problem, mostly from poor hygiene, alkaline urine, normal breakdown of urine (ammonia), concentrated urine from insufficient fluid intake, and the ingestion of certain foods, such as asparagus.
  • diluted urine has less odor, adequate fluid intake is helpful.

• Provide emotional support and education to the patient at all times

  Collaborative practice
  Refer to multidisciplinary team
Types of pouching systems

- many styles and sizes,
- include an adhesive part that sticks to the skin (called a flange, skin barrier, or wafer) and a collection pouch.
- 2 main types
  - One-piece pouches are attached to the skin barrier
  - Two-piece systems are made up of a skin barrier and a pouch that can be taken off and put back on the barrier
Accessories

Use stoma paste or special seals to fill creases
Stomadhesive powder reduce irritation, absorb moisture
Ostomy pouch, ostomy wafer/baseplate/flange, adhesive remover, stoma paste, and stoma powder
Complications

- Extensive pelvic dissection → increase the risk of thrombophlebitis.
- Pelvic lymph node dissection → lymphedema in the lower limbs.
- Urinary tract infection (UTI)
- Stomal necrosis
- Stenosis
- Ulceration
- Anastomotic leak or rupture
- Obstruction at the ureteroileal anastomotic site/urethral stricture
- Acute pyelonephritis
- Hydronephrosis (i.e., distention of the renal pelvis)
- Renal calculi occurs at least 2 years postoperatively and sometimes as long as 5 to 10 years later.
- Urinoma (i.e., cyst containing urine)
Peristomal Complications

Peristomal skin complications usually fall into one of five categories:

• **Mechanical trauma**: pressure, friction, or shear.
  • Pressure can result from an ill-fitting ostomy appliance, ostomy belt or convex pouching system.
  • Friction occurs from abrasive cleansing, improper pouching removal techniques, and frequent appliance changes. The tissue damage can be partial to full thickness.

• **Infection**: peristomal candidiasis, folliculitis
  • perspiration, pouch leakage, denuded skin or prolonged wear time
Peristomal Complications

- **Chemicals and irritants:**
  - **Peristomal Irritant Contact Dermatitis:** soap, solvent, or adhesives, patient’s own effluent leaking from a poorly fitting pouch or seal.
  - **Hyperplasia:** pseudoverrucous lesions; chronic papillomatous dermatitis; hyperkeratosis; granulomas; pseudo-epithelial hyperplasia; exuberant tissue growth; and proud flesh. Prolonged skin exposure to urine and moisture. (Fig 1)
  - **Alkaline encrustations:** crystal-like formations on exposed peristomal skin (Fig 2)

![Fig 1](image1.png) ![Fig 2](image2.png)
Peristomal Complications

• **Diseases:**
  - Hernia
  - Prolapse
  - Retraction
  - Necrosis
  - Stenosis

• **Skin allergens**
  - Contact dermatitis

• Suture Granulomas – granulation tissue at the suture skin interface and are a reaction to suture material.
Stomal stenosis. (A) Stomal stenosis with poor appliance fit and skin excoriation after ileal conduit; (B) stomal stenosis after appendicovesicostomy leading to stones in the pouch
# Troubleshooting Common Peristomal Skin Complications

<table>
<thead>
<tr>
<th>Condition</th>
<th>Recommendation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Irritant contact dermatitis</td>
<td>The irritation mirrors where the effluent was sitting on the skin. Cleanse the area with warm tap water. Pat dry. Review product usage and techniques to determine cause. Correct/revise pouching system.</td>
</tr>
<tr>
<td>Allergic contact dermatitis (patient specific allergy)</td>
<td>Remove the allergen, avoid other irritants and protect the skin. Patch test with other products as needed. Refer to dermatology</td>
</tr>
<tr>
<td>Mechanical trauma</td>
<td>Assess equipment and technique. Modify to prevent re-injury.</td>
</tr>
<tr>
<td>Folliculitis caused by hair being pulled with pouch removal.</td>
<td>Topical antimicrobial powder, cover large lesions with nonadherent dressing. Once healed, carefully shave area. Use of adhesive remover and sealant is advised after lesions healed.</td>
</tr>
</tbody>
</table>
## Troubleshooting Common Peristomal Skin Complications

<table>
<thead>
<tr>
<th>Condition</th>
<th>Treatment</th>
</tr>
</thead>
<tbody>
<tr>
<td>Candidiasis</td>
<td>Topical antifungal powder. Assess system for leakage or undermining of seal. Refit pouching system as appropriate.</td>
</tr>
<tr>
<td>Pseudoverrucous Lesions/ hyperplasia</td>
<td>Assess equipment for proper aperture and fit. Resize as needed. Severe cases, sharp debridement of the tissue may be required. Silver nitrate</td>
</tr>
<tr>
<td>Hernia</td>
<td>Support belt while lying down in a reclining, flat position, while up and ambulatory, and remove it while in bed. Exercise regularly to maintain abdominal muscle tone and strength.</td>
</tr>
</tbody>
</table>
## Troubleshooting Common Peristomal Skin Complications

<table>
<thead>
<tr>
<th>Necrosis</th>
<th>Use transparent pouch to visualize the stoma, size and resize surgical revision to debride all necrotic (dead) tissue and create a new stoma</th>
</tr>
</thead>
</table>
| Prolapse/ Retraction/stenosis    | **Prolapse:** manual reduction/ Belt, increase size opening  
Surgical intervention  
**Retraction:** Reduce weight, Consider use of convexity, a belt, skin barrier rings, strips, or paste  
**Stenosis:** secure pouch seal to prevent skin irritation. Promptly treat hyperplasia, adequate hydration |
What Do I Need to Tell the Patient/Family?

Extensive education in ICUD self-care

Teaching should include the following:

• Types of pouching systems (one or two piece)
• Fitting the skin barrier
• Emptying and changing the pouch
• Prevent complications and identify earlier, protecting peristomal skin
• When and how to contact the treating clinician in the event of unexpected changes to the stoma or urine are observed
• Refer to the WOCN (Wound, Ostomy, Continence nurse)
• Referral to an ostomy support group (in Lebanon, Lebanese Ostomy Association [www.arabostomy.com])
Questions
References

• Urinary diversion care. (2014). Lippincott’s Nursing Procedures and skills.