Ostomy Overview: Care of the Patient with an Ostomy

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Purpose

The purpose of *Care of the Patient with an Ostomy* is to educate the healthcare professional about ostomies and the care of ostomies, as well as review the important role of the wound and ostomy nurse.

Learning Objectives

*After successful completion of this course, you will be able to:*

1. Describe the anatomy and physiology of gastrointestinal tract.
2. List the indications for fecal diversion.
3. Differentiate the different types of ostomies.
4. Describe the anatomy and physiology of genitourinary tract.
5. Identify the indications for a urinary diversion.
6. State the preoperative management preparation for stoma.
7. Classify the principles of stoma management.
8. Differentiate the stoma complications.
9. Differentiate the peristomal complications.
10. Describe the ostomy adjustment.
11. Review the role of the ostomy nurse.
12. Understand the resources available for patients with ostomies.
Introduction

According to Doughty and Landman (2013), the number of permanent diversions is decreasing because of medical and surgical advances. Still, fecal and urinary diversions may be required on either a temporary or permanent basis for many reasons.

It is important for the healthcare provider to understand the anatomy and physiology of the gastrointestinal and genitourinary tracts, why ostomies are needed, care of the ostomy, as well as, how to support the patient with an ostomy. This course will delve into the detail about overall care of the patient with an ostomy.
Anatomy and Physiology of Gastrointestinal Tract

- GI Tract is also referred to as the alimentary canal.
- The oral cavity begins the GI tract and then enters into the esophagus to the stomach. The stomach holds the food and also starts the digestive processes.
- From the stomach, we enter the pyloric region. Then we pass through the pyloric sphincter and enter the small intestine.
- There are three regions in the small intestine: duodenum, jejunum, and ileum. At the end of the small intestines, ileo-cecal junction joins the small intestine to the large intestine.
- The cecum is the start of the large intestines. The appendix is off the cecum. The cecum leads to the ascending colon to the transverse colon to the descending colon. The descending colon leads to the sigmoid colon to the rectum and finally the anus.

Indications for Fecal Diversion

There are many reasons why patients need a fecal diversion. Some of them include:

1. Inflammatory bowel disease
   a. Crohn’s disease
   b. Ulcerative colitis
2. Congenital disorders
3. Obstructive disorders
4. Carcinoma of the distal colon, rectum, and occasionally the anus
5. Diverticular disease
6. Infectious enteritis
7. Trauma
8. Pseudomembranous colitis
9. Colonic obstruction

Different Types of Gastrointestinal Ostomies

A colostomy is the surgical operation in which a piece of the colon (large intestine) is diverted to an artificial opening (called a stoma). A colostomy is created when a portion of the colon or the rectum is removed and the remaining colon is brought to the abdominal wall (United Ostomy Associations of America, 2013). It may further be defined by the portion of the colon involved and/or its permanence. The name of the ostomy is indicative of the location of the stoma. A more detailed review of the types of colostomies will be discussed later.
Temporary versus Permanent

Colostomies are either temporary or permanent. A temporary colostomy will allow the lower portion of the colon to rest or heal. It may have one or two openings (if two, one will discharge only mucus).

- May be required if the intestinal tract can't be properly prepared for surgery because of blockage by disease or scar tissue.
- May be created to allow inflammation or an operative site to heal without contamination by stool.
- Usually be reversed with minimal or no loss of intestinal function.

(American Society of Colon & Rectal Surgeons, 2013)

A permanent colostomy usually involves the loss of part of the colon, most commonly the rectum. The end of the remaining portion of the colon is brought out to the abdominal wall to form the stoma.

- May be required when disease, or its treatment, impairs normal intestinal function, or when the muscles that control elimination do not work properly or require removal.
- The most common causes of these conditions are low rectal cancer and inflammatory bowel disease.

Construction of the Ostomy

An ostomy can be constructed in one of many ways, including:

- End ostomy: One opening
- Loop ostomy: Two openings from the bowel which is split
- Double barrel: Complete dissection of the bowel with both sections forming end stomas
Did You Know?

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<td>Transverse colostomy</td>
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Types of Colostomies

The name of the type of colostomy is indicative of the location in the colon where the stoma is formed.

- **Descending Colostomy**: The surgical opening created in the descending colon is brought to the surface of the abdomen. It is usually located on the lower left side of the abdomen.
- **Transverse Colostomy**: The surgical opening created in the transverse colon resulting in one or two openings. It is located in the upper abdomen, middle, or right side.
- **Ascending Colostomy**: A relatively rare opening in the ascending portion of the colon. It is located on the right side of the abdomen.
- **Cecostomy**: The surgical construction of an opening into the cecum. It is performed as a temporary measure to relieve intestinal obstruction in a patient who cannot tolerate major surgery.
- **Sigmoidostomy**: The most common location of an ostomy is in the sigmoid colon. A sigmoidostomy is the surgical construction of an opening into the sigmoid colon, and is commonly referred to as a sigmoid colostomy.

(United Ostomy Associations of America, 2013)

Location of Colostomies
Types of Ileostomies

**Ileostomy** diverts the ileum to a stoma. It is a surgically created opening in the small intestine, usually at the end of the ileum. The intestine is brought through the abdominal wall to form a stoma. They may involve removal of all or part of the entire colon.

**Ileoanal Reservoir (J-Pouch):** The colon and most of the rectum are surgically removed and an internal pouch is formed out of the terminal portion of the ileum. An opening at the bottom of this pouch is attached to the anus such that the existing anal sphincter muscles can be used for continence. This procedure should only be performed on patients with ulcerative colitis or familial polyposis who have not previously lost their anal sphincters. In addition to the "J" pouch, there are "S" and "W" pouch geometric variants.

**Continent Ileostomy (Kock Pouch):** A reservoir pouch is created inside the abdomen with a portion of the terminal ileum. A valve is constructed in the pouch and a stoma is brought through the abdominal wall. A catheter or tube is inserted into the pouch several times a day to drain feces from the reservoir.

*Surgery Types. Image courtesy of digestive.niddk.nih.gov.*
The Ileoanal Reservoir (J Pouch)

The ileoanal reservoir (J Pouch) is now the most common alternative to the conventional ileostomy. Technically, it is not an ostomy since there is no stoma. This procedure has replaced the Kock’s Pouch.

Test Yourself

True or False? Colostomy and ileostomy are used interchangeably.

Answer: False
A colostomy is the surgical operation in which a piece of the colon (large intestine) is diverted to an artificial opening while an ileostomy is a surgical operation in which a piece of the small intestine is diverted to an artificial opening.
Anatomy and Physiology of Genitourinary Tract

- The genitourinary system includes: two kidneys, two ureters, a bladder, two sphincter muscles and a urethra.
- After the body has taken what is needs from food, waste products are left behind in the blood. The urinary system removes that waste called urea.
- Urea is carried in the bloodstream to the kidneys. The kidneys remove urea from the blood through tiny filtering units called nephrons. Urea together with water, and other waste, forms urine as it passes through the nephrons and down the renal tubules. As urine leaves the kidneys, it travels down the ureters (a muscle that are 8-10 inches long).
- The urine then enters the bladder and is stored there. Sphincter muscles are around the opening of the bladder into the urethra. The urethra is a tube that connects the urinary bladder to the genitals for the removal of fluids.

Indications for Urinary Diversion

Urostomy is most commonly performed after cystectomy (removal of the bladder). Indications for urinary diversion involve neoplasms, damage to the urinary tract, or other pathways where urine may back up into the kidneys or continual leakage from the bladder. Some of these indications include:

- Bladder cancer: The most common indication for continent urinary diversion. Invasive tumors may require radical cystectomy and urinary diversion.
- Hostile neurogenic bladder: Occurs from trauma, infection, or disease and alters neurological control of the lower urinary tract resulting in voiding dysfunction and upper urinary tract distress.
- Refractory interstitial or radiation cystitis: Chronic inflammation of the bladder which can result in low bladder wall compliance and hemorrhagic cystitis.
- Congenital anomalies of the lower urinary tract: Anomalies that require extensive reconstructive surgeries may result in a urinary diversion.

(Gray, Cluff, Johnson, Dixon, & Wasson, n.d.)

Test Yourself

Which of the following is NOT an indication for a urinary diversion?

a. Bladder cancer
b. Hostile neurogenic bladder
c. Urinary tract infection
d. Radiation cystitis

The correct answer is C. Bladder cancer, hostile neurogenic bladder, and radiation cystitis are all indications for an urinary diversion. A UTI is not an indication.
Urostomy Overview

- **Urostomy**: This is a general term for a surgical procedure where there is a diversion of urine away from a diseased or defective bladder through a surgically created opening, or stoma, in the skin.
- The ileal or cecal conduit procedures are the most common urostomies.
- Either a section at the end of the small bowel (ileum) or at the beginning of the large intestine (cecum) is surgically removed and relocated as a passageway (conduit) for urine to pass from the kidneys to the outside of the body through a stoma.
- It may include removal of the diseased bladder.
- Three of the more common types of urinary diversion reviewed are: ileal conduit, continent urostomies, and orthotopic neobladder.
**Ileal Conduit**

- The surgical anastomosis of the ureters to one end of a detached segment of ileum, the other end being used to form a stoma on the abdominal wall.
- It entails separating a 10-15 cm segment of ileum from the intestinal tract, implanting the ureters into the proximal end of the segment, and bringing the other end to the skin as a stoma.
- With this type of procedure, the patient wears an ostomy pouch at all times and has continuous drainage of urine into an appliance.

(United Ostomy Associations of America, 2013)
**Continent Urostomy**

- This form of continent diversion does include a stoma.
- IThe reservoir or pouch is created inside the abdomen using a portion of either the small or large bowel.
- A valve is constructed in the pouch and a stoma is brought through the abdominal wall.
- This method requires the patient to empty the reservoir, the internal pouch, regularly through the stoma using a catheter or thin plastic tube.
- The two different pouches are the Indiana and Kock.

(United Ostomy Associations of America, 2013)
Differences Between the Continent Urostomies

Indiana pouch: The ileocecal valve that is normally between the large and small intestines is relocated and used to provide continence for the pouch which is made from the large bowel.

Kock pouch: A “nipple” valve is made from the small bowel and it plicated to provide continence for the pouch.

In both procedures, the valve is located at the pouch outlet to hold the urine until the catheter is inserted.

(United Ostomy Associations of America, 2013)
Orthotopic Neobladder

- A replacement bladder made from a section of intestines that substitute for the bladder in its normal position and is connected to the urethra to allow voiding through the normal channel.
- Like the ileoanal reservoir, this is technically not an ostomy because there is no stoma.
- Candidates for neobladder surgery are individuals who need to have the bladder removed but do not need to have the urinary sphincter muscle.

(United Ostomy Associations of America, 2013)

Did You Know?

“Orthotopic” means “in the same place”

And ...

“Neobladder” means “new bladder”
Test Yourself

Which of the following does not have a stoma?

A. Orthotopic Neobladder
B. Ileal Conduit
C. Kock’s Pouch
D. Indiana Pouch

The correct answer is A. The orthotopic neobladder does not have a stoma

Preoperative Education

- Patient and family should receive education regarding what to expect after surgery.
- The patient should receive a basic review of:
  - The functions of the body systems involved
  - The creation of the stoma
  - What the stoma will look like
  - How it will function
  - When it will function
- Pictures are helpful to assist the patient with visualizing the operation.
- It is important that patients realize that they can live perfectly fine without body organs such as the bladder and colon.
- It is imperative that the medical staff evaluate whether or not the patient has absorbed or comprehended the information given to them with techniques such as the teach-back when patient verbalizes what they were just taught.
Preoperative Education Visit with Ostomy RN

In a controlled setting where the patient is able to prepare for a life changing event such as living with an ostomy, best practice is to have the patient meet with an ostomy RN prior to surgery. Items that will be discussed at this meeting are:

1. How the gastrointestinal and genitourinary systems work.
2. The stoma appearance by showing pictures of what is to be expected.
3. There are no nerves and no sensation in the stoma. The tissue resembles the lining inside the mouth and will always be red and moist. The stoma will be swollen and will shrink for the first 6-8 weeks post-surgery.
4. Odor is never acceptable when pouch is on. Pouching systems are odor-proof and waterproof. Odor deodorant drops are available.
5. Discuss the ability to conceal pouch under clothing.
6. Have hands-on demonstration of available pouches. Allow the patient and family members to hold pouches and explore the characteristics of the pouches.
7. Describe lifestyle adjustments.
8. Focus on psychological preparation by providing support, empathy, and answering of questions.
9. Stoma marking is done by actually marking the location of the stoma on the patient.

(Ostomy Guidelines Task Force, 2010)

Test Yourself

True or False? Stoma odor is highly probable during the first 6-8 weeks as the stoma shrinks.

Answer is false: Odor is never acceptable when pouch is on. Pouching systems are odor-proof and waterproof. Odor deodorant drops are available.
Stoma Marking

Stoma marking is the assessment of the patient’s abdomen before surgery to prevent postoperative complications from poor appliance adherence due to stoma location. It is done by a certified ostomy RN. There are three options for marking the stoma location:

- Indelible marker with transparent dressing
- The tattoo method
- The laceration method

(Ostomy Guidelines Task Force, 2010)

Did You Know?

- Stoma marking is also termed stoma siting.
Stoma Marking Procedure

The ostomy nurse will need to properly mark the location of the stoma location. This is done by:

1. Know the planned surgical procedure, the anatomic location for the stoma, and the type of stoma.
2. Explain the procedure to the patient.
3. Examine the abdomen while patient is in a laying, sitting, and standing position.
4. Be mindful of special situations (i.e. thin person, abdominal distention/obese person, physically challenged person).
5. Locate the patient’s belt line.
6. Locate the rectus muscles.
7. Assess the abdomen for folds, creases, and scars.
8. Locate the infraumbilical roll and find the apex (the top) of the roll. Mark this area with an X for a potential site.
9. Confirm the patient can see the marked spot and that the spot is away from any creases, folds, scars, bony prominences, umbilicus, costal margin, and areas of radiation therapy.
10. Mark the stoma site using one of the marking methods per hospital policy.
11. Document in the patient’s record the stoma marking procedure.

(Colwell, Goldberg, & Carmel, 2004)
Stoma Characteristics

- Whether or not the stoma is fecal or urinary, it cannot be seen by the naked eye. The nurse will need to know by the medical record if it is a fecal stoma or a urinary stoma and whether the stoma was constructed using large or small bowel, bladder, or ureters, or whether the diversion is incontinent or continent.
- Most stomas are pink/red in color, moist with a small amount of edema postoperatively.
- The shape of the stoma can range from oval to round and can vary with peristalsis.
- Ideally there should be a degree of protrusion of the stoma; however, it can range from flush to protruding.
- Rods/bridges are used to mount stoma at skin level for loop ostomies
- Urinary stomas may have one or two stents in place that are inserted during surgery to protect anastomotic sites between the ureters and the conduit to maintain patency during times of postoperative intra-lumen edema.
- Function:
  - As discussed, depending on the location of the stoma in the bowel depends on the consistency of the output and the pattern of elimination.
  - Output from a fecal stoma may not begin for a day or two; however, an incontinent urinary stoma should be expelling urine immediately following stoma construction.

(Colwell, Goldberg, & Carmel, 2004)
Pouching Characteristics

During the immediate postoperative period, the nurse should focus on the following pouching principles:

- A clear pouch should be used for visualization of the stoma and effluent.
- A drainable pouch should be used to permit emptying of flatus or stool without removing the pouch which may traumatize the patient’s skin.
- Pre-cut pouches are not used at this time due to stoma edema and irregularly shaped stomas.
- Convexity wafers are discouraged at this time due to a need to avoid pressure on the mucocutaneous suture line that could cause a separation.

The goal of an ostomy pouching system should provide predictable, reliable wear time. The pouch should be comfortable, odor-proof, and protect the peristomal skin. The wear time should be at least three days. It is not recommended to exceed seven days of wear time (Ostomy Guidelines Task Force, 2010). The ultimate goal for a patient with an ostomy is to have an effective and desirable pouching system as this will improve the quality of life of the person with an ostomy.
Components to a Pouching System

Skin Barrier
- This piece of the pouch has an opening for the stoma. The opening can be pre-cut by the manufacturer or can be cut to fit by the patient. The cut to fit skin barrier is used in the initial postoperative period to adjust to the decrease in edema of the stoma.

Pouch
- This piece of the system attaches to the skin barrier to collect the stool or urine that comes from the stoma.

Drainable Pouch
- A drainable pouching system has the ability to open at the bottom allowing the contents to be drained or emptied.

Closed-End Pouch
- A closed-end pouching system does not have an opening at the bottom of the pouch. This entire system is thrown away when full and a new system is applied.

One-Piece Pouching System
- The skin barrier and the pouch are made as one piece, they do not come apart.
- The entire system is removed and replaced each time a pouch change is done.

Two-Piece Pouching System
- The skin barrier and the pouch are two separate pieces that you snap, clip or stick together.
- The pouch can be removed and replaced while leaving the skin barrier intact on the abdomen.

One-Piece Pouch Sample

Two-Piece Pouch Sample

(Images courtesy of Lynch & Lavoie, 2013)
Pouch Change Procedure

1. When changing your ostomy pouch is to make sure you empty the pouch fully prior to pouch change procedure.
2. Gather all of the supplies you will need for a pouch change:
   - Face cloths
   - New pouch
   - Scissors if cutting out skin barrier
   - Measuring guide if stoma measurement is needed
   - Stoma adhesive powder, paste, and skin prep if typically used
   - Plastic baggie to dispose the old pouch into
3. Sit in a comfortable position that allows visualization of the stoma.
4. Remove pouch and dispose of in plastic bag.
5. Cleanse peristomal skin using warm water and face cloth.
6. Apply dusting of stomahesive powder to skin if excoriated or denuded.
7. Wipe away any extra powder that does not stick to peristomal skin.
8. Seal in powder with skin prep.
9. Measure stoma using measuring guide that is provided by the manufacture of the pouches.
10. If pouches are not precut then trace and cut out new size of stoma opening on skin barrier.
11. Center stoma in middle of skin barrier opening and place pouch over stoma. If using a two-piece pouch this is the time to snap on, click on or stick on the pouch to the skin barrier.
12. Pouch is typically changed every 3-4 days.
13. If leaking of effluent is noted then pouch change should occur immediately.

Test Yourself

True or False? The ultimate goal for a patient with an ostomy is to have an effective and desirable pouching system as this will improve the quality of life of the person with an ostomy.

Answer is true: If the pouching system works for the patient, then that will improve their quality of life!
Stoma Complications

The following stoma complications will be discussed in detail:
1. Mechanical trauma (stoma trauma)
2. Hernia
3. Necrosis
4. Mucocutaneous separation
5. Stenosis
6. Fistula
7. Prolapse
8. Retraction

Stoma Trauma
Stoma trauma is injury to mucosa on the stoma.

- Presentation: Usually appears as a white line on the beefy red or pink stoma. The injury will typically present with a shallow laceration (minimal depth). The patient will not complain of pain.
- Management: The nurse will need to identify the cause of the injury and correct any obvious causes if possible. Often the cause of the injury is from an ill-fitting appliance. Once the cause of the stoma trauma is identified and corrected, the stoma injury usually heals spontaneously.
- Patient Education: Teach the patient about measuring their stoma weekly and properly cutting the pouch. This will prevent any unnecessary injury to the stoma.
Stoma Complications

Parastomal Hernia
A parastomal hernia develops due to a defect in the abdominal fascia that allows loops of intestine to protrude into the areas of weakness.

- Presentation: The hernia is visualized when abdominal pressure is increased with the patient in a sitting or standing position. The size of the hernia is variable depending on size of the defect.
- Management: If the patient is asymptomatic and is able to maintain a consistent pouching system seal with no discomfort, then surgical intervention is not needed. At this point, the patient can be fitting for a hernia belt. A hernia belt supports the hernia by decreasing the protrusion and stabilizing the parastomal plane. This support assists in maintaining a pouch seal. Also, a flexible pouching system may be recommended to allow for a better fit around the hernia. Please note, it is recommended that patients that are irrigating (for the end colostomy) that they suspend the irrigation if difficulty instilling or evacuating is encountered.
- Patient Education: The nurse should focus on diet and fluid intake to prevent constipation and keep stool at a pasty consistency to allow for bowel movements. Patients should assess stoma for any color change and report any pain or discomfort to MD.

Stoma Necrosis
Stoma necrosis results from impairment of blood flow to the stoma tissue. Impaired blood flows lead to ischemia and eventually infarction, tissue death.

- Presentation: Stoma will appear dark in color, and will appear flaccid. Stoma necrosis can occur anytime from immediately after surgery to within first 24 hours. Necrosis can occur anywhere from a part of the stoma to as deep as below the fascia.
- Management: If the necrosis extends beyond the fascial level, immediate surgical intervention is needed. If the necrosis remains above the fascial level, the stoma should be monitored closely for function. A transparent two-piece pouch is recommended to allow easier assessment.
- Patient Education: Patients should be educated on the odor that is expected from the necrotic tissue until it sloughs off. It is common to find a mucocutaneous separation as the dead tissue detaches from the skin.
Stoma Complications

Mucocutaneous Separation
Mucocutaneous separation is when there is a separation or detachment of the stoma from the surrounding skin. Risk factors for separation include diabetes, malnutrition, stoma necrosis, infection, and prior administration of corticosteroids.

- **Presentation:** The amount of separation from the stoma and skin varies greatly. The nurse needs to assess the degree of depth and separation by measuring (in centimeters) the separation. The defect needs to be documented along with the circumference involved. These measurements will help to determine if there is progress toward healing or further separation.
- **Management:** Typically, mucocutaneous separation is managed conservatively. The separation is filled with an absorbent material (such as skin barrier powder, hydrofiber, or alginate). The pouch is fitted over the area to protect the separation from stool or urine. As the separation heals, the stoma should be assessed for stenosis and retraction.
- **Patient Education:** The patient needs to be educated on using the absorbent materials to treat the separation with each pouch change.

Stomas Stenosis
Stomas stenosis is the narrowing of the stoma that occurs at the skin or the fascia level which impairs the drainage of effluent (stool or urine). The contributing factors of this stenosis includes: necrosis, excessive tension, retraction, recurrent Crohn’s disease, mucocutaneous separation, and recurrence of cancer.

- **Presentation:** The patient may complain of constipation followed by a large volume of output that may be loud, explosive, or excessive gas. The patient may complain of pain at the time of stoma emptying. Upon assessment, there is narrowing of stool diameter. The stoma opening will appear small. Recurrent urinary tract infections may occur with projectile emptying of urine.
- **Management:** For patients with fecal diversions a low-residue diet, stool softeners, or high liquid diet can all assist with easy passage of stool through stoma. Surgical intervention may be necessary for severe cases of stenosis.
- **Patient Education:** Teach the patient on proper diet. It is also important to educate the patient on signs and symptoms of a urinary tract infection (such as fever, flank pain, and odorous urine).
Stoma Complications

Stoma Fistulas
In a fistula, there is abnormal communication between the stoma and the surrounding area. The contributing factors include recurrences of Crohn’s disease, poor healing, and mechanical trauma from a pouching system. Also, fistulas may occasionally occur from a suture placed full-thickness through the side of the stoma at the time of creation.

- Presentation: The fistula will appear as an opening on the peristomal skin with communication to the intestine. The fistula may have 100% of the effluent exit from this site. Other times, there is partial effluent exit in which only a percentage of the effluent drains from the fistula. The other percentage continues to drain from the stoma. The patient may experience peristomal skin excoriation(s) and problems with maintaining a seal due to the leakage of the effluent from the fistula.
- Management: Superficial fistulas can heal spontaneously; however, most fistulas require surgical reconstruction of the stoma. In some cases, fistulas may require stoma relocation. If the treatment is to maintain the stoma site, then a pouch selection is very important. If possible, it must accommodate both the stoma and the skin fistula in order to protect the patient’s peristomal skin and maintain a proper seal.
- Patient Education: The nurse needs to educate the patient on pouch placement over both the stoma and fistula. Due to the increased risk of skin breakdown from the effluent, meticulous skin care is warranted.

Stoma Prolapse
Stoma prolapse is a telescoping of the bowel through the stoma. The contributing factors to stoma prolapse include the use of a large fascial opening in the abdominal wall, stoma brought out through an abdominal incision, and the presence of an obstruction at the time of stoma formation.

- Presentation: The length of the stoma prolapse is variable. Upon assessment, the mucosa becomes edematous and a deep red color. The blood supply to the prolapsed bowel is at risk of being compromised. This decrease in blood flow may result in ischemia followed by infarction. The end result is stoma necrosis.
- Management: The treatment for stoma prolapse is conservative. A flexible pouching system is used to prevent any trauma from occurring to the edematous bowel. The pouch opening should accommodate the stoma at its largest size.
- Patient Education: The patient needs to be educated on how to reduce the prolapse so that the pouch can be applied. The patient should apply cold packs to the stoma for several minutes. This will help decrease the swelling and reduce the stoma. The pouch should be applied when the prolapse is reduced. The stoma should be monitored for color changes. The patient should be educated on signs and symptoms of ischemia as the patient will need to seek immediate medical attention. A stoma that becomes dark in color and becomes painful is a medical emergency. Surgical repair is warranted in the presence of ischemia, congestion, or inability of the stoma to be reduced.
Stoma Retraction
Stoma retraction is the disappearing of the normal protrusion of the stoma to skin level or below skin level. The contributing factors of stoma retraction are all related to tension on the stoma. This tension is caused by one or more of the following: short mesentery, thickened abdominal wall, excessive scar or adhesive formation, obesity, inadequate initial stoma length, improper skin excision, necrotic stoma, and mucocutaneous separation.

- **Presentation:** When there is a retraction, the stoma is level with skin level or below the skin level. The patient may report that the stoma disappears when they are sitting. A retraction creates a challenge in maintaining a seal on the pouching system. Effluent can be noted to undermine the seal of the pouch when stoma retraction is involved.
- **Management:** A convex pouch with the use of an ostomy belt can provide a predictable seal. Surgical revision could be considered if patient is not able to achieve a seal that protects the periwound skin.
- **Patient Education:** The nurse needs to educate the patient on the purpose of the convex pouch. Meticulous periwound skin care is warranted when dealing with a retracted stoma.

(Colwell, Goldberg, & Carmel, 2004)
Test Yourself

What is the narrowing of the stoma that occurs at the skin or the fascia level which impairs the drainage of effluent?
A. Stoma Fistula
B. Stoma Stenosis
C. Stoma Prolapse
D. Stoma Retraction

The correct answer is B. A stoma stenosis is the narrowing of the stoma that occurs at the skin or fascia level which impairs the drainage of the effluent.

Peristoma Complications Overview: Skin Breakdown

According to Doughty & Landmann (2013), peristomal skin irritation most commonly occurs as a result of mechanical trauma, exposure to damaging effluent, or an allergic reaction to a pouching product. There are also fungal infections from antibiotic therapy or with patients living in warm climates. As well, peristomal candidiasis can occur with any warm, dark area. Rarely, inflammatory bowel disease can cause peristomal pyoderma gangrenosum. Preventing skin breakdown is a major challenge in ostomy care. Enzymes in stool and ammonia in the urine can quickly cause excoriation.
List of Peristoma Complications

Alvery and Beck (2008) stated that inflammatory or infectious conditions affecting the skin around an intestinal stoma are common and may be a source of considerable aggravation to patients. There are many complications of the peristomal region.

Common peristomal complications include:
1. Peristomal varices
2. Peristomal candidiasis
3. Mucosal transplantation
4. Pseudoverruccous lesions
5. Suture granulomas
6. Peristomal irritant contact dermatitis
7. Peristomal allergic contact dermatitis
8. Folliculitis
9. Peristomal trauma
10. Peristomal pyoderma gangrenosum (PPG)


Peristomal Varices
Peristomal varices is often referred to as “caput medusae.” This complication is found at the stoma site in patients with portal hypertension. Large, portosystemic venous collaterals present at site where the bowel comes through the abdominal wall.

- Presentation: A purple hue caused by dilation of the mucocutaneous vessels is noted around the stoma. Patients may experience intermittent, spontaneous, and profuse bleeding from peristomal area.
- Management: The immediate action is to stop the bleeding by applying direct pressure and manage the underlying disease (portal hypertension). The nurse will need to use a one piece pouch.
- Patient Education: The patient should be educated on applying direct pressure if bleeding does occur. If this does not stop the bleeding after several minutes, the patient should seek medical attention. It is important to educate the patient on a pouch that will not apply direct pressure to the peristomal area, such as a two piece pouch. When using the two piece pouch, the pressure to apply the pieces and the flange may rub on dilated vessels. This is why this is not recommended.

(De Ocampo, 2012)
List of Peristoma Complications

Peristomal Candidiasis
Peristomal candidiasis is the overgrowth of candida organism (yeast) which causes inflammation or infection to the surrounding skin of a stoma. Most common Candida species is C. Albicans. The risk factors include long-term antibiotic administration, diabetes, use of immunosuppressive drugs, surgery, and a moist environment. Diagnostic finding includes satellite lesions on the edges of the affected area. The involved area is typically confined to under the pouching system as outside is typically a dry area.

- **Presentation:** The chief findings with candidiasis include pustules, papules, erythema, and maceration. The patient may complain of itching and/or burning.
- **Management:** The first step is to address what is causing the moist environment and alleviate it. Healthcare providers need to ensure that ostomy effluent is not coming in contact with the peristomal skin and remaining on peristomal skin. The use of an antifungal powder should be placed on the affected area. Skin prep is used to obtain a proper pouch seal.
- **Patient Education:** Patient should be instructed to change pouch as soon as leaking is identified. Teaching should be done to ensure that peirstomal skin is fully cleansed and dried and excess antifungal powder is brushed off prior to application of skin prep and pouch.

(Colwell, Goldberg, & Carmel, 2004)

Mucosal Transplantation
Mucosal transplantation is the transplantation of viable intestinal mucosa along the suture line onto the peristomal skin. This occurs at the time of stoma formation. The sutures used to mature stoma are placed through the peristomal skin rather than the dermis.

- **Presentation:** Intestinal mucosa is present around the peristomal area. The mucosal tissue remains moist and can interfere with the pouch seal.
- **Management:** The only effective treatment of this area of transplantation is excision. This can mean stoma revision.
- **Patient Education:** The patient should be instructed that attempts to try and heal this tissue using skin barrier powders or to cauterize the tissue will not alleviate mucosal transplantation.

(Colwell, Goldberg, & Carmel, 2004)
List of Peristoma Complications

**Suture Granulomas**
Suture granulation tissue occurs at the stoma-skin base in areas of retained suture material.
- **Presentation:** Red, friable tissue found scattered around where the stoma and the skin meet. Areas are usually small and have a round shape. These areas bleed very easily and can be painful.
- **Management:** Each granuloma should be assessed for suture material and if present the suture material should be removed if possible. Silver nitrate is often used to decrease the amount of granulation tissue.
- **Patient Education:** The patient should be educated on using a pouch that is not rigid. These granulomas bleed easily and a rigid pouch or a two piece pouch may cause too much pressure or friction over the suture granulomas.

(Colwell, Goldberg, & Carmel, 2004)

**Peristomal Allergic Contact Dermatitis**
Peristomal allergic contact dermatitis is the hypersensitivity to chemical elements resulting in an inflammatory reaction. It is an immunologic response to an allergen.
- **Presentation:** Vesicles, bullae, papules, plaques, and wheals are presented around the stoma. Erythema and pruritus is involved in the affected area. The affected area is typically a mirror image of the flange size and shape.
- **Management:** The healthcare provider will need to determine what is causing the dermatitis. The offending product is identified and discontinued. The use of patch testing can confirm the offending product. The treatment for the peristomal allergic contact dermatitis is the use of anti-inflammatory creams to the affected area.
- **Patient Education:** The patient must be educated on the importance of allowing the anti-inflammatory creams to fully dry on the skin before application of the pouching system. This will allow the patient to ensure a tight seal.

(Colwell, Goldberg, & Carmel, 2004)
List of Peristoma Complications

Peristomal Irritant Contact Dermatitis
Peristomal irritant contact dermatitis is skin damage resulting from contact with fecal or urinary drainage or chemical irritants. Effluent contact damage occurs mainly in the ileostomy patient, poorly fitting appliances, and stomas that are retracted and empty below skin level. Effluent can produce severe skin breakdown and is characterized by severely denuded skin (Doughty & Landmann, 2013).

- **Presentation:** The epidermis is eroded and the patient will complain of pain and/or burning to that area. The area affected initially is erythematous; however, can quickly progress to denudement if exposure continues.
- **Management:** The damage to the skin can result from an inadequate pouch to skin seal. This will allow for urine or stool to sit on the skin for a prolonged period of time. The inadequate seal can be caused by many variables (as aforementioned in the pouching principles section). In these patients, the use of cleansers, soaps, and skin barriers will need to be evaluated since correction of the skin exposure to the irritant element needs to be addressed first. Identifying and eliminating the offending element will allow the skin to heal. The denuded skin must be treated to decrease the inflammation. Topical steroids may be used to assist with the inflammation; however, it is important to limit the use of the steroids. They should be discontinued once the affected skin has healed to prevent thinning of the epidermis. Also, peristomal skin powder may be used to absorb any excess moisture which will enhance the seal of the pouching system.
- **Patient Education:** It is imperative to educate the patient on the importance of changing the pouch as soon as a pouch leak occurs. This practice will protect the peristomal skin from prolonged exposure to stool or urine.

(Cowell, et al., 2011)
List of Peristoma Complications

Pseudoverrucous Lesions
Pseudoverrucous lesions are wart-like lesions in the peristomal skin area. These lesions are often referred to as hyperplasia. They are normally found around the stoma in areas of chronic irritation from moisture.

- **Presentation:** The size and amount of lesions are related to the amount of moisture, the seal of the pouching system, and the type of moisture. The raised lesions are thickened epidermis projections. The lesions may be painful and bleeding is common.
- **Management:** The healthcare provider needs to identify why excessive moisture is sitting on the skin. Excessive moisture can be on the skin from some of the following reasons: inappropriate pouching technique, opening in skin barrier is much large than stoma circumference, and alkaline urine in a person with a urostomy. One treatment is vinegar soaks applied to the area during pouch changes. It can be beneficial in loosening and treating the encrustations.
- **Patient Education:** The patient should be educated to look at the back of the skin barrier to see if erosion has occurred. If the skin barrier is beginning to erode than wear time of the pouch should be shortened. The patient should measure their stoma weekly to assess for decrease in bowel edema. The stoma will shrink in size for the first eight weeks postoperatively. The size of the opening in the skin barrier must be adjusted weekly to accommodate the smaller stoma size.

(Cowell, et al., 2011)

Folliculitis
Folliculitis is the inflammation of the hair follicle.

- **Presentation:** Pustules are present around the hair follicle that progresses to papules then to crusted areas. This usually occurs after shaving, from friction, or sometimes even from occlusion from the pouch.
- **Management:** Important that the healthcare provider identifies the cause and addresses it. The patient may need to decrease the frequency of shaving and/or using an electric razor to prevent traumatic removal of the hair. Also, a gentle adhesive removal can assist with pouch removal without traumatically pulling out hair.
- **Patient Education:** The patient should be cautioned when using a straight edge razor. These razors traumatically remove hair from the skin surface and may cause folliculitis.

(Colwell, Goldberg, & Carmel, 2004)
List of Peristoma Complications

Peristomal Trauma
Trauma to the peristomal skin can be caused by incorrect pouch removal, abrasive cleaning techniques, and pressure and friction from ill-fitting pouches.

- Presentation: The affected skin is tender, moist, and may have some bleeding. Lesions from the trauma are usually irregular-shaped and shallow.
- Management: The healthcare provider should instruct the patient to perform the entire pouch change procedure in front of the ostomy nurse or practitioner to review technique.
- Patient Education: Patient education should focus on correct removal of pouch and correct cleansing techniques. The scrubbing and/or picking of residue glues or adhesives is not recommended.

(Colwell, Goldberg, & Carmel, 2004)

Peristomal Pyoderma Gangrenosum (PPG)
Peristomal pyoderma gangrenosum is a rare occurrence where there is an ulcerated area on the peristomal skin. This ulceration is from unknown etiology.

- Presentation: PPG begins as pustules that break open to full thickness ulcers with irregular, ragged margins. The surrounding skin becomes red/purple and the entire area is painful. There is no diagnostic test to confirm. A biopsy only serves to exclude other causes.
- Management: The focus is to decrease the inflammatory process and obtain a seal for a acceptable amount of time. Patients with PPG should be screened for active inflammatory bowel disease.
- Patient Education: The patient should be educated on basic wound care principles when caring for PPG. The importance of moist wound healing, maintenance of a clean wound bed, the application of topical anti-inflammatory preparations and achieving a predictable pouching seal for at least 24 hours is the goal.

(Cowell, et al., 2011)
Test Yourself

What is the hypersensitivity to chemical elements resulting in an inflammatory reaction? It is an immunologic response to an allergen.

A. Folliculitis
B. Pseudoverrucous Lesions
C. Peristomal Allergic Contact Dermatitis
D. Peristomal Irritant Contact Dermatitis

The correct answer is C. Peristomal allergic contact dermatitis is an immunologic response to an allergen (caused by exposure to chemical elements).
Postoperative Ostomy Education

During the postoperative period, the ostomy nurse will need to review the following with the patient:

1. Discussion of anatomy and physiology of the GI tract.
   - Pictures and flip charts are helpful for the patient.

2. Technical aspects of ostomy management with demonstration. The ostomy nurse will need to see return demonstration of ostomy management. This will include:
   - Pouching system removal and application.
   - Pouch emptying and correct technique when using pouch closure.
     - The first educational sessions should be short and lessons taught in small steps to lessen the patient’s anxiety and maximize the session’s usefulness. The teaching session is often the moment when the patient finally faces the reality of the stoma and can be extremely upsetting to the patient.

3. The nurse should review peristomal skin care including:
   - Cleansing of peristomal skin with plain soap and water (soap is not always needed).
   - Sterile equipment is not necessary.
   - Careful inspection of the peristomal skin is performed with each pouch change.
   - Skin irritation must be noted and addressed immediately.
   - Hair needs to be removed using electric razor to avoid traumatic hair removal and folliculitis.

4. The ostomy nurse will review the ostomy accessories needed including:
   - Skin sealants
   - Pastes and strips
   - Ostomy belts
   - Deodorants

5. The ostomy nurse will review proper nutrition including:
   - Patient should be given a list of foods that cause odor, thicken stool, loosen stool, cause gas, and foods that may cause a bowel blockage.
   - Fluid intake recommendations eight glasses of liquids (eight ounces each) per day.
   - Eat a low-fiber diet for six weeks after surgery.
   - Eat small, frequent meals up to 5-6 times a day.
   - Eat slowly and chew food well.
   - Avoid drinking liquids through a straw and chewing gum, to decrease intestinal air.
   - Beverages that contain caffeine can lead to dehydration if taken in excess.

6. Medication review will need to be done with the patient including:
   - Many factors influence how well a medication is absorbed within the normal gastrointestinal tract; however, the most important factor is the length of bowel available for drug absorption.
   - Review with the patient that new medications will need to be reviewed with MD especially antidiarrheal agents, antibiotics, antacids, laxative agents, and anti-flatulents.
   - Patient should be counseled to monitor for signs of drug mal-absorption by checking the pouch for remnants of the drug.
Postoperative Ostomy Education

7. Clothing:
   – Majority of people with ostomies are able to wear the same style of clothing as prior to surgery.
   – If pouch is above waistline, the person is counseled to not tuck in clothing.
   – Snug-fitting underclothes will flatten the pouch. This will allow the effluent to be distributed equally in the pouch and help to provide a flat contour.

8. The ostomy nurse should review body image perception.
   – Patients often see themselves as not being a complete person.

9. The ostomy nurse should educate the patient on the psychological aspects.
   – Commonly patients worry about not feeling in control of their body. They worry about the general impact of the stoma on life and whether other people will hear or smell the stoma. Many times, patients with ostomies worry about it interfering with intimacy and sexual function. They also worry about being able to deal with the management of the stoma care.
   – Teach the patient and family to watch for signs of depression, anxiety, and grief.

10. Discuss with the patient about social and recreation influences from the ostomy or stoma.
    – Bathing or showering can be done with or without pouch.
    – It is important to dry the pouch thoroughly especially around the area of the skin barrier if showering with the pouch on to avoid fungal rashes.
    – A key precaution: no matter what the activity is (work or play) always keep a spare pouching system on hand.

11. Review with the patient the common complications/troubleshooting.
    – Skin concerns
    – Pouch leaking concerns
    – Signs and symptoms to report to MD

12. Discuss with the patients their thoughts on their interpersonal relationships. Review the steps that can be done to help with intimacy/sexual issues. Some tips include:
    – Before engaging in sexual activity, the pouch should be empty and the seal checked for security.
    – There are clothing options available such as pouch covers and underwear that mask or cover the pouch; even mini pouches to increase the comfort level of the person with a stoma.
    – Generally sexual activity will not be harmful to the stoma.
    – Sexual functioning may be altered due to surgery or treatments and should be discussed with the physician.

Ostomy Guidelines Task Force (2010)
Postoperative Ostomy Education

Common Intestinal Reactions to Certain Foods
- Gas: Beans, beer, broccoli, brussels sprouts, cabbage, carbonated beverages, cauliflower, onions
- Incomplete digestion: Apple peels, cabbage, celery, coconut, corn, dried fruit, mushrooms, nuts, pineapple, popcorn, seeds, skins from fruits and vegetables
- Thickened stool: Applesauce, bananas, cheese, pasta, rice, peanut butter (creamy), potato (without skin), tapioca
- Thinned stool: Fried foods, grape juice, high-sugar foods, prune juice, spicy foods
- Increased odor: Alcohol, asparagus, eggs, fish, garlic, onions
- Reduced odor: Buttermilk, cranberry juice, parsley, yogurt

(United Ostomy Associations of America, 2013)

Controlling Urine Odor
- Increases odor: Asparagus, fish, garlic, onions
- Decreases odor: 8-10 glasses of water, cranberry juice, or other non-caffeinated beverages daily

(United Ostomy Associations of America, 2013)
Postoperative Tasks to Instruct the Patient and Have Patient Return Demonstration

The following procedures that should be taught to the patient about their colostomy will be reviewed:

1. Irrigating a colostomy
2. End colostomy irrigation procedure

Colostomy Irrigation

When stool is solid, the ostomy sometimes requires instillation of fluid to promote elimination. Colostomy irrigation involves instilling solution through the stoma into the colon.

Why irrigate? The purpose of irrigation is to remove formed stool. Sometimes irrigation also helps to regulate the bowel movements. When bowel movements become predictable in a sigmoid colostomy, some patients do not wear an appliance.

Note! • The process of irrigating an ostomy is similar to administering an enema.
End Colostomy Irrigation Procedure

For best result, irrigation of a colostomy should be done at the same time each day or every other day.

- **Gather supplies:**
  - Irrigation bag, tubing, cone tip (allows for safe instillation of water into stoma), irrigation sleeve, clip for bottom of sleeve, and lubricant for cone tip.
- **Fill irrigation bag with lukewarm tap water and hang bag at shoulder height. Prime tubing to expel any air. Amount of tap water to be instilled is recommended by MD (typically between 500-1000cc).**
- Patient sits on toilet and applies the irrigation sleeve to the skin barrier and places the end of the sleeve in the toilet to drain.
- The cone tip is lubricated and inserted into stoma through the top of the irrigation sleeve.
- The clamp is slowly opened and the tap water is allowed to flow in slowly into the colon. The cone tip may need to be repositioned against the bowel lumen if the fluid is not instilling into the colon.
- Once the prescribed amount of fluid is instilled the abdomen may feel distended.
- The cone is removed and the fluid and stool is allowed to drain out of the stoma into the sleeve then toilet.
- There may be a quiet period for approximately 10-15 minutes until further evacuation occurs.
- The irrigation sleeve, bag, and cone are rinsed and appropriately stored.

(Colwell, Goldberg, & Carmel, 2004)
Role of the Ostomy RN

The role of the ostomy nurses varies according to the different healthcare settings the nurse practices in.

The ostomy nurse specialist may assume the roles of clinician, educator, and/or consultant.

- In the acute care setting the role of the ostomy nurse will consist mainly of carrying a caseload of patients with ostomies and providing care and education throughout the acute care setting and following the patient through to the outpatient clinic setting.
- In the long-term care setting the ostomy nurse may find themselves focusing on education and caring for patients with dementia, physical conditions impacting the patients' care, and even patients that have an ostomy for many years however are now dealing with many other comorbidities.
- In the home health setting the ostomy nurse will focus on providing care and support to the patient that will move the patient towards independent ostomy management.

Whether in the acute care setting, long term setting or even in the home care arena, the ostomy nurse’s unique skill set and knowledge base focuses on:

- Evaluating and recommending pouching systems that provide containment and security for individual ostomates.
- Develop individual rehabilitation plans that help patients return to a productive lifestyle.
- Assist in selecting preoperative stoma sites to ensure postoperative independence.
- Offer patients and families education and care.
- Consult with patients on a range of issues important to them.

(Colwell, Goldberg, & Carmel, 2004)
Resources

Crohn’s & Colitis Foundation of America (CCFA)
The Crohn's and Colitis Foundation of America (CCFA) is a non-profit, volunteer-driven organization dedicated to finding the cures for Crohn's disease and ulcerative colitis.

Contact:
www.ccfa.org
800-932-2423
386 Park Avenue South, 17th Floor
New York, NY 10016

Gastrointestinal Society: Bad Gut
As the Canadian leader in providing trusted, evidence-based information on all areas of the gastrointestinal tract, the GI Society is committed to improving the lives of people with GI and liver conditions, supporting research, advocating for appropriate patient access to healthcare, and promoting gastrointestinal and liver health.

Contact:
www.badgut.org/
866-600-4875
855 West 12th Avenue
Vancouver, British Columbia V5Z 1M9

National Digestive Diseases Information Clearinghouse (NDDIC)
NDDIC was established in 1980 to increase knowledge and understanding about digestive diseases among people with these conditions and their families, health care professionals, and the general public. To carry out this mission, NDDIC works closely with a coordinating panel of representatives from Federal agencies, voluntary organizations on the national level, and professional groups to identify and respond to informational needs about digestive diseases.

Contact:
http://www.digestive.niddk.nih.gov
800-891-3570
2 Information Way
Bethesda, MA 20892-3570
Resources

Ostomy Association of Boston
The Ostomy Association of Boston (OAB) is proud to present the Ostomy Resource Guide (ORG) as a tool to help you learn about and cope with your ostomy or continent reservoir. The OAB sponsors a Visitors Program, The Bulletin (a quarterly publication), educational programs and member meetings in ten locations around Boston. With over 450 members, we are well poised to provide soon-to-be, or new, ostomates with support, information, education and friendship prior to surgery, through the initial recuperation period and for many years to come. As a part of the United Ostomy Association (UOA), OAB is able to provide access not only to local resources, but to those on a national level as well.

Contact:
www.bostonoab.org/
508-270-4656
30 Speen Street
Framingham, MA 01701

United Ostomy Associations of America, Inc. (UOAA)
National network for bowel and urinary diversion support groups in the United States. Its goal is to provide a nonprofit association that will serve to unify and strengthen its member support groups, which are organized for the benefit of people who have, or will have intestinal or urinary diversions and their caregivers.

Contact:
www.ostomy.org/
800-826-0826
P.O. Box 512
Northfield, MN 55057-0512
References


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