

## Stoma Complication And Nursing Management

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### Abstract

**Introduction-** A stoma is a surgical Exteriorization of the bowel for diversion of the fecal material, it may be temporary or permanent, depending upon the patient's disease condition. it is a common procedure for the short-term or long-term management of benign and cancer surgery. End colostomy and loop colostomy are two different types of colostomy. In End colostomy, parts of the large bowel (colon) or rectum are removed, and the remaining large bowel is brought to the surface of the abdomen to form a stoma, it may be temporary or permanent. In Loop colostomy, the bowel is lifted above skin level and held in place with a stoma rod. This article focuses on the early and late complications. Early complications occur within 30 days of surgery; late complications occur after 30 days. Early postoperative stoma complication is skin irritation, leakage, bleeding, necrosis, mucocutaneous separation, fluid and electrolyte imbalances, and retraction. Late stoma complication stoma prolapse, para-stomal hernia, and stenosis. **Role and responsibility of nurses-** The nurses working in oncology center plays a key role in assessment and management of complication either by a medical condition or surgical procedure such as stoma, ICD, and breast surgeries. It has been seen that many types of stoma complications can affect a patient's psychological health after surgery, and site selection has been associated with fewer ostomy-related complications (eg, leakage, dermatitis). Nurses should Prepare the Patient for Stoma Surgery and explain the pros and cons of stoma surgery. Clear all questions asked by patients before surgery. Prepare the patient for adaption to new patterns of life after

stoma. **Conclusion** Stoma formation is performed for diversion of fecal or urinary materials, it may be planned or emergent. It may cause complications postoperatively. The necessity for a surgical revision could be avoided by paying close attention to the many technical elements that play a key role in delivering and maintaining a healthy stoma. The patient's surgical outcome and long-term quality of life are affected by surgical skill, unexpected intraoperative complications, anatomical difficulties, and comorbidities, and post-operative stoma care at the stoma clinic as well as home. Nurses working in stoma care clinic, as well as oncology center, plays a unique role for maintaining an ideal stoma site and secure pouching seal. Nurses should aware of complications caused postoperatively, and should be competent to manage them.

### Introduction -

A stoma is an opening on the abdomen which may be connected to either the digestive system or urinary system to allow waste (urine or feces) to be diverted out of your body. A stoma is a surgical Exteriorization of the bowel for diversion of the fecal matter or urine, depending on the type it can be fecal stoma or urinary stoma. A urinary stoma is also called urostomy. Fecal stoma, the common one, it can be ileostomy or a colostomy, depending on how the surgeon exteriorizes the bowel it can be loop stoma or end stoma, also it may be temporary or permanent, depending upon the disease condition of the patient. Temporary stomas are made mainly in surgical emergencies like in fecal peritonitis or when diverting the stool to cover anastomosis which is distal to the rectum, so loop ileostomy is done to cover an anastomosis in the rectum. In temporary stoma, it may be closed after 4-6 weeks once the patient's condition is stabilized. A permanent stoma is indicated in a patient who has a disease condition usually a cancer, like an abdominal perineal resection where part of the rectum is removed and a permanent stoma is made where the patients stay their life with a stoma. The stoma can be a loop stoma or end stoma, In a Loop stoma, a loop of bowel is exteriorized and the stoma has two openings one distal and other proximal ends. In the end stoma, the end of bowel loops is brought out and it has a single opening. Depending on part of the bowel which is exteriorized stoma can be urostomy or colostomy.

**Table 1 Complication of Stoma**

Complications	Early complications	Late complications
<b>Occurrence</b>	Occur within 30 days of surgery.	Occur after 30 days of surgery
<b>Complications</b>	Skin irritation, leakage, bleeding, necrosis, mucocutaneous separation, fluid and electrolyte imbalances, and retraction	Stoma prolapse, para-stomal hernia, and stenosis
<b>Incidence</b>	55% of patients with a stoma have skin irritation followed by 40% leakage, 20% superficial necrosis, 14% bleeding, and 9% stoma retraction (1)	The incidence of late stoma complications is prolapse (16.4%), and para-stomal hernia (9.6%) (2).
<b>Management</b>	Managed by applying barrier cream, proper application, and fixation bags	Needs much medical attention to reduce the future worsening of the condition.

### Types of Surgical stoma

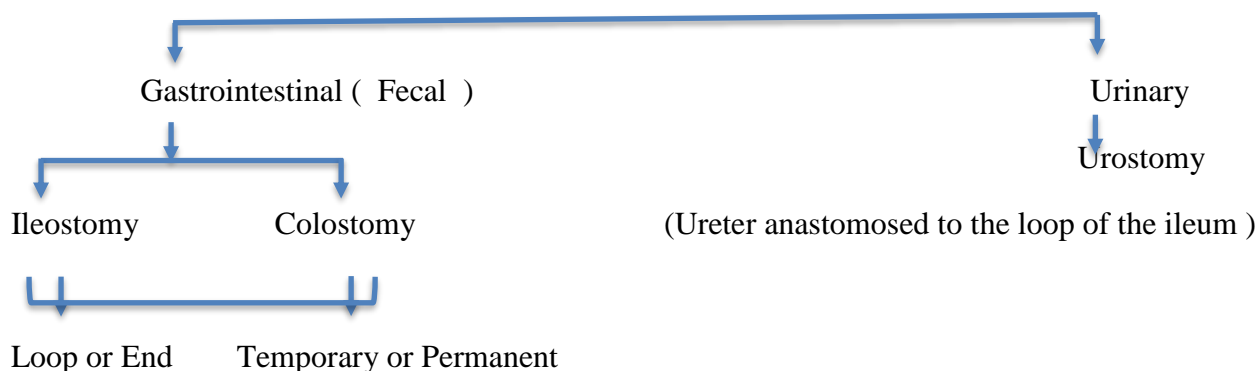


Figure 1 types of stoma

**Stoma necrosis** is a more early complication of the postoperative period. Stoma necrosis rate is higher in obese patients. The causes of stoma necrosis are poor vascularity and poor handling, excessive stripping of adipose tissue, mesenteric tension, and excessive suturing due to narrow space, resulting in severe tissue necrosis. Mucosa turns pale to purple than black in color.



Figure 2 Stoma necrosis

The degree of necrosis can be assessed by gently passing a small, lubricated glass tube into the stoma and examining the mucosa with a penlight (9). Superficial necrotic mucosa usually sloughs off as the stoma is cleaned, revealing pink, healthy tissue. Surgical excision of the necrotic tissue may be required if the ischemic damage is more than 2-cm deep, the pouching appliance must be fitted carefully making sure it is not too tight and that blood flow to the stoma is not impaired since necrosis can result in permanent scarring of the stoma.<sup>14</sup> Debridement of the necrotic area can define the extension and deepness of necrosis. If the process compromises the whole intestinal wall or extends beyond the aponeurotic plan, surgical intervention is indicated through the stoma opening or through the main surgical wound if a laparotomy had been performed. The use of a two-piece pouch facilitates the daily

observation of the stoma with no need for withdrawal of the skin attached piece. Postoperative nursing intervention help to prevent the potential impairment of a good blood supply to the stoma.

**Skin irritation** is a common problem that is caused by the adhesive on ostomy appliances (3). Skin Irritation around Stoma is usually caused by leakage from the ostomy pouch and the output from the stoma getting underneath the adhesive and onto the skin. The skin irritation should be managed by removing the adhesive and checking for any sign of feces or urine contamination that is irritating. Check the proper fitting of a pouch around the stoma and check for exposure of skin to the output from the stoma due to poor fitting. Assess the diameter and shape of the stoma to check the right size and shape. Use a barrier, adjust the hole in the adhesive so that it exactly fits the diameter and shape. Document the condition and nursing intervention given to patients.

### **Fluid and electrolyte Imbalance**

Fluid and electrolyte imbalance is more common with high output stoma like ileostomy. A newly constructed ileostomy usually works normally and produces 1200 ml (500-2000 mL/day) watery stool in a day. When it produces more than normal it is called high stoma output, it occurs in 16% of patients. The causative factor is partial obstruction of proximal stoma, intraabdominal sepsis, prokinetic drugs sudden withdrawal of steroids or opiates, and enteritis with *Clostridium difficile* infection. Educate the ileostomy patients and patients with ascending colostomies for adequate daily fluid intake.

**Stomal bleeding** Major bleeding from the stoma is uncommon and usually, it may be caused by either a stomal laceration from a poorly fitting appliance or the presence of peristomal varices in the patient with portal hypertension. Minor bleeding from the stoma may occur after a few days of surgery associated with the creation of the stoma, or later with overly vigorous stomal cleansing. The primary intervention for stomal bleeding includes direct pressure and local cauterization or suturing of the bleeding vessel. Peristomal varices are generally found in patients who underwent a colectomy for ulcerative colitis. Peristomal varices may also develop in patients who have portal hypertension.



Figure 3 Stomal bleeding

**Mucocutaneous separation** occurs when a stoma completely or partially separates/detaches from the skin (5). It results in leakage and skin irritation and may be superficial or deep. It may occur in 12 to 24 percent of patients early in the postoperative period.

Risk factors for mucocutaneous separation are abdominal radiation, Diabetes, Smoking, Corticosteroid use, Infection and malnutrition, Irritable bowel disease, Chemotherapy, Fecal contamination at the suture line, Excessive tension on the suture line, stoma at convexity.



Figure 4 Mucocutaneous separation

Mucocutaneous separation can be partial or circumferential, Circumferential separation of the stoma should be revised immediately. For less severe separations, the defect may be filled with absorptive material, such as calcium alginate, skin barrier powder, paste, or Hydrofiber. The stoma nurse should assess for the presence of pain, fistula, amount of drainage from the site. Flush the separated area with normal saline, tap water, or a noncytotoxic wound cleanser. Fill the separation with a product to absorb drainage and provide an environment for healing. Product selection is done based on the depth and amount of drainage. When the defect is filled, pouching systems are applied over the separation, exposing only the stoma. The use of a two-piece system with an easy-to-remove pouch is recommended to facilitate patient comfort during pouch removal and reapplication. The pouching system should be changed frequently to provide wound care to the separation

**Stoma stenosis** - Stoma stenosis is defined as a narrowing of the stomal opening. It may occur at the level of fascia or skin. Stomal stenosis may occur early in the postoperative period. The common causes of stoma stenosis are excessive tension on stoma by inadequate excision of the skin during stoma creation, inadequate suturing of the fascial layer, and recurrent disease, etc. Stoma stenosis is assessed by clinical examination, It is done by inserting a well-lubricated little finger in the stoma and assessment of fascial and skin mobility. The Stoma opening appears small. If the clinical examination is not possible due to the severe stenosis, a well-lubricated small catheter is used and performed a retrograde contrast study. Symptoms of stoma stenosis include pain on defecation, difficulty in passing stool, cramps, and ribbon-like stool. Management of stoma stenosis is included good stoma care with the use of a secure stoma pouch to prevent leakage of the stoma and to prevent skin breakdown of parastomal skin. The secure pouch system ensures that fecal or urinary drainage does not come into the contact with parastomal skin. Adequate fluid intake is advised by the stoma nurse to soften the fecal material. Patients are encouraged to take a low residual diet. Laxative can be helpful to the patient



for loose stool. Dilation of stoma twice daily may help. In severe stoma stenosis surgery to is indicated refashion the stoma.



Figure 5 Stoma stenosis

**Parastomal hernia** In a parastomal hernia we can see a bulge under the skin. In parastomal hernia, bowel loop passed through the fascia opening and muscles and bowel protruding into the subcutaneous tissue around the stoma (3). It can be partial or circumferential and varies in size. When the patient is lying down, the bulge may reduce in size and may increase when the patient stands or sits. A parastomal hernia is assessed by patient history and the assessment of abdominal pain, bowel obstruction, and difficulty in colostomy irrigation. Parastomal hernia commonly occurs after months to years after surgery because of an inadequate fixation with the facial layer. The parastomal hernia may be associated with prolapsed stoma and recurrence.



Figure 6 Parastomal hernia

**Risk Factors** -A risk factor in parastomal hernia is obesity, older age, weakness of abdominal muscles, location of stoma formation outside of muscles.

Management of parastomal hernia involves assessing the parastomal site skin, changing the size of the stoma pouch, and adjusting the size and shape of the opening. A two-piece stoma pouch is better than a single-piece pouch. A convexity pouch should be avoided, it is recommended to use an abdominal support belt while doing heavy work. A cone-tipped irrigator should be used to reduce the risk of any

perforation (4). Colostomy irrigation is contraindicated in a para-stomal hernia (5). Surgical intervention is required in a case with bowel obstruction.

**Stoma retraction** - Stoma retraction occurs when a stoma is slightly below the skin level than in a normal position. In a normal position, the stoma is slightly above. Stoma retractions are common in ileostomy because of the poor surgical stoma construction and there is inadequate bowel mobilization and the stoma is not fixed with the fascial layer. Stoma retraction occurs after stoma creation in 1-6% of cases (6). In severe stoma retraction, surgery is required, and a new stoma is refashioned.

**Risk Factors** The risk factor of stoma retraction is obesity, poor fixation of the bowel with the fascial layer, short mesentery.

Management of stoma retraction by nurses includes encouraging patients to maintain an ideal weight to avoid stoma retraction, assessing the stoma pouch pressure, avoiding convexity pouch or belt to reduce pressure on the stoma site. The skin barrier film may help with the fecal soiling of the skin. Educating patients on skincare is of paramount importance.

**Stoma prolapse** - Stoma prolapse is defined as the protrusion of the full-thickness bowel from the stoma. The risk of stoma prolapse is higher in a transverse colostomy, but stoma prolapse may be seen in any stoma (7).



Figure 7 Stoma prolapse

**Risk Factors** Causes of stoma prolapse include obesity, weakness of abdominal muscles, inadequate fixation of the bowel to the abdominal wall, chronic cough, and constipation.

Patients with stoma prolapse may present with painless prolapse, with long-standing prolapse, bowel become edematous, any trauma to stomal mucosa should be assessed and stoma pouch should be properly fitting. Apply the cold comparison 10-15 minutes. Cold compression helps in decreasing bowel edema (8). Assesses the trauma in stomal mucosa, check the stoma pouch is properly fit or not. An improper fit pouch may cause parastomal skin irritation.

Manipulation and reduction of stoma prolapse are possible treatments. A nurse or surgeon manipulates the stoma back inside the body. After the prolapse is reduced, apply the stoma belt. check the pouch system according to size, use a large pouch according to prolapse bowel length, and apply a skin barrier. Assess the color of prolapsed bowel in dark due to comprised blood circulation. In the case of bowel ischemia, the patient required immediate surgical attention. Assess any bleeding, if there is

bleeding by trauma, a gentle pressure will stop the blood flow. If bleeding has not stopped, the surgeon should be informed for further management.

**Role and responsibility of nurses-** The nurses working in oncology center plays a key role in assessment and management of complication either by a medical condition or surgical procedure such as stoma, ICD, and breast surgeries. It has been seen that many types of stoma complications can affect a patient's psychological health after surgery, and site selection has been associated with fewer ostomy-related complications (eg, leakage, dermatitis).

Enterostomal therapy nurses should have the following responsibility-

### **Preparation and Counselling**

- ❖ Nurses should Prepare the Patient for Stoma Surgery and explain the pros and cons of stoma surgery. Clear all questions asked by patients before surgery. Prepare the patient for adaption to new patterns of life after stoma.
- ❖ Educate the patients about care for the stoma independently.
- ❖ Instruct the patient to keep a stoma care kit while traveling anywhere.
- ❖ Instruct the patient for wearing loose cloth.
- ❖ Instruct the patient to wear a stoma protective apron or cover the stoma with clean plastic while bathing.
- ❖ Instruct the patient not to lift any heavy material.

### **Care at the Stoma Clinic**

- ❖ Assess stoma for the presence of pain, bleeding, mucocutaneous separation, fistula, any drainage from the site, or trauma in stomal mucosa.
- ❖ Assess the diameter and shape of the stoma to check the right size and shape.
- ❖ Remove the adhesive if skin irritation is caused by it and check for any sign of feces or urine contamination that is irritating.
- ❖ Check the proper fitting of a pouch around the stoma and check for exposure of skin to the output from the stoma due to poor fitting.
- ❖ Use a barrier cream, adjust the hole in the adhesive so that it exactly fits the diameter and shape. Document the condition and management given to patients.
- ❖ Apply direct pressure if stomal bleeding occurs and inform the surgery team if bleeding has not stopped for further management.
- ❖ Flush the area with normal saline, tap water, or a noncytotoxic wound cleanser if mucocutaneous separation occurs and fill the separation with a product to absorb drainage and provide an environment for healing.
- ❖ Use a two-piece system with an easy-to-remove pouch to facilitate patient comfort during pouch removal and reapplication. The pouching system should be changed frequently to provide wound care to the separation.
- ❖ Stoma stenosis should be managed by good stoma care with the use of a secure stoma pouch to prevent leakage of the stoma and to prevent skin breakdown of parastomal skin. The secure pouch system ensures that fecal or urinary drainage does not come into the contact with parastomal skin.



## stoma complication and nursing management

- ❖ The patient is encouraged for adequate fluid intake to soften the fecal material.
- ❖ Patients are encouraged to take a low residual diet.
- ❖ Dilation of stoma should be done twice daily in case of stoma stenosis, surgery to is indicated refashion the stoma in case of severe stoma stenosis
- ❖ A convexity pouch should be avoided and recommended to use an abdominal support belt while doing heavy work.
- ❖ Colostomy irrigation is contraindicated in a para-stomal hernia.
- ❖ Encourage patients to maintain an ideal weight to avoid stoma retraction.
- ❖ The skin barrier film may help with the fecal soiling of the skin.
- ❖ Apply the cold comparison 10-15 minutes it helps in decreasing bowel edema.
- ❖ Manipulates the stoma back inside the body in case of stoma prolapse, and apply the stoma belt.
- ❖ Assess the color of prolapsed bowel in dark due to comprised blood circulation. In the case of bowel ischemia, the patient required immediate surgical attention.

### Conclusion

Stoma formation is performed for diversion of fecal or urinary materials, it may be planned or emergent. It may cause complications postoperatively. The necessity for a surgical revision could be avoided by paying close attention to the many technical elements that play a key role in delivering and maintaining a healthy stoma. The patient's surgical outcome and long-term quality of life are affected by surgical skill, unexpected intraoperative complications, anatomical difficulties, and comorbidities, and post-operative stoma care at the stoma clinic as well as home. Nurses working in a stoma care clinic, as well as an oncology center, play a unique role in maintaining an ideal stoma site and secure pouching seal. Nurses should aware of complications caused postoperatively, and should be competent to manage them.

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