Ostomy Management

Ostomies are surgical procedures performed to bypass or remove injured or diseased segments of bowel (fecal ostomies) or bypass the bladder (urostomies).

Fecal Ostomies (Francone, 2023)
Fecal ostomies may be used to manage medical conditions such as congenital anomalies, colon obstruction, cancer, diverticulitis, trauma to the intestinal tract, or inflammatory bowel disease. These diversions are classified based on the segment used to create the ostomy (e.g., sigmoid, colon, ileum) and the manner of surgical construction (e.g., loop, end, reservoir).

- *Ileostomy:* performed when it is necessary to remove or bypass the entire colon or rectum, or to protect a distal colorectal, coloanal, or ileoanal anastomosis; it is made from the ileum and has one opening for fecal elimination.
- *Colostomy:* performed when it is necessary to bypass or remove the distal colon, rectum, or anus; it is constructed from the ascending, transverse, descending or sigmoid colon.

Urostomies
With urostomies, the normal flow of urine is diverted from the kidneys and ureters. This procedure may be used to treat bladder cancer, neurologic dysfunction of the bladder, birth defects, chronic bladder inflammation, radiation injuries, or spinal cord injury.

Patient Preparation (Francone, 2023)

Preoperative, perioperative, and postoperative care should be performed by an ostomy nurse specialist.

- Stoma site selection
    - Factors to consider:
        - Abdominal wall shape, both sitting and standing
        - Prior abdominal incisions
        - Bony prominences
        - Occupation
        - Clothing style (e.g., belt line)
        - Disabilities and physical limitations
    - Ostomy should lie on either side of the abdominal midline, lateral and inferior to the umbilicus, and preferably over the rectus abdominis muscle for support.
    - Patient should be able to visualize the stoma and access it easily; in obese patients, stoma may be located higher on the abdominal wall.
    - Ostomy should be at least 5 cm from all folds, creases, previous incisions, belt line, umbilicus, and bony prominences.
- Patient education, emotional support, and counseling (Francone, 2023)
    - To address physical, psychological, and emotional stress related to fears of social acceptance, sexuality, and cost burden, counseling should be provided by a skilled ostomy nurse specialist, an enterostomal therapy nurse, or wound ostomy continence nurse.

Pouch Systems (Landmann, 2024)

The effluent is typically drained into an external pouch system which contains effluent, curbs odor, and protects the skin.

- When selecting a system, consider:
  - Size, shape, and location of the stoma
  - Location of the stomal lumen
  - Level of stomal protrusion
  - Abdominal contour
  - Type of drainage
  - Patient preference
- One-piece systems have a barrier ring with a tape border fused to an odor-proof pouch. These are simple and often used when the stoma is in a deep crease.
- Two-piece systems have a barrier ring with a tape border and adhesive landing zone to which the patient attaches a separate odor-proof pouch. One advantage is that the pouch can be replaced without having to remove the protective skin barrier every time.
  - A closed-end pouch is removed and discarded one to three times daily.
  - A drainable pouch has a clip or self-sealing closure at the bottom and may be emptied as needed and used for several days.
  - A urostomy pouch has an anti-reflux valve that keeps urine at the bottom of the pouch.

Pouch Placement (Landmann, 2024)

Effluent drainage contains proteolytic digestive enzymes which can cause skin irritation and damage. To help the pouch adhere to the skin and minimize leakage:

- Select a pouch system that conforms to the abdominal contour.
- Cut or mold the adhesive-disk skin barrier to fit the size and shape of the stoma, leaving no more than 1/8 inch of skin showing around the stoma to minimize the amount of exposed skin.*
- Use products to help the pouch adhere (adhesive agents, skin prep), and prevent irritation and injury to the skin surrounding the stoma (skin barrier paste, skin barrier powder).
- Use barrier wafers, rings, and/or paste to protect the skin from the drainage.

**Note: stomas will change shape and size in the postoperative period, typically taking its final shape after several weeks. Pre-cut barrier rings may then be used.*

Postoperative Care (Agastya & Lieske, 2023)

- Stoma should be dark red or pink and moist
- A small amount of bleedingis normal
- Stoma may stick out slightly from the abdomen, but it may also lie flat or or just below the skin.
  - A pale stoma may indicate anemia.
  - A dark or purple-blue stoma may indicate ischemia.
- Stoma may be round, oval, or irregular, and changes may occur over the first 6 to 8 weeks.
- Stoma height above the level of the skin should be at least 2 cm for an ileostomy and urostomy, and at least 1 cm for a colostomy.

- Post-operative stomal edema may last up to 6 weeks.
- Provide postoperative education including:
    - Anatomy and function of the ostomy
        - Ileostomies produce liquid feces.
        - Ascending and transverse colostomies produce semi-formed stool.
        - Descending and sigmoid colostomies produce more solid stool.
        - Urostomies should immediately produce urine; presence of blood and mucous in the urine is normal in the immediate post-operative phase.
    - Pouch procedural training
    - Nutrition
    - Clothing options (loose fitting around the stoma)
    - Discharge medications
    - Psychological issues (grief, depression, anxiety, body image, sexual/intimacy issues)
    - Social and recreational issues
    - Interpersonal relationships
    - Common complications such as leaking and dermatitis
    - Available resources, such as support groups and on-line resources

Pouch Care (Landmann, 2024)

- Change the pouch system one to two times weekly, as needed, or with any sign of leakage, or if itching/burning around the stoma occur.
    - Carefully remove the skin barrier.
    - Wash the skin gently with warm water and washcloth (soap is not needed).
        - Avoid premoistened wipes and products containing alcohol.
        - Gently clean the peristomal skin and stoma to prevent trauma and bleeding.
    - If a skin sealant or barrier film is used, let it dry completely before applying the pouch system.
- While ostomy pouches are odor proof, odor and gas are normal when the pouch is emptied. To help mitigate odor, tell the patient to (Landmann, 2024):
    - Empty the pouch when it is 1/3 full to prevent dislodgment from the seal.
    - Clean the tail of the pouch thoroughly.
    - Use room spray or pouch deodorant.

Patients with Ileostomy (Landmann, 2024)

- Instruct the patient to increase daily fluid intake by 500 to 750 mL to prevent dehydration.
    - Average ileostomy output ranges from 500 mL to 1300 mL per day, with up to 1800 mL in early postoperative period.
    - Effluent contains large amounts of sodium and potassium.
    - Inform patient to increase oral fluid intake if experiencing high-volume output or heavy sweating.
    - Recommend water, broth, vegetable juices, and pediatric electrolyte solutions. Discourage the use of sports drinks as some may not be absorbed.

- Instruct patients on the following:
    - A proximal ileostomy may reduce absorption of vitamins, minerals, and electrolytes.
    - Avoid time-release, enteric-coated medications, and large tablets, as they may not be absorbed completely.
    - Refrain from laxative use due to the risk for dehydration.
    - Be alert for signs of fluid-electrolyte imbalance, such as dry mouth, reduced urine output, dark concentrated urine, dizziness on standing, increased fatigue, and abdominal cramping.
    - Avoid large amounts of insoluble fiber which could cause an obstruction.
    - Manage increased ileostomy output with a soluble fiber supplement which can be slowly increased up to four times daily.
    - Manage excessive and inappropriate output with antimotility agents which should be added one at a time and titrated slowly to avoid paralytic ileus or obstruction.

Patients with Colostomy (Landmann, 2024)

- Patients should be encouraged to increase fiber and fluid intake to prevent constipation.
- Inform patients that intermittent mucoid discharge is normal.
- Constipation may be managed with laxatives or irrigation. For severe constipation, digital disimpaction may be performed only by an experienced ostomy nurse or physician.
- Routine colon irrigation is only appropriate for distal colostomy patients; 500 to 1500 mL of tap water is instilled in the descending or sigmoid colon ostomy, daily or every other day, thus stimulating peristalsis causing the distal colon to empty.
- Most physical activities can be resumed, except for extreme contact sports.
- Counsel patients on resuming sexual activity. If an ostomy was placed secondary to pelvic surgery or radiation treatment, the autonomic nerves controlling sexual function may be injured.
- When traveling, patients should pack extra ostomy supplies, avoid extreme temperatures, and drink only bottled water if tap water is not safe to consume.

Complications (Landmann, 2024)

The incidence of stomal complications range from 14 to 79%. Almost half of all stomas eventually become a problem due to pouching and peristomal skin issues. Very early complications that occur within days of surgery may be related to technical issues and frequently require a return to the operating room.

Early Complications (within 3 months of surgery)

This is usually related to suboptimal stoma site selection but is heavily influenced by patient factors including age, obesity, poor nutrition, tobacco use, comorbidities, and underlying malignancy.

- Stomal necrosis
    - Characterized by dark brown to black stoma coloration.
    - Management includes observation or surgical revision.
- Stomal bleeding

    - Minor bleeding is normal in the immediate postoperative period and may result from "vigorous" stoma cleaning.
    - Management
        - Direct pressure
        - Local cauterization (cautery, silver nitrate)
        - Suture bleeding vessel, if possible.
- Stomal retraction
    - Stomal retraction refers to a stoma that is 0.5 cm or more below the skin surface within 6 weeks of surgery, often resulting from tension on the stoma.
    - Management
        - Administer local wound care.
        - Use a convex pouch system and belt or binder.
        - Surgical revision may be needed if stoma retracts below the fascia.
- Mucocutaneous separation
    - This is separation of the ostomy from the peristomal skin, often resulting in leakage and skin irritation; may be partial or circumferential.
    - Circumferential separation with retraction of the stoma requires surgical revision immediately.
    - For less severe separation, absorptive material such as calcium alginate, skin barrier powder, paste or hydrofiber can fill the defect; cover the area with a skin protective barrier.

Late Complications (3 months or more after surgery)

- Parastomal hernia may occur due to obesity, poor abdominal muscle tone, chronic cough, placement of the stoma outside of the rectus muscle, and a large fascial opening.
- Stomal prolapse is telescoping of the intestine out from the stoma, which can make pouch placement and adherence difficult. Prolonged prolapse can cause intestinal edema and may lead to constriction of the bowel lumen.
    - Uncomplicated prolapse can be managed with cool compresses and/or osmotic agents (e.g., table sugar or honey) to reduce edema, followed by manual reduction of the prolapse (by a trained health care professional) and application of a binder.
    - Complicated prolapse with ischemia or severe mucosal irritation and bleeding requires surgical intervention.
- Stomal stenosis is narrowing of the stoma opening and causes dysfunction; it's common with end-colostomies.
    - Early stenosis may be conservatively managed by gentle catheter dilation (not inflation) performed by an experienced practitioner.
    - Mild stenosis may be managed with diet modifications (e.g., avoid insoluble fiber).
    - Significant stenosis causes cramps and explosive output, and usually requires surgery.

Peristomal Skin Problems

Peristomal skin problems are more prevalent with ileostomies than colostomies.

- Mechanical trauma

  - Appear as patchy areas of irritated, denuded skin resulting from repeated removal of adhesive products and aggressive cleaning techniques.
  - Instruct patients to use plasticizing skin sealants to prevent skin damage with pouch removal, and to gently clean the peristomal skin.
  - Eliminate the causative factors, apply skin barrier powder, and then blot with a skin sealant.
- Dermatitis from peristomal skin irritation
  - May result from mechanical trauma, an allergic reaction to a pouch or adhesive product, peristomal fungal infection, or antibiotic therapy. Allergic reactions are characterized by pruritis, erythema, and/or blistering.
  - Refer patients with peristomal skin problems to an ostomy nurse specialist.
  - Treatment
    - If necessary, remeasure the stoma to ensure a proper skin barrier fit.
    - Identify and correct the causative factors.
    - Eliminate allergens.
    - Treat affected areas with skin barrier powder or antifungal powder.
    - Topical steroids may be required for severe reactions.
- Parastomal pyoderma gangrenosum (PPG)
  - Uncommon ulcerative condition seen with inflammatory bowel disease, Crohn's disease, and intraabdominal malignancy.
  - PPG may develop within weeks to years after stoma surgery.
  - PPG presents as painful, full thickness ulcers.
  - Obtain cultures from the ostomy to assess for infection.
  - Manage with systemic, intralesional, topical anti-inflammatory agents (e.g., corticosteroids and calcineurin inhibitors) or tumor necrosis factor alpha inhibitors, (e.g., infliximab and adalimumab).
  - Wound care is important; apply nonadherent dressings that absorb exudate, maintain moisture, and prevent further skin damage.
  - Surgical management may be needed for wound debridement, stoma closure or stoma relocation.

Ostomy Reversal (Francone, 2023)

Colostomy closure can occur when the underlying condition has resolved, the patient's health is fully recovered to baseline, and inflammation has subsided (can take three to six months or more.) Ileostomy closure can be performed between eight weeks and three months following the initial procedure once the anastomosis is healed. Ostomy closure is usually performed locally by freeing the stoma circumferentially from the abdominal wall and using a stapler to create a side-to-side functional end-to-end anastomosis. If this is not feasible, then a handsewn anastomosis may be performed.

References:

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