Creation of a fecal or urinary diversion is common in patients diagnosed with colon, rectal, cervical, bladder, or other pelvic malignancies. Radiation therapy (RT) is one of many options available in the cancer treatment armamentarium; therefore, it is not unusual for a patient with an ostomy to undergo RT. This partnering of surgical intervention and RT creates unique challenges for the patient and healthcare provider. Three issues associated with an ostomy are most directly affected by radiation therapy: the skin, the stomal mucosa, and gastrointestinal injury.

**Skin Care**

Radiation-induced skin reactions are caused by damage to cellular DNA. Cells exposed to lethal radiation die only when they begin their next mitotic division.1 This is the reason why irradiated cells with a high rate of mitotic division (such as the hair, mucosa, and skin) have higher rates of cell death. These skin reactions present in a variety of ways: erythema of different shapes; dry desquamation (dry, flaky, scaly skin) due to damage to the sweat and sebaceous glands; moist desquamation (blistering, peeling, and skin sloughing); or ulceration.2

Patients should be taught to take extra skin care precautions while undergoing RT. Pouching systems should provide a secure skin barrier-to-skin seal to prevent leakage of effluent onto the vulnerable peristomal skin that subsequently can cause irritant dermatitis and/or fungal skin infections. The skin should be gently and carefully cleansed with water so treatment field (port) markers are not inadvertently removed. Vigorous rubbing, heat, and shaving of the peristomal should also be avoided1 as well as other activities or actions that may cause mechanical skin damage.

Depending on the individual situation, patients may be asked to remove the pouching system during treatments.3 Modifications may be required in ostomy management (eg, switching from a one-piece to a two-piece system; closed-end to drainable). Patients undergoing RT should be instructed to bring a complete change of pouching supplies to each treatment session.

The use of topical products (lotions, creams, and deodorants) is usually discouraged. The radiation specialist should evaluate all products and medications (prescription and over-the-counter) before treatment. Ostomy supplies and skin care products that contain metallic components (belts, clips, rings, faceplates) or ingredients (such as zinc oxide which may be contained in tapes and ointments) should not be used. Questions regarding specific product components should be asked directly of the manufacturer. Some oral deodorants (such as bismuth subgallate or chlorophyllin copper complex) used by ostomates should be discontinued during radiation treatment.4

The overall goal is to keep the skin intact and moisturized. Cotton pouch covers may help absorb moisture, help keep the skin dry, and reduce friction on at-risk skin under an ostomy pouch. Among the skin care products appropriate for erythema are vitamin A and E ointment and aloe vera gels.2 The treatment goal for moist desquamation is to support epithelial recovery and avoid superinfections.2 Dry dressings should not be used on moist desquamation; however, moisture vapor-permeable dressings and hydrocolloids are recommended.2 According to the Oncology Nursing Society,7 the use of cornstarch on irradiated skin remains debatable — opinions vary from not recommending its use to recommending its use as opposed to baby powder. Some talcum powders (“dusting powder”) may contain metals such as zinc or bismuth.1

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The Stoma

When an ostomy is within or near the radiation field, not only is the peristomal skin affected but because of the rapid cell division of intestinal mucosa, the stoma also is affected. Ulceration of the stomal mucosa can occur and cause additional fluid to be released. As the exudate coagulates, the stoma has a translucent-whitish appearance that mimics Candida.1 Clinicians should ensure that the opening in the ostomy skin barrier accommodates changes in stoma size that may occur during RT (eg, edema). If diarrhea occurs, pouches may require more frequent emptying. Patients using closed-end pouches who experience this RT side effect may benefit from changing to a drainable pouch. Colostomy irrigation should be discontinued during RT1,3 to avoid potential mechanical irritation to fragile intestinal and stomal mucosa.

Cancer treatments and the disease itself can cause significant weight loss that may require changes in the ostomy management system and/or the addition of convexity. The late effects of RT may include stomal stricture or stenosis that also could necessitate changes in the pouching regimen or referral back to the surgeon.

Other Considerations

It is important to remember that patients with an ostomy undergoing RT also may be receiving (or will be receiving) chemotherapy. Therefore, the clinician must be aware of the unique side effects the particular chemotherapeutic agent may have on the stoma, intestinal function, and peristomal skin.

Diarrhea. Diarrhea frequently is a side effect of both RT and chemotherapy. For someone with an ileostomy, diarrhea can be serious if not managed properly to ensure adequate fluid and electrolyte replacement. Diarrhea plus a pouching system leaking onto fragile peristomal skin can lead to serious management problems, infection, and dehydration.

Constipation. Although constipation is not as common a side effect as diarrhea, the combination of some chemotherapeutic agents and pain medications can compound this effect. Attention to fluid balance and the use of stool softeners and laxatives for some patients may be required.

Conclusion

A patient diagnosed with cancer faces not only life-altering surgery, but also multiple unique challenges before, during, and after, cancer treatments. Clinicians can help alleviate potential problems for a cancer patient with an ostomy by understanding how these treatments affect the ostomy and ultimately, the quality of that person’s life. - GBN

References


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