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Moisture-Associated Skin Damage

Expanding Practice Based on the Newest ICD-10-CM Codes for Irritant Contact Dermatitis Associated With Digestive Secretions and Fecal or Urinary Effluent From an Abdominal Stoma or Enterocutaneous Fistula

Laurie McNichol ◆ Donna Z. Bliss ◆ Mikel Gray

ABSTRACT

Moisture-associated skin damage (MASD) occurs when skin is repeatedly exposed to various sources of bodily secretions or effluents, often leading to irritant contact dermatitis, characterized by inflammation with or without denudation of affected skin. In 2020, the Wound, Ostomy and Continence Nurses Society commissioned an initiative that led to the addition of multiple *International Classification of Diseases, Tenth Revision, Clinical Modification* codes (ICD-10-CM) for irritant contact dermatitis caused by various forms of MASD for use in the United States. In a recent issue of the *Journal of Wound, Ostomy and Continence Nursing*, a clinical practice alert identifying the various new codes was published that summarized each of the new codes and provided highlights of the descriptions for each of these codes. This is the second in a series of 2 follow-up articles providing a more detailed description of the MASD conditions to which the newest irritant contact dermatitis ICD-10-CM codes apply. Specifically, this article reviews the clinical manifestations and assessment, pathophysiology, epidemiology, prevention, and management of irritant contact dermatitis associated with digestive secretions from a stoma or fistula, and fecal or urinary effluent from an abdominal stoma or enterocutaneous fistula.

KEY WORDS: Colostomy, Digestive stoma, Enterocutaneous, Fistula, Gastrostomy, Ileal conduit, Ileostomy, Irritant contact dermatitis, Jejunostomy, Moisture-associated skin damage, Urostomy.

INTRODUCTION

Moisture-associated skin damage (MASD) occurs with exposure to various sources of moisture (bodily secretions or effluents) such as urine or fecal matter, perspiration, wound exudate, mucus, digestive secretions, respiratory secretions, or saliva.¹ In the first article in this 2-part series, Gray and colleagues² summarized the history of a roundtable discussion that identified the overarching concept of MASD and its multiple manifestations, each presentation based on the type and

chemical constitution of the moisture source (bodily secretion or effluent), and its effects on the skin. That discussion led to the publication of a series of 3 articles that reviewed clinical manifestations and the pathophysiology of MASD along with 4 prevalent forms: incontinence-associated dermatitis, intertriginous dermatitis, peristomal MASD, and periwound MASD.^{1,3,4} The third article in the series reviewed clinical manifestations and the pathophysiology of MASD focused on peristomal MASD and periwound MASD.⁴

Several authors have contributed to the understanding of peristomal and periwound MASD⁵⁻⁸; some descriptions of peristomal MASD appear in the ostomy literature. Due to the growing recognition of MASD as a significant cause of skin damage, the latest version of the World Health Organization's *International Classification of Diseases (ICD)* codes (11th edition) for the first time includes codes for various forms of MASD.⁹ However, unlike most other countries in the world, the United States ties ICD codes to reimbursement for health care and uses a Clinical Modification of ICD version 10 (ICD-10-CM). Therefore, the Wound, Ostomy and Continence Nurses Society led a group that worked with the ICD-10-CM Coordination and Maintenance Committee to develop codes for use in the United States until a move to use of the 11th edition of the ICD codes occurs.¹⁰ The original intent of this group was to achieve a code for a single form of MASD (incontinence-associated dermatitis). However, this group ultimately elected to request multiple codes recognizing multiple forms of MASD. Consistent with the original intent of the group that defined incontinence-associated dermatitis

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and distinguished it from pressure injuries or other forms of skin damage,¹¹ each of these codes is defined as a unique form of irritant contact dermatitis, and each also identifies the moisture source that leads to a particular form of MASD.²

In a recent issue of the *Journal of Wound, Ostomy and Continence Nursing*,¹² Bliss and colleagues authored a practice alert that outlined each of the codes and provided a photographic image of an exemplar for each of the various forms of MASD. The purpose of this article is to provide a more detailed description of the *ICD-10-CM* codes for irritant contact dermatitis related to digestive secretions and irritant contact dermatitis associated with effluent from a urinary or fecal ostomy or fistula.

IRRITANT CONTACT DERMATITIS RELATED TO UNSPECIFIED STOMA OR FISTULA (ICD-10-CM CODE L24.B0)

Irritant contact dermatitis due to stoma or fistula occurs when the skin experiences prolonged exposure to drainage from a stoma or fistula; this drainage may be urine, stool, or digestive secretions.^{4,8} The affected area typically begins at the stoma or fistula skin junction and extends outward. In the *ICD-10-CM* system, codes for irritant problems begin with L24 or L25, which must be distinguished from other forms of dermatitis such as allergic or radiation dermatitis. The code L24.B0 is described as irritant contact dermatitis due to stoma or fistula, unspecified. This unspecified code is intended for use when the moisture source leading to irritant contact dermatitis is unknown.

Clinical Manifestations

For MASD, irritant contact dermatitis is characterized by inflammation of the skin. The inflammation is often accompanied by skin erosion adjacent to the stoma or fistula.¹³ The location of MASD reflects areas where skin is exposed to the underlying moisture source; its borders will follow the flow of effluent from the stoma or fistula and its borders are indistinct when compared to partial- or full-thickness pressure injuries. Symptoms include burning and itching of inflamed skin.^{1,3,4} While the L24B0 code may be used for initially characterizing MASD of an unspecified source, the WOC or ostomy or wound care nurse's assessment will focus on determining the stoma type, anatomic location of the fistulous tract, character of effluent, and underlying factors leading to irritant contact dermatitis to determine a more specific diagnosis and guide treatment (Table).

IRRITANT CONTACT DERMATITIS RELATED TO DIGESTIVE STOMA OR FISTULA (ICD-10-CM CODE L24.B1)

Pathophysiology and Epidemiology

Irritant contact dermatitis due to digestive stoma or fistula occurs when the skin is exposed to secretions from the gastrointestinal tract leading to erythema and local irritation.¹² The contents of the stomach and small bowel comprising masticated food mix with a variety of gastrointestinal secretions including bile, which is rich with lipases, pancreatic enzymes containing proteases, amylase, and additional digestive enzymes. In healthy adults, gastrointestinal pH rapidly changes

from the highly acidic stomach (1.5-3.5) to a pH of approximately 6.0 in the duodenum. The pH gradually increases in the small intestine from 6 to 7.4 in the terminal ileum. The pH then drops to approximately 5.7 in the cecum, but gradually increases reaching 6.7 in the rectum.¹⁴ The pH of healthy skin is approximately 5.5. The difference between the pH of the skin and various digestive secretions is likely responsible for the irritant contact dermatitis seen in the skin adjacent to a digestive stoma or fistula.

Several studies show that transient irritant contact dermatitis around a digestive stoma is common.¹⁵ In one study nearly one-third of patients with a long-term feeding via percutaneous endoscopic gastrostomy tube developed erythema, and 9% of those required hospitalization or a visit to the clinic or emergency department.¹⁵ Irritant contact dermatitis due to leaking tubes such as gastrostomy, jejunostomy, or biliary is associated with prolonged contact of gastric contents with the skin.¹⁶ Tube movement may enlarge the opening in the skin resulting in seepage of gastric contents onto the peristomal skin; movement of a gastrostomy or jejunostomy tube is postulated to be the most frequent factor contributing to irritant contact dermatitis. Therefore, tube stabilization is a primary goal of the WOC, ostomy, or wound care nurse managing a patient with a tube (Box).

A fistula is an epithelialized passage between 2 or more epithelialized surfaces creating an abnormal communication between one body cavity or organ and another hollow organ or the skin.¹⁷ A common but major challenge in treating a wound with an enterocutaneous fistula pertains to containment of the effluent and protection of the perifistula skin.¹⁸ Once the perifistula skin becomes eroded and moist, the adherence of containment systems becomes more complex, and the predictability of their wear times less certain. This process can result in a cycle of worsening irritant contact dermatitis and an increased risk of additional complications including infection.

Clinical Manifestations





Clinical manifestations of irritant contact dermatitis due to a digestive stoma or fistula include erythema, erosion of affected skin adjacent to the stoma or fistula, partial-thickness skin loss with irregular borders, serous exudate, and sensations of itching, burning, and pain. Prolonged exposure to effluent can further erode tissue resulting in full-thickness skin loss with increased serous exudate and bleeding.

Prevention and Management

Tube movement and migration with or without enlargement of the opening in the skin is associated with leakage of gastric contents and irritant contact dermatitis. Gastrostomy tube stabilization may be accomplished by pulling up on the tube gently until the internal anchoring device (often called a bumper or balloon) is against the wall of the stomach and then by sliding the external stabilizer down to rest upon the skin without excess tension (Box).¹⁶ External stabilizing devices may be sutured to the skin; this technique of stabilization is particularly common with jejunostomy tubes. Stabilization devices must be replaced if they are displaced; noninvasive stabilization devices are commercially available. Replacing a leaking tube with a larger-diameter tube in the hopes of obtaining a better seal is contraindicated because it causes the opening to enlarge and paradoxically increases rather than prevents leakage of gastric

TABLE.

ICD-10-CM Codes for Irritant Contact Dermatitis Associated With Digestive Secretions and Fecal or Urinary Effluent From an Abdominal Stoma or Enterocutaneous Fistula

ICD-10-CM Code	ICD Code Description and Note	Indications for Use	Example
L24B0	Irritant contact dermatitis related to unspecified stoma or fistula	Signs of contact dermatitis are present but the type of stoma (surgically created opening) or fistula (abnormal opening) with which the dermatitis is associated is not specified. There may more than one stoma and/or fistula near the location of the contact dermatitis and the one associated with the contact dermatitis cannot be determined.	
L24B1	Irritant contact dermatitis related to digestive stoma or fistula	Patient has a surgically created (stoma or fistula) or abnormal opening (fistula) to the intestine on the abdomen. Signs of contact dermatitis are present around the stoma or fistula and may extend onto the abdomen.	 
L24B3	Irritant contact dermatitis related to fecal or urinary stoma or fistula	<ul style="list-style-type: none"> • Patient has a surgically created (stoma) or abnormal opening (fistula) to the intestine on the abdomen. • Signs of contact dermatitis are present around the stoma or fistula and may extend to areas on the abdomen, flank, or back. 	

Abbreviation: ICD-10-CM, International Classification of Diseases, Tenth Revision, Clinical Modification.

contents. In rare cases of persistent leakage, the tube may be removed and placed in a different site allowing the original site to close.

Meticulous skin care around gastric or jejunostomy tubes is fundamental to maintenance of healthy peristomal skin and prevention of irritant contact dermatitis. Cleansing with tepid tap water or a mild cleanser with no film residue once daily followed by a skin protectant is sufficient. Negative pressure wound therapy was once thought to be a novel approach to fistula management but is now considered an early intervention for containment and quantification of effluent as well as protection of perifistula skin and prevention of irritant contact dermatitis.^{6,17}

IRRITANT CONTACT DERMATITIS RELATED TO A FECAL OR URINARY STOMA OR FISTULA (ICD-10-CM CODE L24B3)

Irritant contact dermatitis due to a fecal or urinary stoma or fistula occurs when the skin is exposed to fecal or urinary effluent from a surgically created ostomy or a fistula connecting the bowel or urinary system to the skin or open abdomen. The likelihood and presentation of irritant contact dermatitis varies based on the characteristics of stoma or fistula effluent, its pH, and its microbiologic biome.¹ In comparison to gastrostomy or fistula effluent, the effluent from a colostomy is closer to that of a person with an intact gastrointestinal tract,

BOX.**Prevention and Management of Irritant Contact Dermatitis Associated With Digestive Secretions and Fecal or Urinary Effluent From an Abdominal Stoma or Enterocutaneous Fistula**

For ostomy

- Properly size and fit the containment device, such as an ostomy pouching system, matching the patient's body contour
- Measure the stoma and adjust the aperture of the skin barrier periodically and if changes occur such as with weight gain or loss
- Consider using compressible convex pouching systems, extended wear barriers, barriers with additives, or pouching accessories, eg, belts, barrier rings, or strips to ensure continuous contact between the skin barrier and the peristomal skin
- Secure and stabilize drainage tubes (gastrostomy, jejunostomy, and biliary) initially and for the duration of its placement, eg, may need to adjust stabilizer mechanism or use an external tube securement device
- Encourage patients with a urostomy or ileal conduit to acidify their urine with fluid or dietary intake or pharmaceuticals to lessen the risk of the crystal formation and pseudoverrucous lesions on the stoma and peristomal skin

For fistula

- Properly size and fit the containment device, such as a fistula pouching system, using accessories such as rings or strips as needed to match the patient's body contour and to create a pouching surface with continuous contact between the skin barrier and the periwound or perifistular skin
- Apply negative pressure wound therapy for containment of fistula drainage when indicated

For both ostomy and fistula

- Educate the patient about peristomal and periwound skin health, signs and symptoms of irritant contact dermatitis (redness, itching, burning, pain, or skin loss around the stoma or fistula opening), and when to seek care from a WOC nurse, wound nurse, or ostomy nurse
- Teach the patient about the need to make periodic adjustments to the ostomy pouching system or to resecure a drainage tube if leakage occurs around the device or tube
- Teach bedside care providers that leaking pouch systems should be removed promptly and periwound or peristomal skin cleansed, treated (if needed) and the pouching system reapplied rather than applying adhesive strips or tape to the periphery of the system
- Teach the patient to cleanse and dry the peristomal or perifistula skin after exposure to drainage and how to treat areas of dermatitis, eg, apply stoma powder and assess whether application of a liquid skin protectant to affected areas is indicated
- Address patient financial and reimbursement concerns related to obtaining adequate supplies

though it has a lower pH, higher water content (making it loose or watery), and it has a higher concentration of digestive enzymes than normal stool. Urinary effluent from a urostomy or vesicocutaneous fistula is similar in composition to that found in the intact urinary tract though it is more likely to be colonized with a wide variety of potentially pathogenic species than urine from an intact and noncatheterized urinary system. The pH range of urine varies from 4.6 to 8.0.¹⁹

Additional factors predisposing a person to irritant contact dermatitis related to a fecal or urinary stoma or fistula are prolonged exposure to effluent from the stoma or fistula. Leakage of stool or urine from a pouching system that is inadequately adherent or one that does not match the stoma size or body contour contributes to development of peristomal irritant contact dermatitis. People with stomas who extend their pouch change frequency for economic or other reasons are at increased risk for irritant contact dermatitis due to urine

or stool seepage through skin barriers that are no longer effective.⁷ Anecdotal reports of bedside staff unfamiliar with pouching stomas using tape to seal in the leakage rather than promptly changing a leaking pouching system over a urinary or fecal stoma are widely circulated. Alkaline urine has been shown to provoke inflammation of the peristomal skin in the absence of any other factors; therefore, the pH of urine in the patient with a urinary stoma (ie, urostomy, ileal conduit) should be kept below 7.0. The presence of crystals on a stoma and/or peristomal skin due to precipitation of salts from alkaline urine raises the likelihood of *ICD*. Pseudoverrucous lesions, also called papillomatous dermatitis, also may occur with chronic exposure to alkaline urine.²⁰ Alkaline urine can also contribute to urinary tract infections.²¹

Pathophysiology and Epidemiology

Up to 80% of individuals with an ostomy will experience peristomal skin complications (PSC) and the most prevalent is irritant contact dermatitis.^{5,7,22-24} Experts attribute peristomal irritant contact dermatitis to improperly fitting pouching systems, particularly those that are not sized appropriately for a stoma that has changed size or shape or those that do not match body contours.⁸ Other factors affecting peristomal skin health and the resistance of the skin to exposure to ostomy effluent include age, time since surgery, and ostomy type.⁷ The increased alkalinity of the skin's pH that occurs with age reduces the integrity of the ostomy skin barrier.²⁵ Studies report a higher incidence of PSC in individuals with an ileostomy compared to a colostomy but found no relationship with age and sex.^{23,26} However, older patients (≥ 65 years) were significantly more likely to have difficulty in changing their pouching system than were younger patients as were those with diabetes mellitus.²³

Clinical Manifestations

Clinical manifestations of irritant contact dermatitis due to a fecal or urinary stoma or fistula include erythema, maceration, erosion of affected skin adjacent to the stoma or fistula, serous exudate, and bothersome symptoms including itching, burning, and pain. Papillomatous dermatitis, a thickening of the peristomal epidermis that appears as warty, white, and gray lesions may exist, along with maceration and the formation of crystals with urinary stomas.²⁰

Prevention and Management

A properly sized and fitting ostomy pouching system that matches the patient's body contour, immediate and sustained tube securement, and containment of fistula effluent are primary goals for prevention and treatment of irritant contact dermatitis due to digestive stoma or fistula (Box). Education regarding how to measure the stoma and adjust the aperture of the skin barrier as well as why it is important to periodically measure and resize the aperture of the skin barrier is essential and must be reinforced to patients with new stomas.²¹ Failure to reduce the size of the aperture postoperatively or adjust the aperture with stoma changes associated with weight gain or loss is a common factor in peristomal irritant contact dermatitis. Introduction of available pouching features such as convexity or enhanced barriers with additives and use of accessories such as belts or barrier rings have been shown to improve predictability of wear time and lessen likelihood of leakage by allowing for continuous contact between the skin barrier and the peristomal skin.^{6,27} These interventions decrease the exposure of effluent to

skin and consequently the incidence of the PSC irritant contact dermatitis.²⁷ Gaps exist in nursing knowledge and confidence in changing ostomy pouching systems in all care settings.

CONCLUSION

Moisture-associated skin damage may result in multiple forms of irritant contact dermatitis. This article described the *ICD-10-CM* codes, moisture sources, clinical manifestations, epidemiology, pathophysiology, prevention, and treatment of MASD associated with digestive secretions, and fecal or urinary effluent from an abdominal stoma or enterocutaneous fistula. Incorporation of these terms into documentation, professional communication, and scholarly publications and presentations will be necessary to ensure widespread adoption of current terminology.

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