CLINICAL MANAGEMENT extra

Perineal Dermatitis Versus Pressure Ulcer: Distinguishing Characteristics

CME
CATEGORY 1
1 Credit

CE
ANCC/AACN
2.0 Contact Hours

Karen Zulkowski, DNS, RN, CWS • Associate Professor • Montana State University-Bozeman College of Nursing • Bozeman, MT

The author has disclosed that she is a recipient of grant/research funding from Goodman Group LLC, and was a consultant advisor for VA Gainesville. All staff in a position to control the content of this CME activity have disclosed that they have no financial relationship with, or financial interests in, any commercial companies pertaining to this educational activity.

Lippincott CME Institute, Inc, has identified and resolved all faculty and staff conflicts of interest regarding this educational activity.

Adapted from Zulkowski K, Ratliff C. Perineal dermatitis or pressure ulcer: how can you tell? *Nursing* 2006;36(12 Pt 1):22-3.

PURPOSE

To provide wound care practitioners with information comparing characteristics of perineal dermatitis and pressure ulcers.

TARGET AUDIENCE

This continuing education activity is intended for physicians and nurses with an interest in wound care.

OBJECTIVES

After reading this article and taking this test, the reader should be able to:

1. Discuss the prevalence, etiology, characteristics, prevention, and treatment of perineal dermatitis.

2. Describe pressure ulcer pathophysiology and staging.

ADV SKIN WOUND CARE 2008;21:382-8; quiz 389-90.

Distinguishing between various skin conditions can be a difficult task, even for a skin and wound care expert. If clinicians do not correctly diagnose a skin problem, this may result in delayed or unnecessary treatment for the patient. For example, it is difficult to determine if the redness observed on a patient's buttocks is perineal dermatitis (moisture-associated skin damage) or a Stage I pressure ulcer. Both may present as an area of redness, often in the folds of the buttocks and even extending to the coccyx. Both usually occur in very ill patients who are at high risk for ulcer development.

To complicate the situation, the presence of moisture that leads to perineal dermatitis may increase the risk for friction- and shear-related skin breakdown. Consequently, clinicians may need to treat one problem separately or,

Figure 1.
PERINEAL DERMATITIS

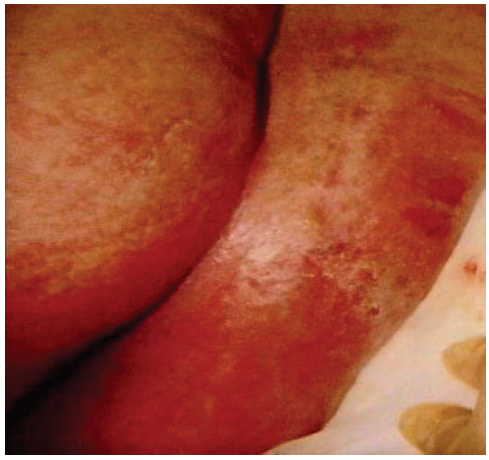


Photo courtesy of Catherine Ratliff, PhD, APRN,BC, CWOCN.

in most cases, treat both problems simultaneously (Figures 1 and 2).

PERINEAL DERMATITIS

Data presented in the literature indicate that prevalence estimates for perineal dermatitis range from 5.7% in nursing home patients to 27% in hospitalized patients.[1,2] In a study of nursing home patients who were identified with perineal dermatitis, 73% were incontinent of urine, stool, or both.[3] Consequently, incontinent patients need to be monitored closely, especially if they wear a pad or containment brief that holds the moisture against their skin. This moisture raises the surface temperature and humidity and contributes to maceration.

Called diaper rash in infants, dermatitis results when there is damage to the epidermal barrier layer of the skin allowing the effluent (urine and/or stool) and bacteria to penetrate beneath this skin surface. Perineal dermatitis presents as a diffuse area of erythema, and there may be scaling of the skin with papule and vesicle formation. These vesicles may open with associated ''weeping'' of the tissue and more continued skin damage. Prevention includes elimination of excessive hydration (maceration), minimizing the interaction of urine and feces and micro-organisms, and maintenance of the skin's slightly acidic pH mantel.[4]

Types of perineal dermatitis that may be seen in the incontinent population are irritant-associated dermatitis and allergic contact dermatitis. Secondary infections of the irritated skin may be caused by fungus or bacteria. Partial-thickness skin loss caused by maceration of the skin and friction may occur with either type of dermatitis (Figure 1).

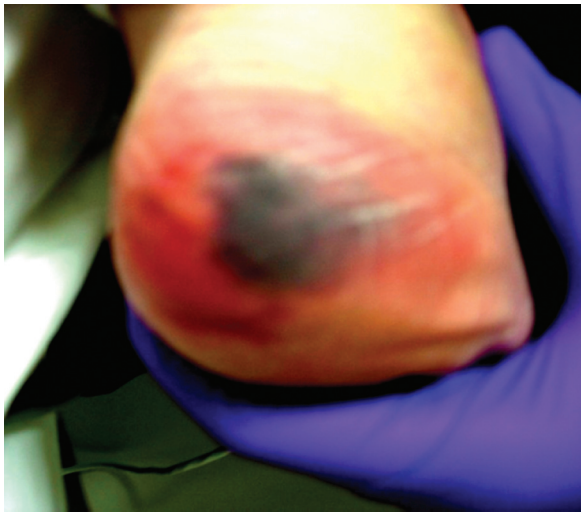
Irritant-associated dermatitis is an inflammatory process caused by damage to the water-protein-lipid matrix of the skin by prolonged contact with the effluent. The exact mechanism of action is not completely understood. It is thought that the inflammatory response causes the release of inflammatory cytokines, which increases the

Figure 2.
STAGE I PRESSURE ULCER

Photo courtesy Sharon Baranoski, MSN, RN, CWOCN, APN, DAPWCA, FAAN.

Figure 3.
STAGE II PRESSURE ULCER

Figure 4.
DEEP TISSUE INJURY

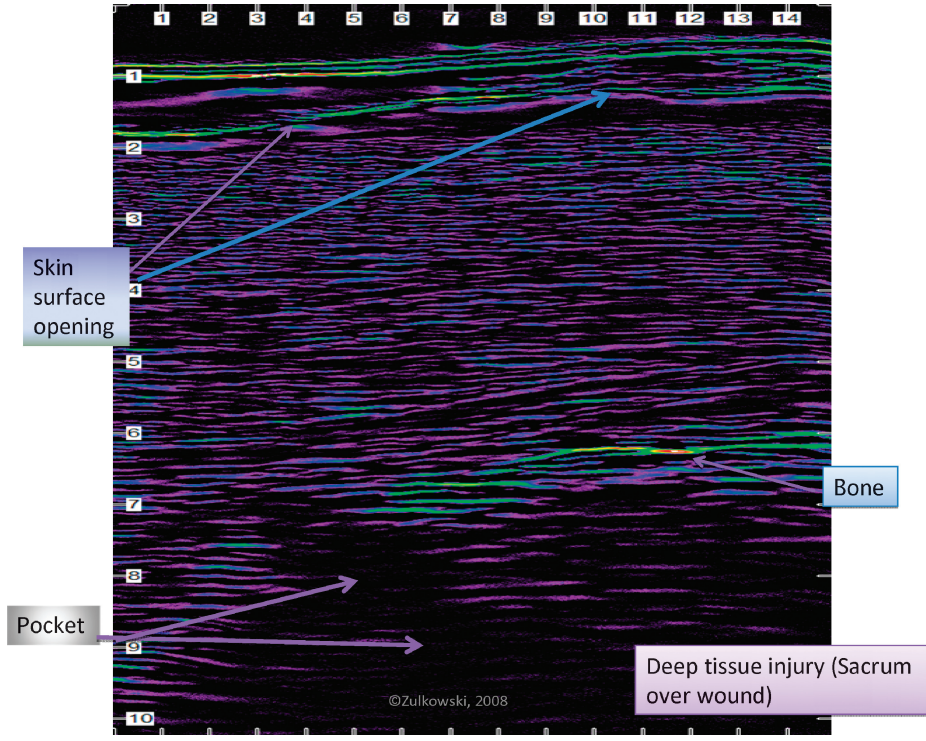


skin's transepidermal water loss. This, in turn, compromises the skin's moisture barrier ability and elevates the skin's pH.[5] Signs of irritant-associated dermatitis include erythema, edema, blistering, skin erosion, weeping, itching, and pain. Over time, the skin may even have the appearance of sunburn and spread to the skin folds between the buttocks and the inner thighs.

Allergic contact dermatitis may be caused by laundry detergent residue in reusable containment or other briefs. It may also be from contact with another allergen from a barrier cream or ointment. In aging adults, the skin's Langerhans cells decrease, which translates to mean a delayed response to allergens. Consequently, allergic contact dermatitis of the perineum may appear suddenly and be over a large area quickly. With allergic contact dermatitis, finding the cause of the allergic reaction and removing the offending agent are crucial for treatment. Skin will appear erythematous with scaling present. Papules and vesicles may be present at the contact sites.

Fungal or yeast infection. This is a secondary infection of the irritated skin. *Candida albicans* easily penetrates the compromised epidermis and appears as a maculopapular rash with satellite lesions. The skin is usually very erythematous and pruritic and may be tender and very itchy. Lesions may take on a macular appearance from

Figure 5.
SCAN SHOWS DTI (SKIN OVER WOUND)



friction, and the rash may extend from the groin into the buttocks and thighs.[4]

Bacterial infection. Secondary infection by *Staphylococcus* may also occur when the acid mantel of the skin is disrupted. If this occurs, necrotizing fasciitis or cellulitis may result.[4]

Partial-thickness skin loss (often confused with pressure ulcers) associated with moisture-related mechanical damage occurs when the macerated skin is rubbed during cleansing or patient movement. Transferring from the bed may cause friction against the bed linens or containment brief. The skin loss may appear as shallow ulcers, and the clinician may misdiagnose this as a Stage II pressure ulcer.[5,6] In reality, these are shallow abrasions caused by mechanical injury, not pressure, and are erosions of the skin surface without the presence of necrotic tissue (Figure 3).

Older-Adult Concerns

Prevalence of urinary incontinence alone affects 26 million people in the United States. In women older than 50 years, there is a prevalence rate of 48.4% for urinary incontinence, 15.2% for fecal incontinence, and 9.4% for both.[7,8] However, only 40% of the people who experience incontinence seek medical treatment.[9]

The skin of older adults is particularly susceptible to moisture-related damage. Skin becomes dryer, thinner, and less elastic. The epidermis and dermis are no longer attached, and friction-related tearing is common. Bladder changes also occur. The bladder empties less effectively and becomes less elastic. Women have a higher rate of incontinence because of weakened pelvic floor muscles from childbearing. Physiological changes in skin and bladder function combined with multiple comorbid medical conditions and age-related mobility problems contribute to the scope of the problem.

When an individual experiences both fecal and urinary incontinence, the skin is more susceptible to bacterial growth. The combination of urine and stool allows the high concentration of bacteria to convert urea to ammonia, raising the skin pH and proving an ideal environment for bacterial growth. Ammonia also reactivates digestive enzymes found in stool and further erodes the skin surface.[4]

Diagnosis

Review of clinical evidence, such as location and appearance of reddened area, as well as the patient's risk factors and symptoms, should help with clinical diagnosis.

Figure 6.
SCAN SHOWS DTI (SACRUM NEXT TO WOUND)

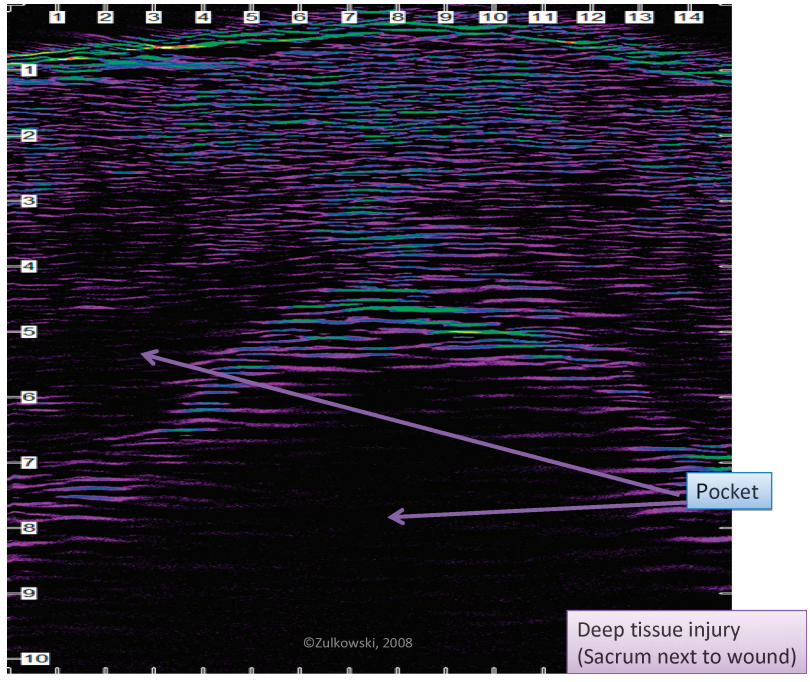
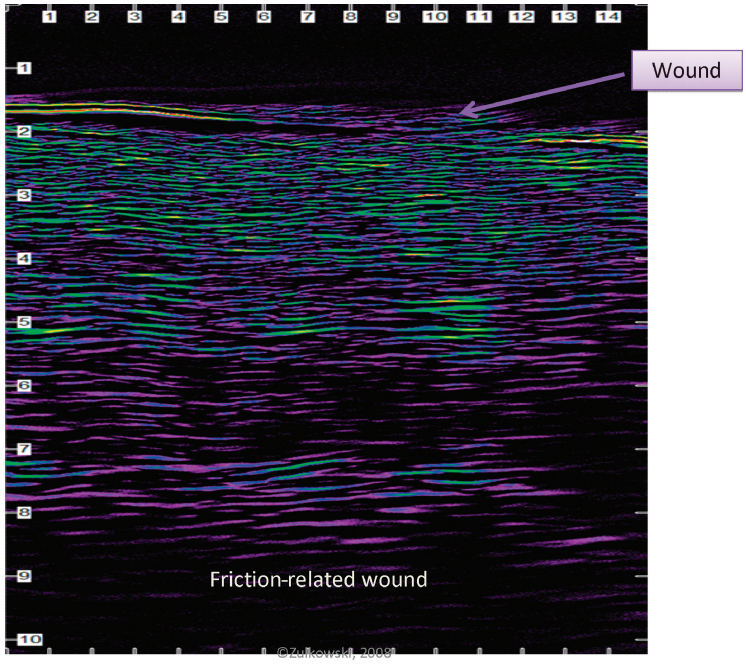


Figure 7.
SCAN SHOWS FRICTION-RELATED WOUND



It is important to keep in mind that friction of the irritated skin causes mechanical injury and may make the area more susceptible to the effects of pressure and shear. Perineal dermatitis may evolve into a pressure ulcer of the sacrum or buttocks. Clinicians must reassess at-risk patients frequently.

The majority of the information on nursing interventions to prevent or treat perineal dermatitis is based on the pediatric literature. Little research has been done in the adult population. Consequently, more studies are needed to determine the safety and effectiveness of commonly used products in adult patients. Factors that have been studied in perineal dermatitis include skin wetness, urine, ammonia, feces, skin pH, and microorganisms.

Treatment

Treatment of perineal dermatitis includes the treatment of any underlying incontinence and protection from further exposure to irritants. This includes cleansing the patient's skin gently (with tap water and mild, unscented soap or cleansing wipes) and then applying barrier ointments to protect the skin from the constant moisture.[10,11] Products should be applied according to the manufacturer's directions after each incontinent episode. Keeping the patient clean and dry, changing underpads or briefs after soiling, and using barrier creams or ointments are usually all that is required for perineal dermatitis to

Table 1.
ASSESSMENT TIPS

Dermatitis
- Moisture from incontinence, perspiration, or other sources is present in the perineum, but friction and pressure *are not* problems
- Itching and pain at site of redness
- Recent use of new lotions, soaps, detergent, or medication
- Sudden onset or spread to other areas not affected by pressure

Pressure ulcer
- Redness is in area of pressure that does not blanche when pressed
- Occurs in an area of pressure or pressure and shear, usually over a bony prominence
- Moisture from incontinence, perspiration, or other sources is present in the perineum, and friction and pressure *are* problems.

resolve.[12] With allergic contact dermatitis, topical cortisone ointment and oral antihistamines may be necessary after removal of the offending agent to decrease purities caused by the inflammatory response. If a secondary candidiasis infection is present, an antifungal powder should be used. Other secondary bacterial infections should be identified, and an organism-susceptible antibiotic prescribed.[4] Clinicians will need to re-evaluate the area of redness and the patient's response to treatment so that care planning can be adjusted as needed.

Pressure Ulcer

A pressure ulcer is defined as "localized injury to the skin and/or underlying tissue usually over a bony prominence, as a result of pressure, or pressure in combination with shear and/or friction."[13] Pressure is the causative factor. Because a Stage I or II pressure ulcer can develop in the same region as perineal dermatitis, a differential diagnosis is difficult. A Stage I ulcer was defined by the National Pressure Ulcer Advisory Panel in 2007 as "intact skin with nonblanchable redness of a localized area usually over a bony prominence. Darkly pigmented skin may not have visible blanching; its color may differ from the surrounding area."[13]

A Stage II pressure ulcer is defined as a "partial thickness loss of dermis presenting as a shallow open ulcer with a red-pink wound bed, without slough. May also present as an intact or open/ruptured serum-filled blister."[13] Both Stages I and II pressure ulcers are partial-thickness wounds, but pressure (as opposed to moisture) is the defining element (Figure 3).

Full-thickness pressure ulcers that involve deep tissue injury (DTI) are often extensive areas of tissue damage. In contrast to moisture-related or friction injury, DTI pressure ulcers start well below the skin surface and are often related to shear forces. High-frequency ultrasound technology has allowed for visualization of these changes before observation at the skin surface. In a study of patients newly admitted to a nursing home (n = 92), more than 57% had changes 1 inch below the skin surface, indicative of tissue damage, compared with 18% documented in the nurses' notes.[14] Figures 4 to 7 illustrate a DTI and show ultrasound scans of a DTI and a friction-related wound.

Standard of treatment for pressure ulcers means assessment of all risk factors and then care planning specifically for that risk. Factors that contribute to risk of pressure ulcer development such as moisture, friction, shear, nutrition, and activity/mobility need to be addressed regardless of the overall risk assessment scale score. This means the use of pressure redistribution products for the bed and chair as appropriate, nutritional consults and possible supplemental interventions, treatment of pain, and turning and repositioning. Control of moisture issues from any source including urinary or fecal incontinence, or perspiration is important to reduce the potential of both perineal dermatitis and friction-related injury. If a pressure ulcer is present, selection of dressings/treatments should maximize healing by maintaining moisture balance in the wound, controlling infection, and promoting tissue healing.

SUMMARY

Skin assessment and treatment based on individual risk are a priority in all hospitalized adults. Early recognition with prompt implementation of prevention protocols is an essential care responsibility. An incontinent patient may develop irritant or allergic contact dermatitis and develop associated secondary skin infections that need treatment. Skin that is macerated and irritated from dermatitis potentiates the effects of friction/mechanical injury and may result in a pressure ulcer. Table 1 illustrates assessment tips for perineal dermatitis and pressure ulcers.

Treating the entire patient and his or her changing needs are critical elements of quality care.

REFERENCES

1. Junkin J, Selekof JL. Prevalence of incontinence and associated skin injury in the acute care inpatient. J Wound Ostomy Continence Nurs 2007;34:260-9.
2. Zimmaro Bliss D, Zehrer C, Savik K, Thayer D, Smith G. Incontinence-associated skin damage in nursing home residents: a secondary analysis of a prospective, multicenter study. Ostomy Wound Manage 2006;52(12):46-55.
3. Bliss DZ, Savik K, Harms S, Fan Q, Wyman JF. Prevalence and correlates of perineal dermatitis in nursing home residents. Nurs Res 2006;55:243-51.
4. Farage MA, Miller KW, Berardesca E, Maibach HI. Incontinence in the aged: contact dermatitis and other cutaneous consequences. Contact Dermatitis 2007;57:211-7.
5. Gray M. Incontinence-related skin damage: essential knowledge. Ostomy Wound Manage 2007;53(12):28-32.
6. Gray M, Weir D. Prevention and treatment of moisture-associated skin damage (maceration) in the periwound skin. J Wound Ostomy Continence Nurs 2007;34:153-7.
7. Roberts RO, Jacobsen SJ, Reilly WT, Pemberton JH, Lieber MM, Talley NJ. Prevalence of combined fecal and urinary incontinence: a community-based study. J Am Geriatr Soc 1999;47(7):837-41.
8. Fujita K, Lilly HA, Kidson A, Ayliffe GA. Gentamicin-resistant Pseudomonas aeruginosa infection from mattresses in a burns unit. Br Med J (Clin Res Ed). 1981;283(6285):219-20.
9. Foundation S. Promoting continence: changing lives; 2008. Available at: http://www.simonfoundation.org/. Last accessed May 23, 2008.
10. Gray M. Preventing and managing perineal dermatitis: a shared goal for wound and continence care. J Wound Ostomy Continence Nurs 2004;31(1 Suppl):S2-9.

11. Gray M, Ratliff C, Donovan A. Perineal skin care for the incontinent patient. Adv Skin Wound Care 2002;15:170-5.
12. Atherton DJ. The aetiology and management of irritant diaper dermatitis. J Eur Acad Dermatol Venereol 2001;15 Suppl 1:1-4.
13. Black J, Baharestani M, Cuddigan J, et al. National Pressure Ulcer Advisory Panel's updated pressure ulcer staging system. Urol Nurs 2007;27:144-50, 156.
14. Zulkowski K, Kary H, Quest R. Examining Elderly Skin Using Ultrasound Technology. Presented at the Wound Ostomy & Continence Nurses Society Conference, Salt Lake City, UT, June 9-13, 2007.

CE CONNECTION

CONTINUING MEDICAL EDUCATION INFORMATION FOR PHYSICIANS

Lippincott Continuing Medical Education Institute, Inc. is accredited by the Accreditation Council for Continuing Medical Education to provide continuing medical education for physicians.

Lippincott Continuing Medical Education Institute, Inc. designates this educational activity for a maximum of 1 *AMA PRA Category 1 Credit™*. Physicians should only claim credit commensurate with the extent of their participation in the activity.

PROVIDER ACCREDITATION INFORMATION FOR NURSES

Lippincott Williams & Wilkins, publisher of the *Advances in Skin & Wound Care* journal, will award 2.0 contact hours for this continuing nursing education activity.

LWW is accredited as a provider of continuing nursing education by the American Nurses Credentialing Center's Commission on Accreditation.

LWW is also an approved provider of continuing nursing education by the American Association of Critical-Care Nurses #00012278, (CERP Category A), District of Columbia, Florida #FBN2454, and Iowa #75. LWW home study activities are classified for Texas nursing continuing education requirements as Type 1. This activity is also provider approved by the California Board of Registered Nursing, Provider Number CEP 11749 for 2.0 contact hours.

Your certificate is valid in all states.

CONTINUING EDUCATION INSTRUCTIONS

- Read the article beginning on page 382.
- Take the test, recording your answers in the test answers section (Section B) of the CE enrollment form. Each question has only one correct answer.
- Complete registration information (Section A) and course evaluation (Section C).
- Mail completed test with registration fee to: Lippincott Williams & Wilkins, CE Group, 333 7th Avenue, 19th Floor, New York, NY 10001.
- Within 3 to 4 weeks after your CE enrollment form is received, you will be notified of your test results.
- If you pass, you will receive a certificate of earned contact hours and an answer key. Nurses who fail have the option of taking the test again at no additional cost. Only the first entry sent by physicians will be accepted for credit.
- A passing score for this test is 13 correct answers.
- Nurses: Need CE STAT? Visit **http://www.nursingcenter.com** for immediate results, other CE activities, and your personalized CE planner tool. No Internet access? Call 1-800-787-8985 for other rush service options.
- Questions? Contact Lippincott Williams & Wilkins: 1-800-787-8985.

Registration Deadline: August 31, 2010 (nurses); August 31, 2009 (physicians)

PAYMENT AND DISCOUNTS

- The registration fee for this test is $21.95 for nurses; $20 for physicians.
- Nurses: If you take two or more tests in any nursing journal published by LWW and send in your CE enrollment forms together, you may deduct $0.95 from the price of each test. We offer special discounts for as few as six tests and institutional bulk discounts for multiple tests. Call 1-800-787-8985 for more information.