AUTHOR

Margaret Falconio-West
Contributing Writer

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Aging skin, coupled with reliance on others for assistance with activities of daily living, puts the elderly at high

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risk for skin tears. Firmly gripping delicate elderly skin while offering assistance can lead to tissue trauma and tearing. In fact, an estimated 1.5 million skin tears occur in institutionalized adults each year,1 with nearly 80 percent appearing on the arms and hands. (Reference 2)

Minimizing the occurrence of skin tears begins with an understanding of the skin's structure and common risk factors, followed by developing a plan of care using the most effective products for prevention and treatment.

Structure of the skin

The basic structure of the skin has a great deal to do with how and why skin tears occur. First, it's important to know that the skin consists of three layers:

1. **The epidermis** — outermost layer
2. **The dermis** — the thicker second layer that contains hair follicles, sweat glands and nerves
3. **The subcutaneous tissue** — the fatty layer that provides cushioning and protection

Between the epidermis and dermis is the basement membrane, a moving junction that both separates and attaches the epidermis and the dermis (also known as the dermalepidermal junction). This junction provides structural support and allows for the exchange of fluid and cells between the skin layers.

The epidermis has an irregular shape resembling downward, finger-like projections called rete ridges or pegs, and the dermis has upward projections. These upward and downward projections fit together like puzzle pieces anchoring the epidermis to the dermis. This connection helps to prevent the epidermis from sliding back and forth across the dermis with normal movement and skin manipulation. The two move together as one unit in people with healthy, young skin. As the skin ages – typically by the sixth decade of one's life – these rete ridges or pegs begin to flatten between that dermal-epidermal junction.[3] This diminished anchoring between the two layers increases the potential for the epidermis to detach from the dermis, leading to tearing of the skin, especially in older adults. (Reference 4)

Assessment

In the late 1980s Payne and Martin developed the Payne-Martin Classification System for Skin Tears, which addresses assessment, prevention and treatment of skin tears. The system, which was revised in 1993, defines a skin tear as “a traumatic wound occurring principally on the extremities of older adults as a result of friction alone or shearing and friction forces that separate the epidermis from the dermis or separate both the epidermis and the dermis from underlying structures.” The Payne-Martin Classification System places skin tears into three categories: (Reference 5)

Risk factors

Patients and residents who are completely dependent on others for activities of daily living, such as dressing, bathing and positioning, are at the highest risk for sustaining skin tears.[2] Often, these individuals are elderly and may have a history of previous skin tears, compromised nutrition, fluid volume deficit, confusion, limitations in mobility, lack of independence and bruised skin. Certain medications, including steroids, also make skin more prone to injury by causing further thinning as well as suppression of the immune system.

In addition, wound healing progresses more slowly in the elderly due to several factors, including decreased inflammatory response, delayed angiogenesis (i.e., formation of new blood vessels), slower epithelialization, decreased function of sebaceous glands, decreased collagen synthesis, alternation in melanocytes (resulting in skin discoloration) and thinning of all the skin layers. Less adipose tissue means decreased insulation and protection. The subcutaneous tissue also atrophies in very specific areas: the face, hands and feet. (Reference 6)

Research has shown that 25 percent of skin tears are caused by wheelchair/geri-chair injuries. Another 25 percent occur from accidents involving bumping into objects, 18 percent involve patient or resident transfers and 12.4 percent are the result of falls.1 These situations increase contact with the skin, thus increasing the potential for the skin to tear.

Prevention of skin tears

The basics. Common sense strategies, such as clothing residents in long sleeves and long pants, the use of gentle adhesives and staff education on gentle handling of the skin, are all good first steps toward preventing skin tears. (Reference 7) Use great care while providing full or partial assistance with activities of daily living. These tasks increase contact with the skin, thus increasing the potential for the skin to tear. (Reference 8) Use of appropriate equipment (i.e., lifts, walkers, transfer and turn aids, etc.) to assist with toileting and transferring also can be helpful in decreasing the chance of developing skin tears.

Skin care. Advanced skin care products that deliver endermic nutrition as well as antioxidants can provide for nourished skin topically – even if the patient or resident is not receiving adequate nutrition from oral, enteral or parenteral nutrition. (Reference 9) One study looked at skin tear incidence in a 100-bed longterm care facility and showed a reduction from 180 skin tears in a six-month period to two skin tears in a six-month time period. (Reference 10) This particular facility used a gentle, advanced skin care line with pH-balanced soap and surfactant-free cleansers; moisturizers containing amino acids and free radical scavengers like grape seed extract, vitamin C (ascorbic acid), and hydroxytyrosol (from olives); essential fatty acids like omega-3, -6 and -9; and tenacious skin protectants containing sophisticated combinations of silicones.

Similarly, in a four-month prospective crossover study comparing the use of emollient soap (containing moisturizers) with non-emollient soap, Mason found that residents of a 173-bed, long-term care facility developed fewer skin tears when an emollient soap was used during bathing. When comparing the total rate of skin tears per resident, the rate of skin tears when emollient soap was used was 34.8 percent lower than when non-emollient soap was used. (Reference 8)

Plante and Regan conducted a controlled study among 64 residents of a long-term care facility to compare the effects of using a non-detergent, no-rinse cleanser to bathing with soap and water. After 12 weeks, the total number of skin tears decreased by 90 percent, with an 82 percent reduction in skin tears in the treatment group. Annual cost savings for patients in the treatment group was $2,446.11

Skin Tear Prevention Strategies (Reference 12)

- Perform risk assessments to identify at-risk individuals
- Use moisturizers/emollients daily
- Make sure vulnerable individuals wear long-sleeved shirts, pants and stockings
- Use skin sleeves and leg protectors
- Maintain individuals' hydration and nutrition

Treatment of skin tears

Despite your best efforts to prevent skin tears, they can still happen. The primary goals for treating skin tears are to stop bleeding, recover skin integrity, prevent infection of the wound, minimize pain and promote comfort.12 There are several good topical products that can help alleviate the discomfort of skin tears while protecting the area to allow healing. It is also important to look at your dressing choices and choose products that allow you to avoid adhesives, decrease dressing changes and maintain an optimally moist wound healing environment.

Three Steps for Treating Skin Tears (Reference 12)

1. Cleanse using normal saline, tap water or wound cleanser
2. Assess according to the Payne-Martin scale or by classifying wounds as partial thickness or full thickness
3. Dress the wound using recommended products

Hydrogel sheets. Hydrogel sheets are clear or translucent water- or glycerin-based products that can be used to maintain a moist wound environment. (Reference 13) They look like a thin slice of sticky gelatin and can handle the initial fluid from a wound for the first 24-48 hours. They vary in thickness and are non-

adherent to the wound base. The hydrogel sheet may be held in place with elastic net dressing or a tubular-type dressing.

Protective sleeves. The use of protective sleeves or elastic tubular support bandages that come on a roll is a good way to hold dressings in place without irritating sensitive skin with adhesive tape. They also protect the patient or resident who is prone to picking at the dressing.

Use caution with adhesive closure strips. Adhesive closure strips are common for keeping skin tears closed while they heal, however, caution is advised. Traction on the fragile epidermis combined with inflammatory action can cause skin damage. When it's time to remove the closure strips, use extra care, as blood crusts can tear off the epidermis. (Reference 14)

Outdated Treatments for Skin Tears (Reference 12)

- Transparent films (as primary dressing)
- Telfa-type non-adherent dressings
- Sutures
- Removal of a viable skin flap immediately post-injury

Conclusion

Overall, when it comes to skin tears, keep it simple. Basic strategies, such as a comprehensive skincare program that avoids soap and includes nutrient-based moisturizers, consuming plenty of fluids and a nutritious diet, combined with using extra care to protect patients' or residents' skin from injury, will go a long way toward preventing skin tears.

When a skin tear does occur, be sure to keep it protected from infection and further injury. Avoid outdated treatments, such as telfa-type non-adherent dressings or removal of a viable skin flap. One very effective

treatment is use of a hydrogel sheet kept in place with an elastic net dressing.

With these tips and techniques, your facility will be well on its way toward eliminating skin tears all together. To learn more about how Medline's wide variety of innovative products, programs and educational support in skin and wound care, click here. View also, wound care prevention and treatment options by visiting Medline's clinical wound care solutions.

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Margaret Falconio-West

After receiving her bachelor of science degree in nursing, Margaret continued post graduate work at the College of St. Francis and completed her WOC education at Emory University. She holds licenses in Illinois as a registered nurse as well as an advanced practice nurse. She is board certified as full scope of practice Wound,

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