Managing Wounds with Exposed Tendon

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Tendons are anatomical structures that connect bone to muscle. They are composed of parallel bundles of collagen fiber[1] and often appear as striated white or creamy yellow structures in wound beds.

Tendons are nourished by blood vessels and by diffusion of nutrients from synovial fluid.[2] Because nourishment is disrupted when the tendon is exposed, meticulous care must be provided to prevent both infection and desiccation, either of which can lead to loss of tendon viability.[3] Tendons may be exposed in trauma wounds, such as massive crush injuries or fractures, Stage IV pressure ulcers, diabetic ulcers, and contaminated or infected surgical wounds.[4] Areas often affected include wounds of the feet, Achilles, hands, and arms.

Tendons heal in the same manner as other wounds: cells migrate to the area of injury and synthesize collagen. Factors that can affect tendon healing include age, general health, extent of injury, scar formation, and patient cooperation with treatment.[3] Adhesion development and scar tissue complicate the healing process. When the tendon loses its ability to glide within the tendon sheath during movement, joint function becomes impaired and surgical intervention may be required.[2]

Proper wound care must include maintaining moisture. Hydrogel and nonadherent dressings may be employed with a cover dressing to facilitate moisture needs. Negative pressure wound therapy (NPWT) and collagen matrix dressings also may be used. KCI's (San Antonio, TX) NPWT guidelines[5] require protection of tendons from direct contact with their foam dressings in order to reduce risk of tendon injury. The company recommends covering tendons with a thick layer of natural tissue, nonadherent porous material, or bioengineered tissue before NPWT is administered. Also, granulation formation over tendons can be difficult and slow; plastic surgery may be indicated. ■

References

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Commentary from Ferris Mfg. Corp.

PolyMem® dressings are ideal for managing wounds with exposed tendons because they are nonadherent and help maintain appropriate moisture balance for all tissues. No generic versions of the patented PolyMem QuadraFoam® dressings are available.

In a representative case study,[1] an immunocompromised man with neuropathy secondary to Hansen's disease (leprosy) presented with a 10 cm x 4 cm x 2 cm deep foot wound that included two exposed tendons. One tendon was exposed 1.5 cm above the base of the wound. After debriding the wound, the cavity was loosely filled and the exposed tendon cradled with PolyMem Wic® Cavity Filler, then covered with additional PolyMem dressings. Sixteen days after PolyMem dressings were initiated, the wound was superficial with both tendons securely surrounded by new tissue. The dressings provided the appropriate moisture balance for the tendons and granulation tissue formation as well as continuous cleansing of the wound so additional cleansing during dressing changes was unnecessary. Preserving the tendons resulted in the patient retaining foot mobility. PolyMem delivers unique value to any wound care situation.

July 7: Wound, after debridement, 10 cm x 4 cm x 2 cm deep, with two exposed tendons. The long exposed tendon is suspended 1.5 cm above the base of the wound.

July 23: The wound is superficial; exposed tendons are securely surrounded by new tissue. The wound was closed August 14.

References

1. Benskin, L. Quick healing of deep neuropathic foot ulcers using polymeric membrane dressings and cavity filler. Poster presented at the Symposium on Advanced Wound Care, San Antonio, TX. April 30 to May 3, 2006.

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