GUIDELINES FOR XYLAZINE-ASSOCIATED WOUNDS

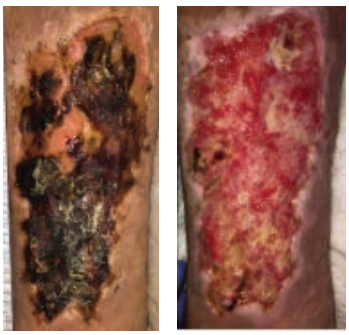
Xylazine is a veterinary tranquilizer, not approved for use in humans, which causes low blood pressure and sedation.[1] In Philadelphia, whether or not the substance users are aware, the majority of the fentanyl on the street contains Xylazine. A higher prevalence of skin wounds has been found in people who inject Xylazine-containing drugs than in those who inject drugs without Xylazine.[2] These wounds typically appear as progressive necrotic tissue and can present anywhere on the body regardless of administration method or injection site.[3,4,5,6] The statements and recommendations are based on the best practices of clinicians with extensive experience caring for Xylazine-associated wounds, while outcomes continue to be collected and analyzed to develop evidence-based care and harm-reduction strategies. These guidelines are designed for clinician and non-clinician use to assist in the care of patients with Xylazine-associated wounds.

GOALS OF CARE

- Improve ease of wound care to be performed simply and effectively at multiple locations (home, emergency departments, wound care clinics, mobile clinics, needle exchange etc.)
- Decrease local and invasive infection
- Decrease pain during wound care
- Maintain healthy healing tissue
- Decrease exposure and involvement of tendon and bone
- Decrease or delay the need for amputation

INITIAL WOUND CARE

- Initial wound care is aimed at removing devitalized/dead tissue through autolytic debridement by keeping the wound bed moist and reducing local infection (Figures 1&2).



FIGURES 1&2

Initial wound and after 6 days of wound care with Silvadene

- 1% silver sulfadiazine (e.g. Silvadene) is the recommended topical therapy as it provides broad spectrum antimicrobial coverage with low chance of bacterial resistance, maintains moisture, and does not stick to dressings allowing for comfortable wound care that is well tolerated.
- Clean wound daily with soap and water or saline, wiping and trimming away any loose necrotic tissue as tolerated.
- Apply a generous amount of Silvadene to Adaptic, xeroform or non-adherent dressing and place on wound (ointment side to the wound bed) securing with dry outer gauze dressing.
- If there is overlying necrotic skin or eschar causing venous congestion, cross hatching the necrotic tissue prior to applying Silvadene will help alleviate congestion, decreasing edema and pain while augmenting debridement (Figure 3).

FIGURE 3

Wound would benefit from crosshatching to facilitate wound debridement

- If the wound is fully debrided of necrotic tissue with a granulating wound bed, Adaptic and wet to dry dressing may be applied instead.

SURGICAL INTERVENTION

- Urgent or Emergent surgical debridement should be limited to those with deep infection causing systemic illness (necrotizing fasciitis or deep abscess).
  - Air in the wound bed on CT scan may not necessarily indicate necrotizing fasciitis in a patient who is non-toxic and imaging alone should not prompt aggressive operative intervention.
  - Concern for necrotizing fasciitis should be promptly evaluated in the operating room.
- Aggressive surgical debridement should be avoided in non-toxic patients with significant necrotic tissue. Unnecessary sharp debridement may lead to loss of healthy healing tissue, faster exposure of tendon and bone and progression to amputation. Topical wound care will help with autolytic debridement rather than surgical intervention.
- If exposed bone and/or tendon is present in the wound, minimal surgical debridement and placement of a synthetic dermal substitute, biodegradable temporizing matrix (BTM) to enhance tissue growth over these areas should be considered. We have chosen BTM due to its antimicrobial profile and stability in the wound for approximately 18 months. We posit that this scaffolding helps sustain the integrated tissue to protect bone and tendon longer than other dermal substitutes which degrade more quickly. We do not recommend the use of biologic dermal substitutes as they have a poor infection profile.
- The BTM is secured with a quickly dissolvable suture (i.e., 3-0, 4-0 chromic) so that no suture removal is needed.
- BTM facilitates coverage of avascular structures (tendon and bone) if it is in contact with adequate surrounding viable (granulation) tissue. We observe rapid granulation tissue growth with simple wound care in less than 1 week. Exposed bone may need to be debrided to viable tissue. Punctate bleeding indicates viable bone and integrates quickly into BTM dermal substitute in our experience.

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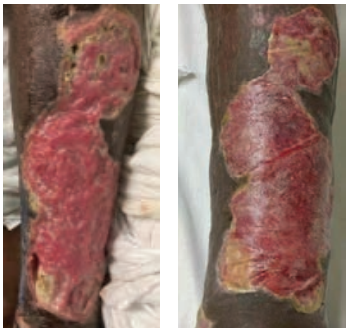
- Development of tissue integration over exposed tendon may take several weeks (Figures 4&5).
- Patients report significant decrease in pain with wound care over the dermal substitute (BTM), and ease of wound care.
- If the patient is in sustained recovery from substance use for 6 weeks, consider surgical wound closure with skin grafting to help sustain recovery. Closing xylazine-associated wounds while patients are actively injecting substances may put them at greater risk for systemic infection.
- We advocate for keeping the "abscess open" approach to reduce systemic illness, and convert the wound into a more manageable wound with less pain for harm reduction.



FIGURES 4&5

Exposed tendon in wound and visualized through BTM

POST-OP CARE AFTER DERMAL SUBSTITUTE (BTM) PLACEMENT

- To avoid lifting BTM off wound bed keep post-op dressing intact until Post-Operative Day (POD) 3-4 when it should be adhered to the wound bed. On POD 3-4, change outer dressing leaving BTM sutured in place. Re-wrap with dry kerlix gauze. Adaptic or conformant may be used between BTM and gauze for atraumatic removal of dressing moving forward.
- Patient may shower normally and get BTM wet with soap and water, then pat dry and redress with dry gauze.
- Continue with daily dry dressings with kerlix and ace bandage. Use adaptic/conformant as necessary for easy outer dressing change.
- If the environment under the BTM appears to have heavy exudate or purulence, roll out drainage from edges and/or make small incision in the top synthetic layer to help express any drainage.
- May use saline or dakin's solution 0.25% wet to dry on the kerlix if underlying infection is suspected.
- As BTM integrates into the wound, the appearance will change to pink/red with integration of healthy tissue.
- BTM over exposed tendon and bone will continue to appear tan/yellow in color and can be mistaken for a purulent pocket. Express fluid out as needed.
- Blood visualized under BTM is normal and helps with apposition and ingrowth of the dermal substitute.
- If a large hematoma is noted under the BTM, make a small incision in top layer and evacuate the hematoma (Figure 6).
- **Delamination:** Once the synthetic top layer starts to lift off (it will be a clear plastic layer with "Velcro-like" underside; the spongy underlying matrix will be integrated into the wound bed) it can be removed easily by peeling towards the center of the wound (Figure 7). Continue local wound care with adaptic and wet-to-dry dressings if needed for daily dressing change.

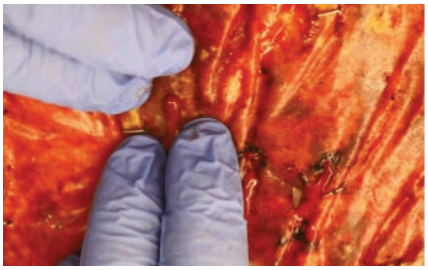


FIGURE 6

Short video clip – Purulent collection drained from a slit in the sealing membrane[7]

Short video clip – Exudate milked out through the fenestrations and holes from quilting stapes[7]

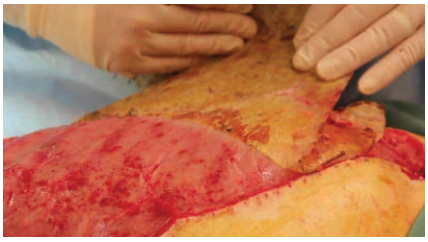


FIGURE 7

Short video clip – BTM's sealing membrane is delaminated[7]

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