

# Unna Sleeve for Neurotic Excoriations

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*Neurotic excoriations are self-induced skin lesions produced because of compulsive scratching or picking. We present the successful use of the venerable technique of an Unna boot used as an Unna sleeve for neurotic excoriations of the upper extremities.*

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Neurotic excoriations are self-induced skin lesions produced because of compulsive scratching or picking. Multiple treatment approaches of neurotic excoriations have been described in the literature including pharmacotherapy with selective serotonin reuptake inhibitors, antihistamines, and topical steroids. We present the successful use of the venerable technique of an Unna boot used as an Unna sleeve for neurotic excoriations of the upper extremities. This simple wound care technique allowed rapid healing of lesions and patient insight to the self-induced nature of this disease. The Unna sleeve is a modality that can be synergistic with psychotherapy and psychopharmacology for neurotic excoriations from various underlying psychologic issues.

## Case Reports

**Patient 1**—A 56-year-old, right-handed, woman presented with a 4-month history of ulcerations on the left arm, wrist, and hand. She denied any history of trauma to the extremity or to the spine. She admitted to periodically scratching the lesions that were occasionally pruritic and painful. The ulcers did not respond to treatment with oral antihistamines, topical steroids, or oral antibiotics. Her medical history was notable for depression, which was being treated with fluoxetine hydrochloride.

Examination of the skin on the left arm, wrist, and hand revealed multiple annular and linear ulcers along with several geometric hypopigmented and hyperpigmented scars (Figure 1A). Skin biopsy showed marked epidermal hyperplasia with underlying scarring in both the papillary and upper reticular dermis consistent with a process of repetitive trauma. Radiography of the cervical spine did not show any evidence of spondylolisthesis or other bony pathology.

Following the skin biopsy, the ulcers were covered with petrolatum ointment and then wrapped with an Unna sleeve dressing followed by a self-adherent wrap to keep the Unna sleeve in place. The patient was instructed not to remove the dressing for 7 days. On day 4 following the application of the Unna sleeve to the left arm, the patient woke up at night and noted that her right hand was stuck underneath the dressing on top of one of the ulcers. At 1-week follow-up the dressing was removed and most of the ulcers appeared to have healed (Figure 1B).

**Patient 2**—A 53-year-old woman presented to the dermatology office with asymptomatic open sores on the face and arms that had presented 5 months prior. She stated that she was unsure how the open sores developed. She vehemently denied picking or scratching the lesions. The lesions were unresponsive to topical and oral antibiotics, topical steroids, and oral antihistamines. Her medical history was notable for bipolar disorder, schizophrenia, and borderline personality disorder treated with antidepressants and antipsychotic medications.

Examination of the face and bilateral dorsal arms and hands revealed multiple geometric, punched out ulcers and erosions with scattered hypopigmented and hyperpigmented scars (Figure 2A). A biopsy of an erosion revealed excoriation with prominent fibrin deposition in the superficial dermis consistent with a chronically excoriated area. The following laboratory studies were performed and were within reference range: complete blood cell count with differential, liver function tests, serum urea nitrogen to creatinine ratio, glucose, and thyroid studies.

Following the biopsy, petrolatum ointment was applied to the bilateral dorsal arms and hands

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**Figure 1.** Examination of the skin on the left arm, wrist, and hand revealed multiple annular and linear ulcers along with several geometric hypopigmented and hyperpigmented scars (A). The ulcers were covered with petrolatum ointment and wrapped with an Unna sleeve dressing and a self-adherent wrap. At 1-week follow-up, the dressing was removed and most of the ulcers appeared to have healed (B).

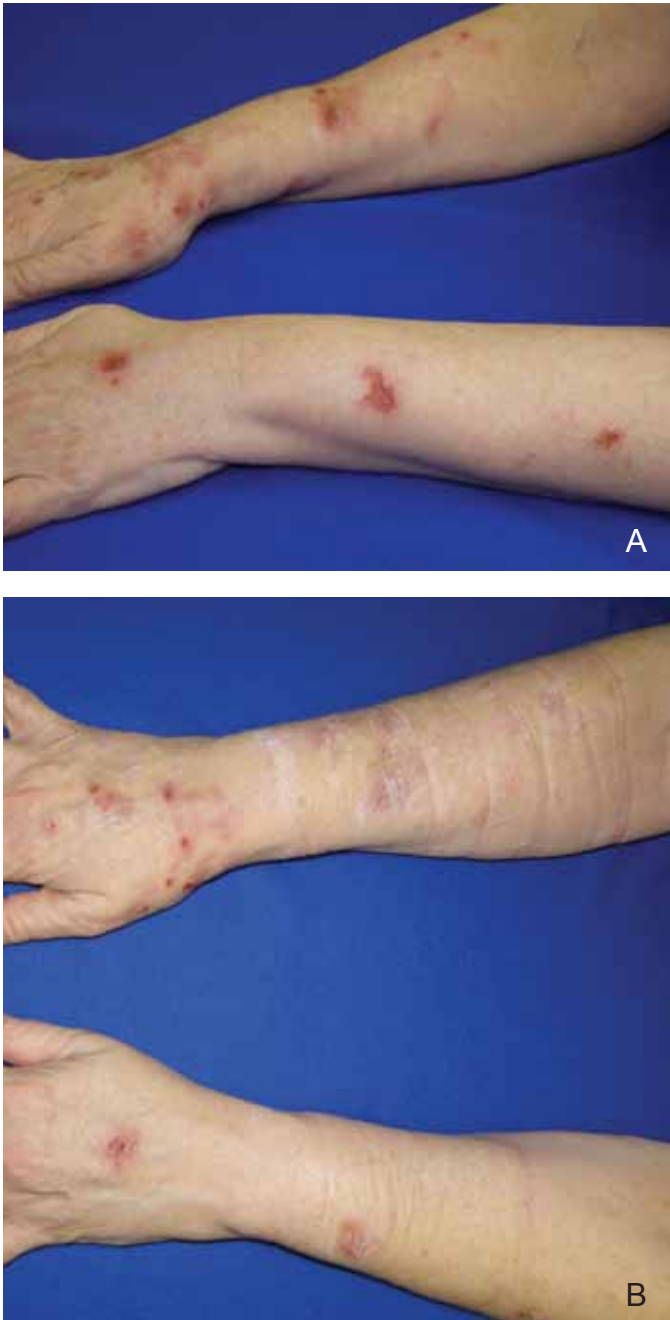
followed by an Unna sleeve dressing with a self-adherent wrap. The patient was instructed to return to the office in 7 days for removal and reevaluation. At the 1-week follow-up, mostly violaceous macules were noted. Few excoriations located close to the edges of the Unna sleeve dressing were observed, suggesting that the patient may have been scratching under the dressing. Because a few erosions remained, another Unna sleeve dressing and self-adherent wrap was applied in the same fashion. After the second application, few erosions were present (Figure 2B).

### Comment

Neurotic excoriations are self-induced skin lesions produced because of compulsive scratching or picking. This condition preferentially affects women, with most severe and recalcitrant cases occurring during

the third to fifth decades of life.<sup>1-4</sup> Lesions frequently are initiated by either minor skin lesions such as a comedone or insect bite, or they can start *de novo* on unaffected skin.<sup>1,4</sup> The most commonly involved areas are those that are accessible to excoriation such as the face, extensor arms, forearms, thighs, legs, and upper back.<sup>1,2,4</sup> On physical examination, lesions frequently are seen in different stages of evolution from superficial geometric erosions to deep ulcers to healed atrophic scars. Histologic evaluation shows changes of repetitive trauma associated with nonspecific inflammation along with scarring.

In many instances, patients may admit to scratching of the pruritic lesions that either excoriate automatically or cannot resist manipulation of the skin.<sup>4</sup> Most patients note tension relief after excoriation,<sup>4</sup> which would explain why in many



**Figure 2.** Examination of the bilateral dorsal arms and hands revealed multiple geometric, punched out ulcers and erosions with scattered hypopigmented and hyperpigmented scars (A). Petrolatum ointment with an Unna sleeve dressing and a self-adherent wrap were applied. At 2-week follow-up, most of the ulcers appeared to have healed (B).

instances, as is true in our patients, an underlying mood and/or anxiety disorder is present that may trigger excoriation.<sup>1,4</sup> The pathophysiology of psychogenic excoriation is unclear but may involve the serotonin pathways.<sup>1</sup>

Multiple treatment approaches to neurotic excoriations have been described in the literature, including pharmacotherapy with selective serotonin reuptake inhibitors, especially in the cases associated with mood and anxiety disorders.<sup>1,2</sup> Oral antihistamines including hydroxyzine and doxepin hydrochloride sometimes are utilized for their

sedative and antipruritic effects.<sup>1</sup> Topical steroids also can be effective in some cases.<sup>1,2</sup>

In 1968, Pearlstein and Orentreich<sup>5</sup> demonstrated how occlusion of an excoriated wound by a sutured dressing can provide a physical barrier to further manipulation and result in healing of the wound. Similarly, Unna boot, which is a dressing impregnated with zinc oxide and glycerin, has been successfully used in children to prevent excoriation of lower extremity grafts.<sup>6</sup>

Of interest, the zinc contained in the zinc oxide paste of the Unna dressing is known to have

antimicrobial and anti-inflammatory properties.<sup>7,8</sup> Gram-positive bacteria, including *Staphylococcus aureus* and *Streptococcus pyogenes*, appear to be most susceptible to antimicrobial effects of zinc. Several gram-negative species, including *Pseudomonas aeruginosa*, also are susceptible to zinc but at higher minimum inhibitory concentrations.<sup>7</sup> Furthermore, zinc has been shown to decrease skin histamine release by inhibiting mast cell degranulation, thus leading to a decrease in pruritus.<sup>8</sup>

Some dermatologists, including those in our group, regularly utilize the occlusive effects of Unna boot to treat pruritic conditions such as lichen simplex chronicus and stasis dermatitis with or without ulceration on the extremities. Antimicrobial and anti-inflammatory properties of the zinc present in the Unna boot dressing impregnated with zinc oxide further expedite the wound healing process.

In this report we demonstrated how we have successfully extended the use of the Unna boot to several patients with neurotic excoriations on the upper extremities. In the first case, our patient developed further insight of the lesions being self-induced when she woke up at night and noted that her other hand was stuck underneath the dressing. After all of her ulcers healed, she did not require any additional dressings and her condition has not recurred. Similarly, in the second case, all neurotic excoriations have healed after 2 cycles of Unna boot application. However, unlike the first case, this patient continued to lack insight into the self-induced nature of her disease, perhaps due to the severity of underlying psychiatric illnesses. As a result, after clearance of her excoriations, her lesions eventually returned. At that point, we referred her to a psychiatrist for modification of her psychiatric medications.

## Conclusion

The Unna boot can be successfully used as a sleeve to treat neurotic excoriations on the upper extremities. This technique creates a barrier that prevents further excoriation, thus allowing the existing lesions to heal.

## Addendum

Since the manuscript was accepted for publication, we also have had success modifying the Unna boot to an Unna bra for neurotic excoriations on the breast. Dermatologists should consider the Unna wrap aside from the lower extremity when clinically applicable.

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