

Acoustic Pressure Wound Therapy* for Treatment of a Painful, Infected Eczema Rash in a Pediatric Patient

Christine Tompkins, MSPT, CWS, Banner Health, Gilbert, Arizona

Purpose

Pain can be an obstacle to providing proper wound care, particularly in pediatric patients and cases where debridement is required. Painless debridement therapies are especially important for wound care in the pediatric population. Acoustic pressure wound therapy (APWT)* is indicated to promote healing of wounds through cleansing and maintenance debridement of yellow slough, fibrin, tissue exudates, and bacteria.¹ In a retrospective analysis of 15 consecutive patients with lower-extremity wounds, a statistically significant 80% reduction (8.07 to 1.67, $P=0.0007$) was observed in patient-reported pain scores after 2 to 4 weeks of APWT.²

Case Report

This case report describes the course and outcomes of APWT treatment for an infected eczema rash on the arm of a 2.5-year-old girl.

Summary

In this young patient, APWT appeared to assist with debridement, reduce erythema, alleviate pain, and relieve the child's fear of treatment, ultimately leading to healing of an infected eczema rash in 7 days.

References

1. Unger P. Low-frequency, noncontact, nonthermal ultrasound therapy: A review of the literature. *OstomyWound Manage.* 2008;54(1):57-60.
2. Gehling ML and Samies JH. The effect of noncontact, low-intensity, low-frequency therapeutic ultrasound on lower-extremity chronic wound pain: a retrospective chart review. *OstomyWound Manage.* 2007;53(3):44-50.

* MIST Therapy® System, Celleration Inc., Eden Prairie, Minnesota. Disclosures: The author received no financial support for this study. Funding for poster production was provided by Celleration. ML-61675

Patient and Wound

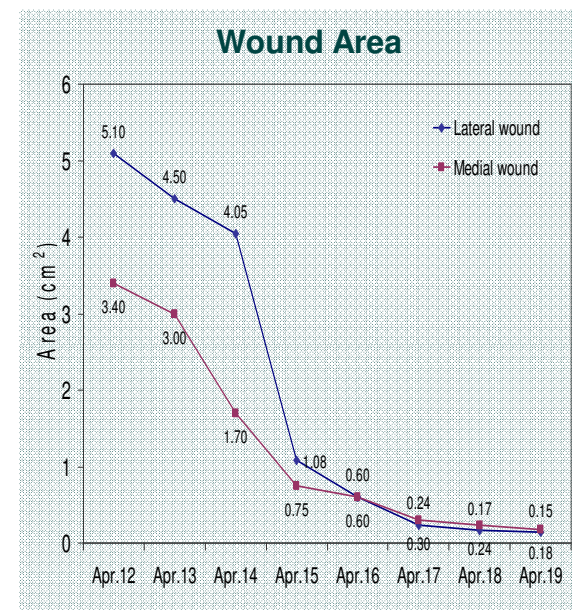
A 2.5-year-old girl developed an eczema rash on her right upper arm that progressed to apparent MRSA infection (per physician/clinician judgement; unable to obtain culture) on April 9, 2008.

Treatment

Initial application of topical betamethasone valerate ointment 0.1% daily appeared to cause pain (i.e. child kept elbow bent and would not let anyone to touch or apply ointment). By April 11, two sets of blister clusters measuring 5.1 cm² (lateral) and 3.4 cm² (medial) developed at the rash site. Treatment was changed to twice daily mupirocin 2% cream (open to air) and oral sulfamethoxazole-trimethoprim. APWT was added to the regimen to debride the 90% slough present and alleviate pain. APWT was administered for 3 minutes prior to applications of antibiotic cream twice daily April 12-17 and once daily April 18-19.

Course and Outcomes

After the first APWT application, the child would only allow antibiotic cream to be applied if APWT was applied first. The child's pain (Wong-Baker FACES Pain Rating Scale) with dressing changes decreased from 8 on the first day to 2 the second day and 0 the third day. Within 3 days of starting APWT, islands of epithelialization were visible. By Day 5, full granulation was achieved and, by Day 7, the wounds were fully epithelialized and nearly closed (lateral 0.15 cm², medial 0.18 cm²). See photos below and graph at right.



April 12
Granular 10%,
Slough 90%



April 14
Granular 70%,
Slough 30%



April 16
Granular 97%,
Slough 3%



April 18
Granular 100%



April 19
Granular 100%