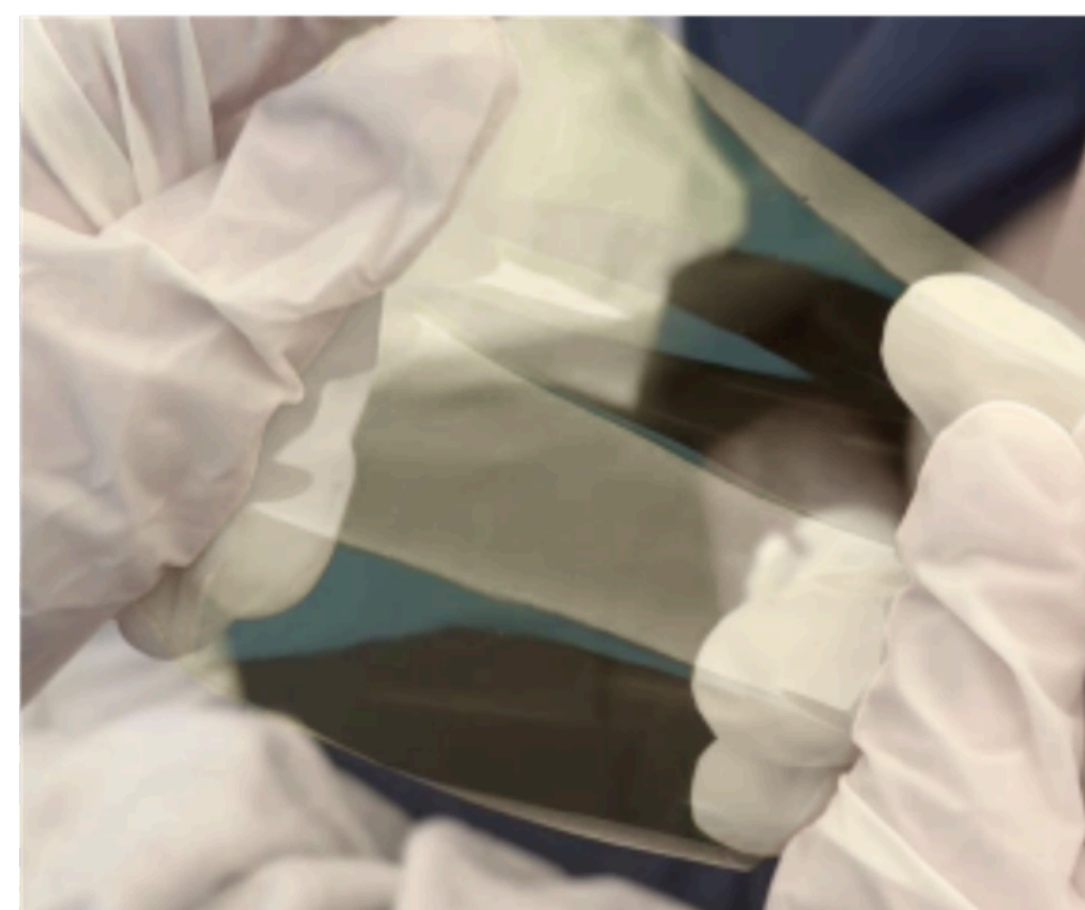


Managing Pain in Pediatric Patients Using a Resorbable Lidocaine-Silver Matrix: A Case Series

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Introduction

- Effective pain control in pediatric burn patients is critical but complicated by:
 - Communication barriers
 - Patient anxiety
 - Risks of opioid-related side effects
- To address these challenges, a conformable, resorbable polymer matrix combining lidocaine HCl for initial analgesia with metallic/ionic silver to reduce infection risk was developed
- This case series examines preliminary effectiveness in pediatric wound management and pain control



Methods

- Pediatric patients (N=2) treated at a regional referral center were evaluated
- Case 1 managed with debridement, matrix application, temporary skin substitute, absorbent dressing, gauze bandage, and self-adherent wrap
- Case 2 managed with skin cell suspension auto graft, matrix application, antibiotic ointment-coated petrolatum gauze, absorbent dressing, gauze bandage, and self-adherent wrap
- Pain, infection, and healing outcomes were documented

Results

Case 1: Partial-thickness Burn

16-year-old female spilled boiling water on extremities; 3% TBSA partial-thickness scald on dorsal foot



- Reported pain scores of 9+ at 24 hours prior to presentation and was unable to sleep, requiring narcotics for pain relief
- Following OR visit, pain medications were limited to acetaminophen and NSAIDs
- Reported **pain score reduced to 2 within 3-5 hours** of matrix application; able to attend social events the same day
- Wound healed infection-free** at 10 days post-op

Case 2: Donor Site Wound

5-year-old male fell into fire pit and suffered mixed partial-thickness contact burns; donor site (2%TBSA) taken from the posterior thigh/buttocks area



- Following matrix application, reported **no pain specifically at the donor site** at 1 hour post-operation and throughout hospital stay
- Bupivacaine injection at donor site was not needed
- Wound healed infection-free** at 10 days post-op

Conclusions

- Case series demonstrates feasibility of a resorbable, antimicrobial matrix with lidocaine HCl in pediatric burn care to support pain control, eliminating the need for narcotics and bupivacaine injection
- Benefits extended beyond initial comfort to enable same-day return to activities, suggesting potential to reduce long-term pain burden
- Future research should assess efficacy in a randomized controlled trial