

Initial Pain Relief in Complex Wounds with Application of a Bioresorbable Silver–Lidocaine Matrix

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Introduction

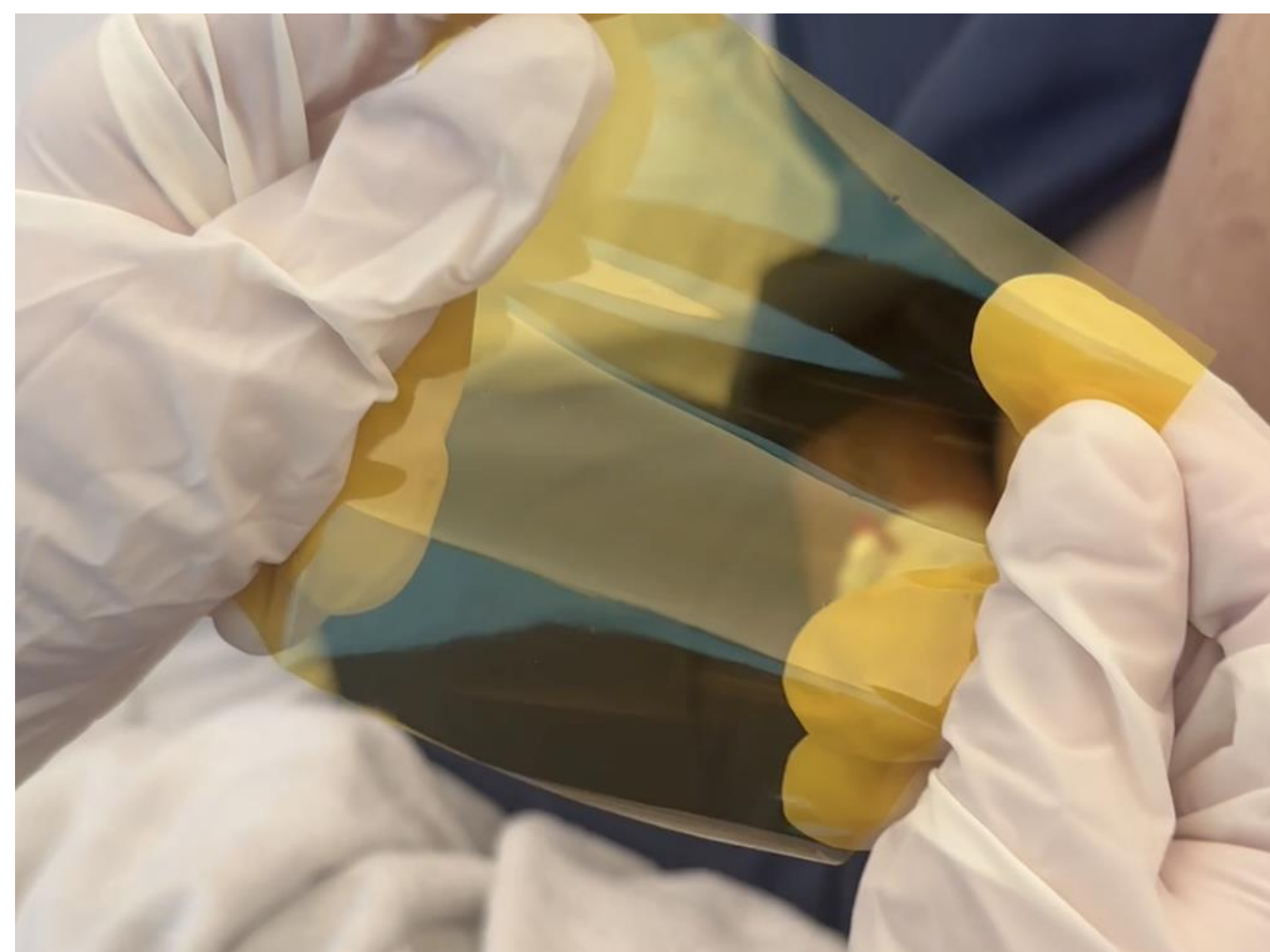
- Post-procedural pain after excision or amputation can hinder recovery and slow wound healing, particularly in patients with significant comorbidities or malignancies.
- Although conventional analgesics and topical agents may provide temporary relief, a **novel bioresorbable polymer matrix** incorporating ionic and metallic silver and lidocaine hydrochloride was developed to address multiple wound care needs:

Rapid pain relief

Infection risk reduction

Keratinocyte viability

for healing



Methods

- Case series evaluating patients (N = 3) with complex wounds of varying etiologies
- Interventions:
 1. Debridement or carcinoma excision
 2. Bioresorbable antimicrobial matrix application
 3. Appropriate secondary dressing
 4. Additional analgesics based on clinical need
- Pain scores (0–10) recorded immediately prior to matrix application and at t = 45 minutes and t = 3 hours post-application

Case Descriptions

Case 1: 87-year-old female; nonhealing TMA site and chronic osteomyelitis



- PAD, awaiting bypass surgery
- Excision of necrotic tissue, bioresorbable matrix, silver dressing, L.E.T. gel

Reported Pain: 1 → 10

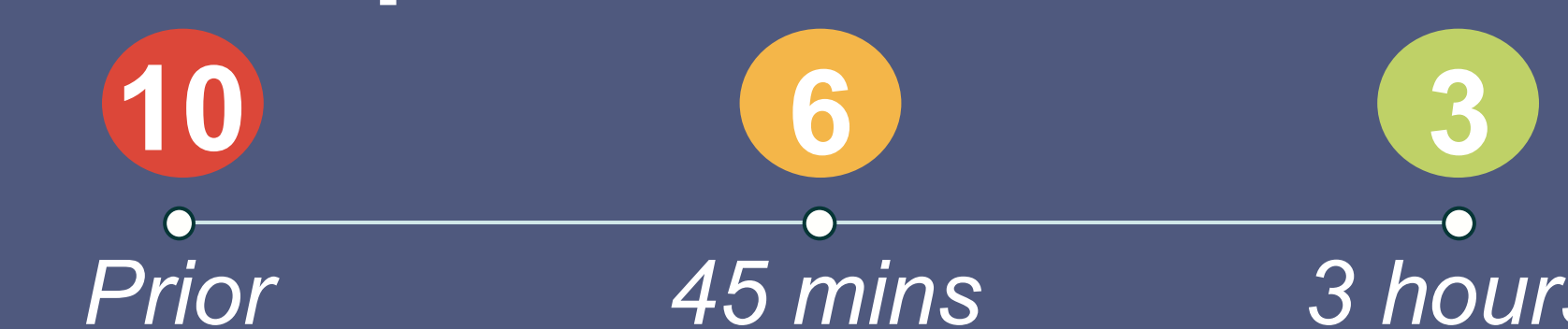


Case 2: 91-year-old female; recurrent squamous cell carcinoma



- Previous excision of carcinoma
- Bioresorbable matrix, silver dressing, topical lidocaine, gabapentin, tramadol

Reported Pain: 1 → 10

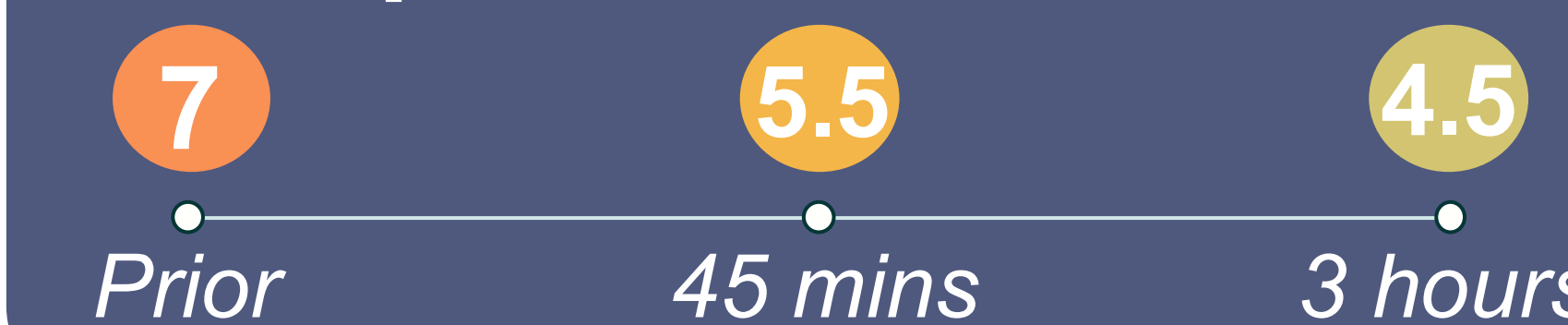


Case 3: 57-year-old female; squamous cell carcinoma



- Excision of carcinoma, bioresorbable matrix, collagen, foam dressing, L.E.T. gel, oxycodone

Reported Pain: 1 → 10



Conclusions

Rapid (<1 hour) and sustained pain reduction was observed in all cases following matrix application, despite variability in etiology and concomitant analgesic use. These findings suggest that the bioresorbable matrix provides both **structural wound coverage and meaningful early analgesic benefit**. Further clinical evaluation is warranted to determine its role in multimodal pain management and wound healing optimization.