Salvaged but Sensitized: Persistent Fingertip Allodynia After Multi-digit Trauma

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ASRA PAIN MEDICINE

25th Annual Pain Medicine Meeting

November 5-7, 2026 | Tampa, Florida

#ASRAFALL26

Background

- Severe fingertip crush injuries may heal structurally yet leave disabling neuropathic pain.
- Peripheral nerve injury after trauma can produce persistent allodynia, limiting function and rehabilitation.
- This case highlights persistent post-traumatic digital allodynia after successful tissue salvage.

Case Presentation

- 45-year-old woman with snowblower-related crush-avulsion injury to the right index, middle, and ring fingertips.
- Imaging demonstrated distal phalanx fractures of digits 2–4, including a comminuted displaced middle-finger fracture with likely intra-articular extension.
- Initial management included digital nerve blocks, irrigation, laceration repair, antibiotics, splinting, and close monitoring for tissue viability.
- Progressive necrosis developed, requiring operative debridement of the index, middle, and ring fingers and percutaneous K-wire fixation of the middle-finger distal phalanx.

Imaging and Clinical Course



Figure 1. Right-hand radiograph demonstrating multi-digit distal phalanx trauma, most pronounced at the middle fingertip.

Clinical Course

- After wound healing and pin removal, the patient developed persistent hypersensitivity and pain involving the distal middle and ring fingers.
- Occupational therapy focused on range-of-motion exercises, massage, graded grasp activities, and desensitization techniques.
- Pain persisted at approximately 5–6/10 with fingertip hypersensitivity.
- Topical 5% lidocaine provided partial relief.
- Gabapentin 100 **mg** three times daily as needed produced mild improvement but caused fatigue and dizziness.
- Ongoing limited range of motion impaired fist formation, eating, and writing.

Discussion

- Persistent neuropathic pain can occur after severe fingertip trauma despite successful wound healing and skeletal stabilization.
- Multimodal rehabilitation remains essential, but pain may continue to limit functional recovery.
- Gabapentin is a first-line option for neuropathic pain, while topical lidocaine may help localized peripheral symptoms.
- Complex regional pain syndrome should remain in the differential, but diagnosis requires Budapest criteria findings across multiple domains.

Key Takeaway

Structural salvage does not guarantee sensory recovery. Persistent digital allodynia after fingertip trauma should be recognized early and treated with a multimodal rehabilitation and neuropathic pain approach.

References

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