

Surgical Education and Self-Assessment Program (SESAP)

Category 15, Item 6

Question

In patients who sustain crush injuries to the fingers, significant nail bed lacerations are most closely associated with

- A Subungual hematoma involving 10% of the nail bed
- B Fracture of the distal phalanx
- C Dislocation of the distal interphalangeal joint
- D Neurapraxia of the digital nerve
- E Avulsion of the extensor tendon (mallet finger)

Critique

Studies of crush injuries have shown that approximately 80%–95% of patients with fractures of the distal phalanx have an associated nail bed laceration, making this the most commonly associated physical finding. In contrast, 60% of patients with crushed fingers and who have a subungual hematoma involving more than 50% of the nail bed will have an associated nail bed laceration. Recognition of nail bed lacerations is important because neglected injuries can result in later deformity and aberrant fingernail growth, as shown in the images. In patients who have either a fracture of the distal phalanx or a large subungual hematoma, the nail plate should be removed and nail bed inspected by direct visualization. Nail bed lacerations are repaired using 6-0 or 7-0 absorbable sutures, which will help to prevent long-term nail ridging. The removed fingernail should then be replaced beneath the eponychial fold, where it will prevent the development of adhesions between the eponychial fold and the nail matrix (termed “synechia”) until a new fingernail grows out.

Nail bed lacerations are not associated with closed division of the extensor tendon or dislocation of the distal interphalangeal joint. Digital nerve neurapraxia is common in patients who sustain significant crush injuries of the fingertips, but is not associated with nail bed lacerations.



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Bibliography

1. Roser SE, Gellman H. Comparison of nail bed repair versus trephination for subungual hematomas in children. *J Hand Surg [Am]* 1999;24:1166-70.
2. Simon RR, Wolgin M. Subungual hematoma: association with occult laceration requiring repair. *Am J Emerg Med* 1987;5:302-4.

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