Phalanx Fracture Splinting Techniques

Distal Phalanx Splinting

Tuft fractures and mallet finger are the most common injuries affecting the distal phalanx, and both can be treated with an aluminum foam splint. Tuft fractures usually are stable and can be splinted from the volar PIP, curving up around the distal phalanx.

Mallet finger injuries should be splinted with the DIP in extension or slight hyperextension. The aluminum splint can be applied to the volar surface, extending from the PIP joint to the distal phalanx (Figures 1 and 2). This allows flexion of the PIP joint. Katzman and colleagues have demonstrated that only the DIP joint need be immobilized in extension to allow healing of the mallet finger.4

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Phalangeal fractures are encountered commonly in the emergency department. Although they represent a common injury of the hand, optimum splinting techniques for the initial immobilization of a finger fracture are not well documented.

Phalangeal fractures account for 23% of all fractures below the elbow.1 Phalangeal fractures are nearly twice as common as metacarpal fractures. The proximal phalanx is the most commonly fractured phalanx, followed by the distal phalanx and then the middle phalanx.2 The small finger accounts for 38% of all digital ray fractures, with a relatively even distribution across the remaining four rays.2

The intrinsic plus position and the position of function are the two methods used for immobilizing a phalanx fracture. Buddy taping is used for stable, neurovascular-intact phalanx fractures that are not dislocated or open. Intrinsic position is achieved when the metacarpophalangeal (MCP) joint is flexed to 90 degrees while the interphalangeal (IP) joints are in full extension and the wrist in 10 to 20 degrees of extension.

Position of function is achieved when the MCP joint is flexed at 70 or more degrees, the proximal interphalangeal (PIP) joint is flexed at 15 degrees and the distal interphalangeal (DIP) joint is flexed from 5 to 10 degrees. Position of function commonly is described as looking as if the patient is holding a beverage can. The wrist should also be in 10 to 20 degrees of extension.

Buddy taping is achieved when the injured phalanx is stabilized by taping it to an uninjured finger adjacent to the compromised collateral ligament.3 A piece of Webril is placed between the taped fingers to absorb moisture and to prevent the fingers from rubbing together.

The literature remains unclear as to which splinting technique—intrinsic plus position or position of function—achieves the best outcome. No well performed studies have provided evidence that intrinsic position offers a better outcome than position of function when used as the initial splinting position. Perhaps successful outcome relies more on a quick orthopedic follow-up, within seven days, than on the initial splinting method.