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Comprehensive Management Of Major Wound Over The Right Index Following A Crush Injury In 19-Year-Old Male Patient

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Clinical Image

A 19 year-old male patient presented to tertiary care rural hospital at emergency department with complained of pain and sever wound over the right index following a crush injury. The injury occurred when the patient's finger got caught in a brick machine. Resulting in severe trauma to the right index finger. The pain is described as severe in intensity, acute in onset, and aggravated by movement. The wound over the affected finger is associated with swelling and functional limitation due to severe pain.

On examination, Right Index Finger inspection overlying skin shows a lacerated contaminated wound measuring approximately 3X2 cm over the anteromedial aspect of the 2nd proximal phalanx of the right hand. Swelling present over the right index finger. Active bleeding was noted. Bone fragments are visible. Skin discoloration observed over the right index finger. Crepitus present over proximal phalanx. Tenderness present over the affected region. After radiological investigation patient diagnosed as a Compound Grade 3A Proximal Phalanx fracture of index finger right side.

Emergency surgical management was promptly initiated without delay. A pre-anesthesia checkup was done. Patient kept NBM for 4 hour. Inj. NS IV 90 ml/hour, Inj. RL. IV 90 ml/hour given. Patient was taken in Operation Theater for emergency surgery. Under all aseptic technique precautions wound debridement was performed. Longitudinal traction was applied, and the fracture site was visualized under the C-arm.

During operation A 1.5 mm K-wire was first passed from the base of the proximal phalanx of the index finger distally, from lateral to medial, up to the level just before the proximal interphalangeal joint to engage the distal fragment.

A second 1.5 mm K-wire was passed retrograde from the head of the proximal phalanx of the index finger, obliquely and from lateral to medial, stopping just before the metacarpophalangeal joint. Reduction was achieved, and alignment was confirmed in AP, lateral and oblique views under the C-arm.

Wound was irrigated with saline. Skin was closed with Ethilon 3-0. Capillary refill time was less than 3 second and pin-prick sensation was preserved in the right index finger.

Post-operatively Spo2 in the right index finger was 98%. Sterile dressing was applied. Cock –up slab was given. Then the patient was shifted to the post-operative ICU.

Patient was NBM 6 hours post operation. For pain control Inj. Dynapar AQ 1ML IN 100 ml NS twice daily. Inj. Neomol 100 ml IV SOS. Inj. Ceftriaxone 1gm IV 12hourly. Tab. Ibuprofen 400mg 1 tab twice daily. Tab. Vitamin –C 500 mg 1 tab twice daily. Tab. Calcium 500 mg 1 tab twice daily.

Post operative day 2 dressing was done and suture site was found to be healthy and healing, no gapping or discharge seen, 2 sessions of PRP infiltration done on POD-01 and POD-04.

Post-operative X-ray was found to be satisfactory. Physiotherapy given in the form of Wrist ROM exercise and shoulder and elbow ROM exercise. Buddy strapping was done.

On discharge patient's general condition was fair, vitally stable, 2 K-wire in situ, Active wrist movements were present, distal sensation intact, Spo2 in the right index finger was 99%. Advised

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to patient follow up and suture removal or as and when required.

Keywords: Crush injury, wound, infection, comprehensive management, prevent deformity.

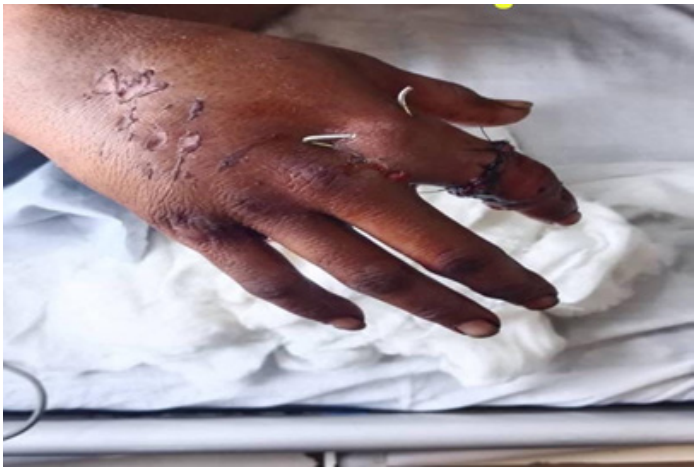

Figure 1: Closed reduction with K-wire for proximal phalanx fracture index finger right side.

Present case was a major wound over the Right Index because of Crush Injury after investigation diagnosed with a Compound Grade 3A Proximal Phalanx fracture of index finger right side. It was challenging to surgeon but prompt decision and early treatment and management patient outcome was fair. Early treatment and management helps to prevent lifelong deformity among Youngers.
In this article author mentioned that, the difficulties associated with managing proximal phalanx fractures are indicated by a number of treatment methods and protocols, including splinting, percutaneous wires, external fixation, interfragmentary screw fixation, and small fragment plates. Achieving a steady reduction with proper alignment and enabling early digit mobilization are essential for an appropriate functional outcome [1].

When unobstructed tendon mobility and early active range of motion coexist with acceptable fracture alignment and stability, clinical success is achieved [2,3].

In the present case post-operative X-ray was found to be satisfactory. Physiotherapy given in the form of Wrist ROM exercise and shoulder and elbow ROM exercise. Buddy strapping was done.
Hand crush injuries must be managed with a planned, methodical strategy that is customized for each patient and an early, precise assessment of the injuries. In general, the goal of the initial emergency surgery should be to achieve skeletal stability, revascularization, and the removal of all non-salvageable tissues. To improve hand function, secondary surgery is carried out [4].

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