



MANAGING PAEDIATRIC FINGER TIP INJURY BY EMERGENT NEEDLE STABILISATION

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KEYWORDS :

INTRODUCTION:-

Paediatric finger tip injuries are common and peak at 2 years of age accounting for almost 2/3rd of all paediatric hand injuries¹, mostly results out of a crush mechanism² and usually have an associated fracture or epiphyseal injury.

Improper management of these injuries may result in profound functional and cosmetic impairment even tip amputations³.

The finger tip contributes to fine dexterity and the immense healing potential aids in improved outcome. There is no clear cut evidence regarding superiority of conservative vs operative management of these injuries.

In our study we aim to ascertain a minimal invasive efficacy of simple approach of stabilizing these finger tips using hypodermic needle.

MATERIAL AND METHODS:

The study was conducted under department of orthopaedics SJPMC, Bharatpur Rajasthan from may 2022 to September 2022. the study included 17 children between age groups of 1-7 years who presented in emergency with finger tip cut upto distal interphalangeal joint level.

The exclusion criteria was child with more than one finger involved and completely amputated finger.

Preoperative evaluation involved x-ray of hand to identify associated fracture or physeal injury.

Surgical Technique :

This was an emergency procedure and after explaining prognosis and taking informed consent, under complete aseptic precautions child was taken under ring block after debridement and washing of the wound a hypodermic needle of 23 gauge was used to splint the tip by inserting it from beneath the nail through the bone upto the middle phalanx, no sutures were taken and a cock up slab in functional position till tip was given.

Follow Up :

all patients were subjected to 1st dressing pn 3rd day followed up by next dressing on 7th day and then next on 10th day usually needle was removed at 2 weeks time and mobilization of DIP was started there after, cock up slab was removed on 7th day. a follow up visit on 21st day was done.

RESULTS:

The mean duration of follow up was 17 +- 2 days, out of 17 patients, 16 had complete cosmetic healing with nearly normal DIP functions, in 1 of the case there was accidental pulling out of needle on 3rd day with subsequent gangrene and

amputation, in one of the patient there was nail loss which took one and half months time to heal with new normal looking nail.

DISCUSSION:

finger tip injury management in paediatric age group is a debatable topic with some advocating conservative methods and some advocating a pure surgical management, the results obtained by both methods are found to be comparable. Finger tip injuries with Distal phalanx fracture adds on to the management difficulties; in literature for unstable, displaced fractures⁴ and in fractures with gap of fragments⁵ screw fixation is an alternative to manage distal phalanx fractures apart from k-wire fixation^{6,7} but was challenging due to small size of bone.

Chen et.al.⁸ used 23 gauge hypodermic needle, Rha et.al.⁹ used 18 gauge needle.

Ali Ozgur karakas et.al.¹⁰ in his study of 354 cases of 4 year duration did emergency surgery under local anaesthesia and concluded about the frequency and associated functional, aesthetic and psychological sequelae.

Volkan Killincoglu et.al. in his study of 72 patients managed by 25 gauge hypodermic needle concluded 90% i.e. 65 patients to have good functional results with 51 i.e. 70.8% with excellent results.

Kjell Van Rayen et.al.¹¹ in their comparative study of hypodermic needle versus k-wire concluded that hypodermic needle for fracture distal phalanx used in emergency room without fluoroscopy have similar outcomes to k-wire done under fluoroscopy.

Letizia Senesi et.al.¹² in their comparative study of 23 gauge hand crossed hypodermic needle versus k-wire fixation in distal phalanx fractures concluded hypodermic needle to yield satisfactory outcome in terms of union time and range of motion and therefore a valid alternative to k-wire.

CONCLUSION:

using hypodermic needle without fluoroscopy under local anaesthesia in an emergency room setting offers economic, convenient, quick and effective outcome comparable to conventional fluoroscopy guided k-wire fixation and have a good cosmetic as well as functional and reliable outcome.

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