

How to Cite

Anwar, S. (2023). Fingertip injury: A case report in emergency departments. *International Journal of Health & Medical Sciences*, 6(3), 169-172. <https://doi.org/10.21744/ijhms.v6n3.2181>

Fingertip Injury: A Case Report in Emergency Departments

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Abstract---Fingertip injury is one of the most common injuries to the hand. Injuries can include damage to the skin and soft tissue, bones (distal phalanx), nails and nailbeds. The fingertips are rich in nerves and very sensitive. Without prompt and precise treatment, finger injuries can interfere with the complex function of the hand and may result in permanent deformity and disability. This report aims to report management in patients with fingertip injuries. A 25-year- male patient with a fingertip injury in the area of the right index finger. The results of the local status examination found a laceration measuring 3x1,5 cm with uneven edges in the aspectus volar in the distal phalanx in the II digit along with tenderness and no limited finger movement. Patients treated with pharmacotherapy and operative measures for the reconstruction of fingertip injuries, with a local flap using the V-Y flap method.

Keywords---bones (distal phalanx), fingertip injury, pharmacotherapy, V-Y flap method.

Introduction

Fingertip injury (FTI) is an injury to the area distal to the insertion of the flexor digitorum deep tendon. One-third of all traumatic injuries affect the hands; Fingertip injuries are the most frequently traumatized parts. FTI can include damage to the skin and soft tissue, bone (distal phalanx), or nails and nailbeds (Lee et al., 2013). The approach to the management of fingertip injuries is based on several factors, including age, hand dominance, gender, pre-existing medical conditions, mechanism of injury, occupation and specific characteristics of the wound inflicted.

Although fingertip lesions are often regarded as "minor" injuries, in reality, injuries to this part often result in impaired sensibility leading to significant loss of function. Therefore, every surgeon has certain methods and tendencies in choosing the most optimal surgical procedure for the patient (Germann et al., 2015). The Goal of FTI treatment is to restore adequate sensation, minimal pain, maximum joint movement and good cosmetic.

Case report

A 25-year- male patient arrived at 10.50 pm with a shipment from The Cable assembly factory with complaints of index finger right-hand injuries pinched by the auto plate press machine. The incident occurred when the patient was checking the auto plate press machine at That Factory was electrocuted at around 09.30 pm, and accidentally his left hand pressed a button and his right hand which was checking the machine ended up being pinched by the machine. Open wound on the index finger of the right hand, irregular (Fig.1). The patient was compos mentis and had typical vital signs. The right-hand region has a distal phalanx II laceration wound with a muscle base, uneven edges, pain, and subungual hematoma (Alpysbaev et al., 2021).

Based on the history and physical examination, the working diagnosis, in this case, is a Fingertip injury on the index finger of the right hand. In this case, management was carried out based on therapy from the general surgeon department. The patient underwent surgery in the form of debridement and reconstruction (Bertelli et al., 2007; Sawaizumi & Ito, 2003).



Fig 1 : a 25 male patient with fingertip injury

Examination	Result	Normal Rate
Hemoglobin	12,8 g/dL	14 - 18 g/dL
Leukocyte	8.840 / UL	4.000 – 11.000 /UL
Hematocrit	39 %	40 - 50 %
Thrombocyte	290.000	150.000-400.000/ul
Glucose	106 mg/dL	< 120 mg/dL
Bleeding Time	3	1-6 menit
Clotting Time	9	6-14 menit



Discussion

Fingertip injuries can be caused by many things, they can be a direct blow or cut, either using a sharp object or a power tool. A direct blow to the fingertip can cause tendon or ligament damage, as well as fracture or dislocation of a bone in many work-related injuries, especially in young men who perform manual labour (Peterson et al., 2014; Dölen et al., 2014). Lack of safety at work, unpreparedness to engage in high-risk activities as well as carelessness and use of alcohol can be factors that lead to FTI (Lee et al., 2013).

Management of fingertip injuries varies from local wound care to complex surgical reconstruction. The goal of FTI treatment is to restore adequate sensation, minimal pain, maximum joint movement and good cosmetic. In achieving this goal, it is also necessary to pay attention to efforts to maintain the size of the fingertips (Panattoni et al., 2015).

The first treatment in the Emergency departments should pay attention to several things, namely maintaining the length, bearing and sensation of the fingers as far as possible, maintaining proper nail growth capacity and function by paying special attention to the eponychium, preventing infection by considering prophylactic antibiotics, minimizing joint stiffness, limiting work disability and use a digital block to administer local anaesthetic and avoid further finger swelling by direct infiltration of anaesthetic into the affected area (Lemmon et al., 2008).

In this case, the initial treatment in the Emergency department given to the patient is cleaning the wound and dressing the wound with gauze to prevent contamination of the wound. Then this patient also underwent stump repair surgery to reconstruct the injured fingertip (Sapp et al., 1993; Acar et al., 2014; Buckley et al., 2000). The chosen method is a local flap with the V-Y flap technique. This operative procedure is performed under general anesthesia, beginning with debridement which aims to remove dead tissue and clean any dirt in the area around the wound. The patient was discharged for treatment on day 1 after surgery with the patient's condition improving, no signs of infection were found and it was recommended to carry out routine controls so that monitoring of the healing process becomes more controlled and results are as expected (Lee et al., 2020; Onishi et al., 2005).

Conclusion

Fingertip injury (FTI) is a type of trauma that is often found in emergency services. Prompt and appropriate treatment can prevent complex functional disorders and permanent deformities and disabilities in the hands.

References

- Acar, M. A., Güzel, Y., Güleç, A., Türkmen, F., Erkoçak, Ö. F., & Yılmaz, G. (2014). Reconstruction of multiple fingertip injuries with reverse flow homodigital flap. *Injury*, *45*(10), 1569-1573. <https://doi.org/10.1016/j.injury.2014.06.009>
- Alpysbaev, K. S., Djuraev, A. M., & Tapilov, E. A. (2021). Reconstructive and restorative interventions at the proximal end of the thigh and pelvic bones in destructive pathological dislocation of the hip in children after hematogenous osteomyelitis. *International Journal of Health & Medical Sciences*, *4*(4), 367-372. <https://doi.org/10.21744/ijhms.v4n4.1779>
- Bertelli, J. A., Santos, M. A., Kechele, P. R., Rost, J. R., & Tacca, C. P. (2007). Flexor tendon grafting using a plantaris tendon with a fragment of attached bone for fixation to the distal phalanx: a preliminary cohort study. *The Journal of hand surgery*, *32*(10), 1543-1548. <https://doi.org/10.1016/j.jhssa.2007.08.022>
- Buckley, S. C., Scott, S., & Das, K. (2000). Late review of the use of silver sulphadiazine dressings for the treatment of fingertip injuries. *Injury*, *31*(5), 301-304. [https://doi.org/10.1016/S0020-1383\(99\)00296-X](https://doi.org/10.1016/S0020-1383(99)00296-X)
- Dölen, U. C., Sungur, N., & Koçer, U. (2014). VY rotation advancement flap: A metanalysis and systematic review. *European Journal of Plastic Surgery*, *37*, 635-642.
- Germann, G., Sauerbier, M., Rudolf, K. D., & Hrabowski, M. (2015). Management of thumb tip injuries. *The Journal of Hand Surgery*, *40*(3), 614-622. <https://doi.org/10.1016/j.jhssa.2014.09.028>
- Lee, D. H., Mignemi, M. E., & Crosby, S. N. (2013). Fingertip injuries: an update on management. *JAAOS-Journal of the American Academy of Orthopaedic Surgeons*, *21*(12), 756-766.
- Lee, T. Y., Shin, Y. H., & Choi, D. I. (2020). Reconstruction of medial epicanthal fold using vy advancement and turnover flap. *Journal of Plastic, Reconstructive & Aesthetic Surgery*, *73*(2), 363-368. <https://doi.org/10.1016/j.bjps.2019.07.013>
- Lemmon, J. A., Janis, J. E., & Rohrich, R. J. (2008). Soft-tissue injuries of the fingertip: methods of evaluation and treatment. An algorithmic approach. *Plastic and reconstructive surgery*, *122*(3), 105e-117e.

- Onishi, K., Maruyama, Y., Hayashi, A., & Inami, K. (2005). Repair of scalp defect using a superficial temporal fascia pedicle VY advancement scalp flap. *British journal of plastic surgery*, 58(5), 676-680. <https://doi.org/10.1016/j.bjps.2005.01.009>
- Panattoni, J. B., De Ona, I. R., & Ahmed, M. M. (2015). Reconstruction of fingertip injuries: surgical tips and avoiding complications. *The Journal of Hand Surgery*, 40(5), 1016-1024. <https://doi.org/10.1016/j.jhsa.2015.02.010>
- Peterson, S. L., Peterson, E. L., & Wheatley, M. J. (2014). Management of fingertip amputations. *The Journal of hand surgery*, 39(10), 2093-2101. <https://doi.org/10.1016/j.jhsa.2014.04.025>
- Sapp, J. W., Allen, R. J., & Dupin, C. (1993). A reversed digital artery island flap for the treatment of fingertip injuries. *The Journal of hand surgery*, 18(3), 528-534. [https://doi.org/10.1016/0363-5023\(93\)90107-E](https://doi.org/10.1016/0363-5023(93)90107-E)
- Sawaizumi, T., & Ito, H. (2003). Lengthening of the amputation stumps of the distal phalanges using the modified Ilizarov method. *The Journal of hand surgery*, 28(2), 316-322. <https://doi.org/10.1053/jhsu.2003.50054>