

Case Report of a Patient Who Came to the Meat Grinder by Shaken Hand

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Abstract: *The decision whether to amputate or reconstruct an injured extremity remains a subject of extensive debate, as multiple factors influence the decision. Replantation should be attempted for all pediatric amputations.*

Keywords: *Mincing machine, wrist, amputation, pediatric amputation, finger amputation*

1. INTRODUCTION

Crushed extremities have historically been associated with very high amputation rates. [1] Complete or partial traumatic amputations constitute 0.1% of all hand injuries.

Experience with these injuries in World War II, the Korean and Vietnam Wars, and more recently in the Middle East (Operation Enduring Freedom and Operation Iraqi Freedom) has clearly shown improvements in amputation rates for crushed extremities, decreasing from 72% to 13–20% and less than 10%, respectively. [2]

An estimated 111,600 children younger than 18 years of age were treated in U.S. emergency departments for amputation injuries between 1990 and 2002. The mean age was 6.18 years. Finger amputations accounted for 91.6% of all amputations, ranging from 95.2% in children 0–2 years of age to 87.9% in children 13–17 years of age. Complete amputations accounted for

70.2% of all amputations in children aged 13–17 years, compared with 52.6% in children aged 0–2 years. [3,4]

A total of 1,715 traumatic upper extremity amputations were identified over the 10-year period, representing 3% of all cases seen at SOS Main. Most cases involved middle-aged men. Revascularization was attempted in one-third of cases, and microsurgery was successful in 70% of cases. [5] With a few exceptions, replantation should be considered in all completely amputated parts and all partial amputations should be evaluated for revascularization. Although crushed, comminuted or multilevel digital amputations have a poorer prognostic value, there is a situation that the emergency physician should not miss. Although there is a classical contraindication to replantation, the only situation that would be contraindicated in this situation is that all pediatric amputations are included in the replantation indications.[6]

2. CASE

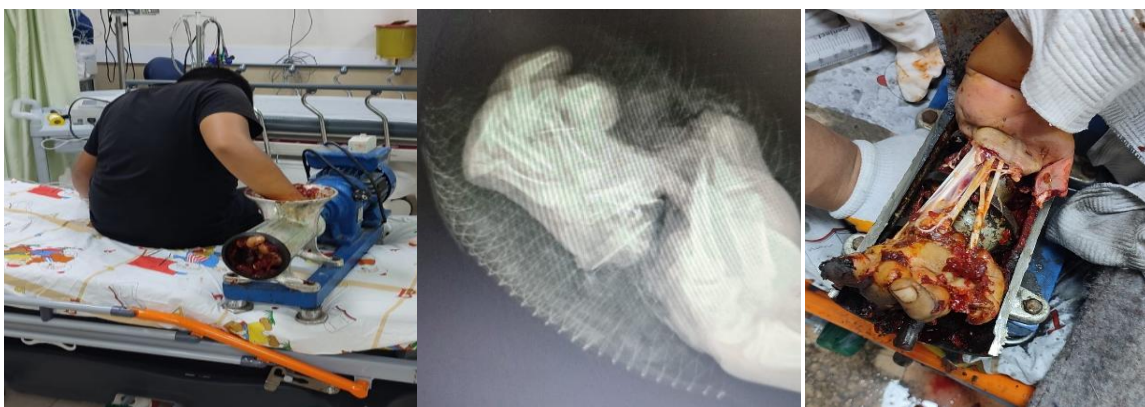


Figure 1. a.b.c. Preoperative view of the case.

A 12-year-old boy who used an automatic meat grinder to make pepper paste was brought to the emergency room with his right hand caught in the meat grinder. The patient's hand was inside the meat grinder and his fingers were coming out of the meat grinder plate section. Since the orthopedist did not have a tool to cut this, fireman was called and the fireman brigade was went to the hospital. The fire brigade cut the meat grinder made of cast alloy with the Spiral device. A blanket was placed on his back so that the flames coming out of the Spiral would not harm the child. The open parts of his right arm were covered with a wet cloth. The child patient's hand was not shown. After the meat grinder was cut, tendon connections were seen between the fingers and the arm. The remaining parts of the hand were rescued from the machine's conveyor helix, washed with physiological serum and irrigated. (Figure 1.a.b.c.)

It was wrapped with sponge and sent for X-ray. There was loss of sensation and circulation in the fingers in the semi-amputated parts of the patient. (Figure 1.a.b.c.)

The patient was consulted by orthopedics, amputation was recommended, the patient was referred to an external center due to the lack of a hand surgeon. The patient was operated on at night during the follow-up, and the child's circulation is still intact (96 hours). Our follow-up is ongoing.

The tissue loss was corrected by using a graft during the operation. (Figure 2.)

After 3 months, the child patient, who was recommended to undergo amputation, can perform the function of 3 fingers, one finger was necrosed, and the other finger was not amputated



Figure 2. Operative view of the case.

3. DISCUSSION

With the expansion of trauma systems and advances in trauma care, the need for a detailed understanding of limb salvage has become paramount. Typically, when a digit is amputated, ischemic tolerance periods are 12 hours if warm and up to 24 hours if cold. More proximal amputations are less tolerant of ischemia due to the presence of muscle tissue that can undergo irreversible changes after 6 hours of ischemia. [5-6]

The decision whether to amputate or reconstruct an injured extremity continues to be the subject of extensive debate, as multiple factors influence the decision. [7]

With a few exceptions, replantation should be considered in all completely amputated parts and all partial amputations should be evaluated for revascularization. Although crushed,

comminuted or multilevel digital amputations have a replantation poorer prognostic value, is there a time when it is contraindicated for emergency department evaluation? Although this issue is affected by cultural and social factors, it should not be forgotten that it may be beneficial to reconsider replantation contraindications, especially in pediatric groups. [8-10]

4. CONCLUSION

Although successful finger replantation has been reported after 40 hours of warm ischemia, cooling the affected part increases the average tolerable ischemia time by approximately 2-fold. Especially in the pediatric population, replantation should be attempted first, regardless of the patient's injury or lesion, and the emergency physician is responsible for this search.

When the results of the study were evaluated, it was concluded that hand injuries are largely preventable injuries by taking simple precautions in daily life, as well as taking workplace safety seriously and reducing the rate of ordinary crime in society.

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