

# Isolated Severing of the Long Flexor of the Thumb Following an Electrical Shock: A Case Report

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## Abstract

## Case Report

We report a case of isolated severing of the FPL tendon following an electrical shock, A 24 -year-old male suffered from an electrical shock while work on home electrical circuit. The lesion was limited to the right hand, clinical exam showed a deficit of thumb flexion with multiple skin burn lesions, surgical exploration and repair we done after stabilization of the patient.

**Keywords:** Electrical Shock, skin burn lesions.

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## INTRODUCTION

Electrical injuries are a complex form of trauma that is often associated with high morbidity and mortality. The severity of the injuries depends upon the type of current, An isolated tendon severing following a electrical shock is an exceptional circumstance.

In our study, we will discuss the case of tendon severing of the flexor pollicis longus.

### Clinical History

A 24-year-old male, with no medical history, was admitted for open trauma of the right hand due to high-voltage electrical shock, in a work-related accident.

### Physical Exam

#### Clinically the Patient was stable

Upon inspection of the right hand we find multiple lesions of burns on the palmar side associated with a flexion deficit of the interphalangeal joint of the thumb, with no sensory deficit.

Paraclinical evaluations showed

- EKG: no abnormalities
- CPK: 500 UI/l
- Hand X-ray: no abnormalities.

### Surgical Findings

Surgical exploration revealed total severing of flexor pollicis longus, with the no vascular or nerve damage. The procedure consisted of repairing the tendon with a 4/0 prolene suture, reinforced with a 6/0 prolene,

followed by immobilization with a dorsal splint holding the finger in slight flexion, with the M.P. at 60° and the I.P. at 30° flexion.



**Figure 1: pre op picture showing multiple skin lesions following electrical shock**



**Figure 1: per op picture showing a severing of the FPL tendon following an electrical shock**

Post op rehabilitation

**0-3 week post Op:**

Begin passive flexion to each digit joint and active digit extension within limits of splint, Therapist supervised wrist extension only with digits maintained in full passive flexion.

**On 3<sup>rd</sup> week:**

Adjusting splint with wrist to neutral position and Begin 'place and hold' exercises for digit flexion with wrist in 30 degrees extension.

**4 weekpost op:** move to to active digit flexion if evidence of early scar adhesions

**6 week post op:** remove the blocking splint and begin strengthening.

## DISCUSSION

Electrical injuries are a complex form of trauma that is often associated with high morbidity and mortality. The severity of the injuries depends upon the type of current, the voltage, and the resistance. This activity will review the pathophysiology behind

electrical burns and explain the role of the interprofessional team as they evaluate and treat these complex patients [3].

An individual that has experienced an electrical injury may present with a variety of complaints or issues, and these may include cardiac arrhythmia or arrest, respiratory arrest, coma, blunt trauma, or an assortment of burns.

Lesions caused by the passage of high-voltage electric current are severe and depend on the various parameters characterizing contact with the conductor.

The lesions observed this accidents are therefore of two kinds: some result from the depolarization induced by the passage of the electric current, others from the heat it gives off in proportion to the resistance of the tissues crossed. [2]. These were mainly work related accidents involving electricians, due to safety fails.

Lesions resulting from high-voltage shocks are often extensive and deep. On the other hand -voltage injuries spread out over a smaller areas but can often result in the same amount of damage as high-voltage injuries.

In our case, the patient suffered from a low voltage accident which resulted in minimal skin damage, concealing behind it a severing of the long flexor of the thumb, Treatment initially consisted of stabilization of the general condition, with surgical treatment consisting of a necrosectomy and surgical repair.

## CONCLUSION

Severing of a tendon following an electrical shock is a rare occurrence, after eliminating any vital medical emergencies, surgical management include exploration wound debridement and tendon repair followed by functional rehabilitation.

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