

# Abseiling Injuries - A Review of the Literature and Case Report of Abrasion Injury Down to the Flexor Tendons

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## Introduction

Abseiling is a popular sport carried out worldwide. Injuries following abseiling are common and participants and clinicians must be aware of the potential hazards and risks involved and consequences of not using appropriate protective equipment. We report on a severe abrasion injury, which resulted in soft tissue loss down to the level of the flexor tendons in the fingers. This injury occurred following amateur abseiling under the influence of alcohol. Alcohol consumption will reduce protective sensation leading to potentially devastating injuries, as is demonstrated in this case [1]. This, in turn, can have major consequences for the individual concerned, and will impact on other areas in their life [2].

## Case

A 20-year-old right hand dominant engineer presented to our trauma clinic with bilateral hand injuries. The night before he had attempted to abseil down to the side of a city centre river using only his bare hands and a ~0.5 cm nylon rope. In an attempt to cross the river he and his friend were trying to get to a platoon in order to float across the river in a wooden cabinet.

On clinical examination there were full thickness abrasion injuries exposing the flexor tendons of the fingers of the left hand and partial thickness injuries to the fingers of the right hand (Figures 1 and 2). The fingers were all well perfused. Sensation was reduced to the left index, middle and little fingers. All tendons were intact clinically. No other significant injuries were identifiable on clinical examination.

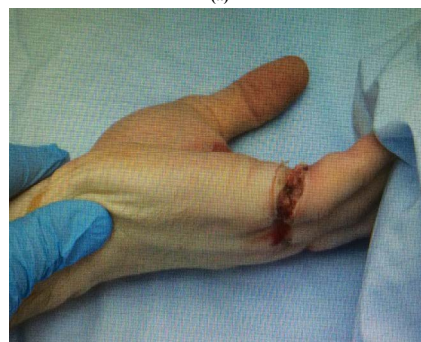
Intraoperatively, there was 60% division of the flexor digitorum profundus (FDP) and 80% division of the flexor digitorum superficialis (FDS) to the left index finger. The FDP was repaired with 4/0 PDS and FDS was left unrepaired. A distal to proximal transposition (can we give a bit more information about this flap? I wonder if it might be better to simply say "a local flap") flap was raised to cover the skin defect of this same finger. The defect affecting the ring finger was reconstructed using a hypothenar full thickness skin graft. His little finger was debrided and his extensor repaired at zone 4. All other defects were cleaned and debrided and left to heal by secondary intention. He was dressed with non-adherent dressings, wool and crepe bandages and was discharged the following day with oral antibiotics and strict left hand elevation. At one week post op (Figure 3), the hands were cleaned and redressed. There were no signs of infection and the wounds were healing well. The patient also underwent a course of physiotherapy to avoid stiffness and contractures developing. By six weeks the wounds had fully healed and the patient had recovered a full range of movement (Figures 4 and 5).

## Discussion

Friction hand burns are commonly caused by treadmills and vacuum cleaner in children, and industrial and road traffic accidents in adults [3]. Of these, dorsal injuries have been classified and management proposed according to severity. FTSG have been used with good



1(a)



1(b)

**Figures 1:** Abrasion injuries exposing the flexor tendons of the fingers of the left hand and partial thickness injuries to the fingers of the right hand.

results [3]. Injuries that occur to those people who partake in extreme sports such as abseiling and mountain sports relate to many factors including equipment, environmental factors behavioral events and time pressures [4,5]. This case serves to highlight the potential consequences of failing to adequately prepare when undertaking such activities.

This is the first report in the literature of full thickness abrasion injuries on the volar aspect, down to the flexor tendons as a result of abseiling. This informative case reveals the potential extent and degree of injury that can occur if protective gloves and appropriate equipment and safety measures are not used when abseiling. A good outcome can be achieved in such cases with the appropriate use of skin grafts and local flaps combined with secondary intention healing and physiotherapy.

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Received February 19, 2015; Accepted February 25, 2016; Published February 29, 2016

Citation: Grau JT, Dickson JK, Wilson S (2016) Abseiling Injuries - A Review of the Literature and Case Report of Abrasion Injury Down to the Flexor Tendons. J Trauma Treat 5: 292. doi:10.4172/2167-1222.1000292

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**Figure 2:** The patient was admitted for elevation, intravenous antibiotics and emergency surgery to clean and debrided the wounds.



3(a)



3(b)

**Figures 3:** 1 week post operation 1.



**Figure 4:** 6 weeks post operation 1.



**Figure 5:** 6 weeks post operation 2.

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