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Clinical Practice

Torture-induced hand electrical injury: A case report

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ABSTRACT

The authors report an unusual case of hand electrical injury related to torture in a war refugee. The patient was referred for the reconstruction of bilateral hand function several years after being tortured. He presented with severe hand contractures combined with motor and sensory loss. After nonoptimal treatment in the acute period, the reconstruction options were limited by the delayed management. This unique clinical presentation can be explained by repetition of prolonged electrical shocks using a low-voltage current.

1. Introduction

Nowadays, torture is still practiced on detainees in certain countries with various purposes such as obtaining information, punishment, intimidation, or for any reason based on discrimination of any kind.[1] The typical objective of torture is inflicting maximum pain without causing serious injury or death.[2] Clinical examination of the victims usually reveals few signs suggestive to the torture allegations.[2–4]

The authors describe the unusual case of a war refugee who declared having been tortured and presented with long lasting sequelae of severe bilateral hand electrical injury. The purpose of this report is to point that such electrical injuries can be correlated with allegations of torture, and to demonstrate the challenges of their delayed management.

2. Case study

In 2018, a 32-year-old male patient was referred to the Reconstructive Surgery Project (RSP) established in Amman, Jordan for the restoration of bilateral hand function. He claimed to have been victim of electrical shock torture in a nearby country. He alleged having sustained many torture sessions while detained in a prison during 36 months between 2011 and 2013. He was a right-handed scaffolder without any health problem before that. He was unable to recall receiving any surgical treatment during his incarceration because of memory impairments due to a posttraumatic stress disorder (PTSD). After he moved to Jordan as a war refugee in 2014, his right hand had been operated on to perform late neurolysis of the median and ulnar nerves, flexor tendon lengthening, and soft-tissue coverage of the volar wrist with a pedicled ulnar flap.

At admission to the RSP he still presented with severe deformities of both hands related to an old electrical injury. The left hand was the more severely injured one, showing full extension contracture of the metacarpophalangeal (MCP) joints, flexion contracture of the proximal interphalangeal (IP) joints superior to 100°, distal IP joints fixed in slight flexion, and complete sensory loss in the median and ulnar nerves' distribution. In comparison, the sensory deficit was partial and joints contractures were less severe in the right hand that had been already operated on: MCP joints could be actively flexed 40°, but proximal and distal IP joints were fixed in 90° and 40° flexion respectively (Fig. 1a). Multiple fasciotomy scars were noticed: three 5 cm-length scars on the dorsal aspect of both hands, and one 20 cm-length-scar on the dorsal and radial aspect of his left forearm (Fig. 1b). Burn scars on the volar aspect of the left wrist and on the medial aspects of both ankles testified to the electrodes' locations. The skin contracture of the left wrist was associated with underlying flexor tendons adhesions. Ankle scars were circular, on an area of about 30 cm^2, and had two distinct colors: white in the center and brown at the edge (Fig. 1c).

After discussing realistic surgical outcomes with the patient, he underwent revision tenolysis of flexor tendons, release of the long fingers MCP and IP joints, and an extensor indicis proprius opponensplasty on the right hand. In 2019, one year after this last procedure, the right hand exhibited intact sensation to gross touch in the median and ulnar nerves'

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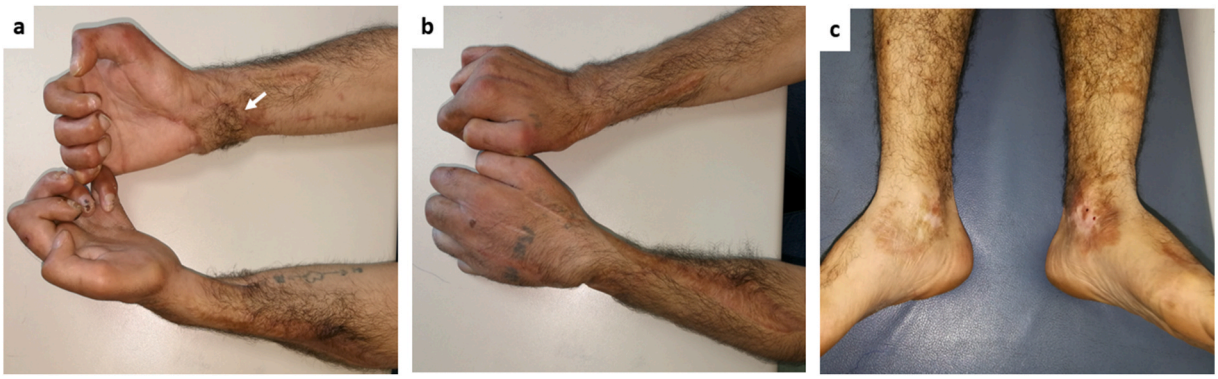

Fig. 1. Volar (a) and dorsal (b) aspects of both hands showing contractures with evidence of fasciotomies: soft-tissue coverage of the right volar wrist was achieved by a pedicled ulnar flap (arrow). Burn scars on the medial aspects of both ankles (c).

distribution, useful thumb opposition, and strong active MCP flexion of 70°. However, proximal IP joints remained fixed in 90° flexion. The left hand still presented with fixed contracture and a major degree of sensory loss. Even though the patient recovered independence and function, he could not find a job as a refugee. Because of an imminent return to his home country, the decision to operate on the left hand was suspended.

3. Discussion

This dramatic story first demonstrates that electrical shock torture can produce long lasting physical and psychological disabilities. Such a kind of torture is often used during interrogation, but its pathology has not been well-described.[2–5] Usually a low-voltage current is applied repeatedly between electrodes located in various parts of the body using water to facilitate the electricity flow penetration into the body.[5] This method typically does not leave physical evidence.[3,4] Here, the electrodes were applied to the wrists and ankles while the patient was attached to a metallic chair placed in a large basin of water. Although low-voltage injuries produce relatively minor superficial skin burns or transient peripheral neurologic symptoms, this patient had sequelae of severe hand electrical injuries close to those resulting from accidental contact with high-voltage power lines.[6,7] This was probably explained by the repetition of prolonged electrical shocks and the use of water as a conductor. These specific injuries combined to the burn scars at the electrodes' location left little doubt about the trauma mechanism and permitted to corroborate the patient statements.

This case study also highlights the challenges of torture-related electrical hand injury management. In this specific setting, primary surgical cares were obviously nonoptimal, with probable late fasciotomies, and brought severe functional sequelae. Thereafter, the delayed presentation has jeopardized joint contractures and nerve injuries treatment.[7] Finally, as often found in victims of torture, this patient presented with a PTSD that also compromised his reintegration into society.[3,4]

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Details of informed consent

The patient was informed that data concerning the case would be submitted for publication, and he provided consent.

Declaration of competing interest

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