

The Shoelace Technique after a Forearm Fasciotomy

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1. Clinical Image

Deep burns that reach the subfascial planes of the limbs, increase the pressure in the muscular compartments, and may progress to a Compartment Syndrome. There is no specific cut-off value of pressure for this diagnosis; consequently, the final decision to proceed with a fasciotomy relies on the clinical experience. Surgical debridement and fasciotomy may result in large wounds, sometimes difficult to close. Grafts and flaps result in another wounds and carry a risk of pain, infection, scar shrinking and necrosis.

We present the case of a male patient, 37years old. Injury mechanism: firework burst on the right forearm. Injury: large area of carbonization of the muscles of the flexor compartment (Figure 1). Signs and symptoms: intense pain in the hand and forearm with local oedema and tension. Treatment: surgical debridement and fasciotomy of this compartment; followed by deferred and progressive primary closure by means of rubber bands that were tightened as the oedema diminished – shoelace technique (Figure 2). Evolution: discharged from hospital on the 8th post-operative day; follow-up at 3rd (Figure 3) and 6th month without functional impairment, with a



Figure 1: Photograph taken in the Emergency Department showing the large area of carbonization of the muscles of the flexor compartment of the right forearm.

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good healing evolution.

The diagnosis of a limb Compartment Syndrome is almost always a clinical one and requires a high index of suspicion so as to the fasciotomy is done in time. The shoelace technique is a simple, reproducible and cost-effective method of deferred closure of a large wound, preserving functionality and resulting in a good final cosmesis [1,2,3].



Figure 2: Photograph taken in the Operating Room showing the use of the shoelace technique, a few days after the fasciotomy.



Figure 3: Photograph taken in the 3rd post-operative month.

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