Institute of Experimental Morphology, Pathology and Anthropology with Museum
Bulgarian Anatomical Society

Acta morphologica et anthropologica, 26 (1-2)
Sofia ● 2019

A Case of an Uncommon Injury of the Index Finger

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Herein we present a case of a traumatic injury to the right index finger by an electric screw gun. The screw entered the finger through the medial part of the proximal interphalangeal joint and ended in the middle phalanx, therefore we will discuss bone damage. We point out the approach for immediate treatment, including the use of a screwdriver in order to extract the screw.

Key words: traumatic injury, index finger, surgery

Introduction

The hand is the most commonly injured part of the body. Primary care physicians must routinely manage patients with acute traumatic hand injuries involving retained foreign bodies and puncture wounds. During physical examination, a thorough inspection with comparison to the uninjured hand should be performed. Abnormal positioning, angulation or rotational deformity should be noted and physicians have to document the motor function and to perform tests of tendons and ligaments [3]. If surgical removal of a foreign body or surgical exploration of a wound is decided upon, the procedure must be performed after detailed X-ray analysis, treated with an antibiotic and reviewed multiple times after the manipulation in order to prevent later complications. On the other hand, when foreign bodies have unusual form, like fishhooks, specific techniques are required. Careful evaluation of the surrounding tissue before attempting removal is of great importance and the method depends mainly on the type of foreign body embedded, the location of the injury and the depth of tissue penetration [2].

Case report

A 39-year-old male attended the Emergency Room in the University Hospital "Queen Giovanna" in Sofia with a traumatic injury to his right index finger. The accident hap-

pened when the patient attempted to assemble a wardrobe and instead of attaching a metal screw to a piece of wood, he managed to pierce his finger. The point of entry (**Fig. 1**) was the medial aspect of the proximal interphalangeal joint of the right index finger and the end was on the flexor aspect of the middle phalanx. During X-ray analysis it was observed that the screw pierced through the bone. After local anesthesia was achieved the physician decided to use a screwdriver instead of surgical instruments. The idea was to minimize damage to the collateral tissue by unscrewing the screw and therefore follow the same path that it took during the injury. With minimum effort, the screw came out (**Fig. 2**). A standard procedure was followed afterwards: the wound was washed out, disinfected and bandaged. The patient was let go, treated with antibiotic and reviewed twice after the manipulation, with no more complications.

Fig. 1. **a**) Photograph of the right hand after injury with the screw entering the finger through the medial part of the proximal interphalangeal joint; **b**) Anterior posterior view of the right hand; c) Oblique view of the right hand.

Fig. 2. a) Anterior posterior view of the right hand after screw removal; **b**) Oblique view of the right hand after screw removal; **c**) Photograph presenting the full-length of the screw with the glove patch remaining pierced.

Discussion

The characteristics of simple solutions include brilliance too. The aim of documenting this clinical case was to emphasize on the importance of always seeking the simplest approach in the Emergency Room or any other department, and also in life, which sometimes requires more knowledge and experience than that confined to the

strict medical practice. In managing any injuries of the hand, the basic principles of fracture management are the same whether treatment is closed or open, but special situations require amendments to the well-known methods [1]. It is also of great significance to turn the attention of the specialists to classifying each case as unique and to think of the best way to treat the specific injury, extend their boundaries and eventually use simple and everyday methods. For example, in some cases conservative surgical approach with a "pull and see" policy was adopted successfully. Extraction can be achieved using the mechanical advantage of the lever principle. With this method, while removing the object any movements of sharp edges which will cause secondary damage can be reduced to a minimum [4]. However, trying new methods demands careful examination of the injury, consulting with other specialists and monitoring the patient's condition to determine, whether it has improved or worsened.

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