

DELAYED DIAGNOSIS OF HIGH-PRESSURE INJECTION INJURIES TO THE FINGER A CASE REPORT AND REVIEW OF THE LITERATURE

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High-pressure injuries to the finger are often underestimated. Nevertheless, early diagnosis and debridement are absolute requirements to save the finger and to restore function. Delayed diagnosis may lead to severe infection and often ends in amputation.

Keywords : finger ; high-pressure injury.

Mots-clés : doigt ; injection sous pression.

INTRODUCTION

High-pressure injection injuries to the finger usually affect young male workers (2, 5). At the initial presentation, there is often a small skin lesion at the tip of the finger. This benign appearance often masks the extent of the lesion underneath (3).

The factors that influence the final outcome are several. The type of material injected, as well as the initial treatment, determine the final result (3). An acute reaction usually occurs with paint spray (2). Oils cause less intense inflammatory reactions but lead to necrosis, fibrosis and draining sinuses.

CASE REPORT

A 30-year-old man was referred to the clinic 4 weeks after sustaining a high-pressure oil injection to his left index finger. Oral antibiotics did not improve the situation. He complained of progressing pain and had a slight fever of 37,5° C.

On clinical examination a severe swelling with draining of pus at the tip of the finger was noted. A painful node was felt in the axilla with accompanying lymphangitis.

Radiographs were normal but a CT demonstrated inflammation surrounding the flexor tendons. The complete blood count showed an increased leucocyte count at 12,500 cells/mm³.

The flexor tendon was cleaned and debrided and intravenous antibiotics were given. During the operation, necrotic tissue was found in the subcutaneous layers of the finger. After 2 weeks, the situation had not improved and because of progressive pain with lymphangitis and lymphadenitis, a second ray amputation was performed. The situation after the first debridement is shown in fig. 1.

DISCUSSION

High-pressure injuries to the finger are common in the industrial world. Grease guns, spray guns and diesel fuel injectors are the most common devices responsible for this injury (1). The non-dominant hand is affected in about two-thirds of the cases (2, 5). The initial lesion often appears as a limited superficial lesion, but severe destruction is found underneath.

Radiographic examination is usually normal except when sprays containing lead are injected. Other investigations such as ultrasound or CT scanning can only demonstrate the inflammatory reactions and are not necessary for the diagnosis.

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Fig. 1. — The affected finger 6 weeks after the initial injury and 2 weeks after debridement and intravenous antibiotics.

Early exploration and debridement are the treatment of choice. Local anesthetics or digital blocks cause more swelling and are contraindicated (6).

Because of injection of material into more distant regions, wide exploration is required. Warm saline irrigation is sufficient. Necrosis is often followed by bacterial infection as in our case.

High-pressure injuries are surgical emergencies requiring wide debridement and irrigation with warm saline. Antibiotics have a secondary role in the treatment. If the treatment is delayed, debridement, irrigation and intravenous antibiotics may be insufficient to obtain a good end result. A ray amputation is required as the whole finger is usually affected.

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SAMENVATTING

D. STOFFELEN, L. DE SMET, P. L. O. BROOS.
Laattijdige diagnose van hoge drukspuiten in de vingers.

Letsels veroorzaakt door hoge drukspuiten worden dikwijls onderschat. Nochtans is een vroegtijdige diagnose met onmiddellijk debridement een absolute vereiste om de vinger en zijn functie te bewaren.

Laattijdige diagnose kan aanleiding geven tot ernstige infecties met amputatie tot gevolg.

RÉSUMÉ

D. STOFFELEN, L. DE SMET, P. L. O. BROOS.
Diagnostic tardif des injections sous pression dans les doigts.

Les accidents causés par des injections sous pression sont souvent sous-estimés. Cependant un diagnostic précoce suivi d'un débridement immédiat est une condition absolue pour sauver le doigt et sa fonction.

Un diagnostic tardif peut aboutir à une infection grave requérant l'amputation.