

# Blast injuries of the hand and wrist: a 6-year experience

Authors:  
Student Rokas Paškevičius, Master's degree Mantas Kievišas

LUHS Kaunas clinics department of Plastic and reconstructive surgery

## Introduction

Reckless use of fireworks, self-made bombs or careless behavior with military grade explosives can lead to debilitating hand and wrist structural injuries and burns.

## Results

From 1st January 2014 to 31st December 2019 a total of 387 patients suffered blast hand injuries in all Lithuania and Kaunas clinics combined. The most common cause of blast trauma was firework explosion in hand (78.81% of all blast related injuries). Throughout the years 143 of these patients were hospitalized in all Lithuanian hospitals, most of them in 2018 (n=50). 20.28% (n=29) of all hospitalized patients were children (<18 years). It was calculated that in whole country 26.61% (n=103) of all blast trauma patients were injured in the New Year period (from 31st December to 2nd of January). 53 blast hand trauma patients were treated in in the Kaunas clinics department of Plastic and reconstructive surgery. 16.98% (n=9) patients suffered only a various degree hand and wrist burns, 7.55% (n=4) had only hand and wrist injuries and 75.47% (n=40) suffered both burns and injuries. When analyzing soft-tissue coverage, in 30 cases (56.60%) fasciocutaneous wound covering was performed, 11 patients (20.75%) were treated with primary wound suture, 2 patients (3,77%) received treatment by performing cross finger flaps and 10 patients (18.87%) were treated only by wound dressings. Single surgical intervention was enough for 44 (83.02%) of all patients, 7 (13.21%) patients needed second surgery and 2 (3.77%) needed 3 or more additional operations. The most common reasons for additional surgeries were wound debridement, scar tissue release and deepening of interdigital space.

## Aim

To review and analyze common patterns, demographic data and results of blast hand and wrist trauma.

## Conclusions

Blast injuries to the hand and wrist are usually caused by firework explosions. Most of these patients suffered not only structural damage but burns as well. More than half of injured patients were treated by fasciocutaneous wound covering which in most cases was the only procedure necessary.

## Methods

A retrospective study was conducted on patients treated in all Lithuanian hospitals and separately in Kaunas clinics. Demographic data was investigated in both all Lithuanian hospitals and Kaunas clinics but the more in-depth analysis on injured hand structures (bones, joints, tendons, arteries, nerves, skin) and treatment (wound dressing, primary sutures, fasciocutaneous wound covering, cross finger flaps) was performed only on patients treated in Kaunas clinics. Data from all Lithuanian hospitals were provided by the Lithuanian Institute of Hygiene [1]. Kaunas clinics data about the extent of injuries was obtained from physical and virtual patient medical histories provided by the department of statistics and archive of Kaunas clinics. Analysis was performed using SPSS 22.0 software package. Normality of data was checked by the Shapiro-Wilk and Kolmogorov-Smirnov test. Quantitative data were expressed as mean values.

## Contacts

✉ Email: [rokaspaskevicius@gmail.com](mailto:rokaspaskevicius@gmail.com)

☎ Phone number: +37068223042

## References:

1. Lithuanian Institute of Hygiene. Data counted from compulsory health insurance information system "Sveidra".