

## Poison Beneath The Skin

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### INTRODUCTION:

High pressure injection (HPI) injuries are getting more common nowadays due to advancement of our industrial technologies. These injuries appeared as innocuous punctate wounds, and patient usually present with minimal pain. This has resulted in misinterpretation of the severity of the injury.<sup>1</sup>

### CASE REPORT:

We present a case of a 19-year-old Indonesian laborer who accidentally sprayed water-based heated paint over his left thumb. Post trauma he sustained a small puncture wound over his left thumb associated with pain and swelling over the first web space and thenar region.

Local examination of left hand showed a small 0.2x0.2cm puncture wound left thumb with swollen left thumb from the tip extending to thenar region. Compartment of thumb and thenar region was erythematous and swollen but soft. Range of motion was limited at MCPJ (metacarpophalangeal joint) of the left thumb.



Fig 1: Initial presentation of the left thumb.



Fig 2: X-ray of his right hand revealed presence of foreign material extending from puncture site to the thenar region

Wound debridement was performed 12 hours post trauma and a second debridement was done 48 hours later. Intra-operatively emulsion paint which was rubbery in consistency was found dissipated along the neurovascular bundle tract of the thumb up till the 1st web space almost reaching the neurovascular bundle of the index finger.



Fig 3: Intraoperative images.



Fig 4: Post-operative X-ray.

Patient was discharge well after 4 days of hospitalization with antibiotics .ROM of thumb was still limited due to pain. Sensation over ulnar side was intact however radially sensation was loss. CRT < 2 secs.

### DISCUSSION:

High pressure injection forces the foreign material dissipates through the poorly distensible digital or palmar tissues. This leads to diffusion of materials along the fascial planes, tendon sheaths, and neurovascular bundles with resultant significant damage. Neurovascular bundles are the commonest plane as it has the least resistance.<sup>1,5</sup> The injected material has many hazardous effects towards our tissue such as direct toxic effect of the involved chemical, high-velocity mechanical impact and ischemia secondary to raised pressure into the closed digital space.<sup>2</sup> Initial management of HPI injuries at the emergency department should start with elevation of the affected limb, administration of tetanus toxoid prophylaxis, broad-spectrum antibiotics, and analgesia. Digital blocks should not be done because this may cause more swelling and vasospasm in a digit that is already at risk. Wounds should be left open, with no attempt to obtain primary closure in the emergency department setting. Ice compression is discouraged to optimize perfusion of the injected hand.<sup>1</sup>

Early decompression and debridement of the foreign material from the digits should be done to avoid ischemic gangrene and reduce

ABSTRACT TRUNCATED