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Figure 1. Penetrating wound in the left hand of a 59-year-old professional painter, with unrelated Dupuytren's disease of the small finger.

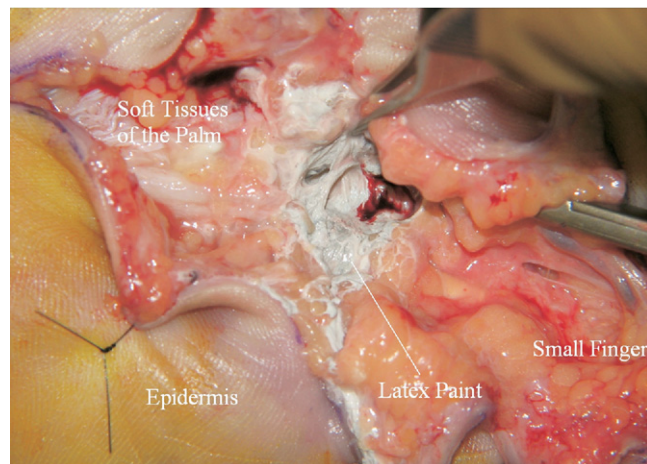


Figure 2. Intraoperative photograph revealing a significant amount of latex paint within the soft tissues of the palm. Used with permission of Lee E. Edstrom, MD, Department of Plastic Surgery, Rhode Island Hospital, Providence, RI.

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A 59-year-old right-handed professional painter presented to the emergency department with complaint of pain in the left hand. Approximately 2 hours before arrival, he was cleaning his high-pressure paint gun when it accidentally fired into his left palm. Physical examination revealed a small puncture wound at the distal palmar crease on the ulnar aspect of the left palm, with mild erythema and tenderness around the wound (Figure 1). Scar and skin retraction at the base of the small and ring fingers was also observed, which the patient said was longstanding and unrelated to the acute injury. Radiograph of the left hand revealed no fracture or radiopaque foreign body. The left hand was splinted and elevated. Intravenous antibiotics, analgesics, and tetanus prophylaxis were given. Hand surgeon consultation was obtained and the patient underwent urgent exploration of the hand in the operating room.

For the diagnosis and teaching points, see page 167.

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DIAGNOSIS:

High-pressure paint injection injury and unrelated Dupuytren's disease. Despite the innocuous early appearance of many high-pressure injection injuries, they are associated with a high rate of significant functional impairment and amputation.¹ The key to treatment is recognition of the severe nature of this injury and urgent surgical decompression and debridement to avoid extensive tissue destruction. The likelihood of amputation increases if debridement is delayed more than 6 hours.² Our patient was taken urgently to the operating room for surgical decompression, debridement, and irrigation. A significant amount of latex paint was debrided from the soft tissues of the palm (Figure 2). The patient's Dupuytren's disease was excised incidentally to facilitate the debridement. The patient did well postoperatively and was discharged home, with arrangements for outpatient hand therapy.

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DIAGNOSIS:

Traumatic asphyxia. Traumatic asphyxia, or Perthes syndrome, is characterized by the presence of subconjunctival hemorrhage, cervical/facial petechiae and edema, and cyanosis secondary to severe compressive forces applied to the torso (farm- or work-related crush injuries).¹⁻³

The pathophysiology of traumatic asphyxia involves distention of the superior vena cava and its tributary veins, with resulting capillary paresis, with or without capillary rupture.¹ The predominant involvement of the head, neck, face, and upper thorax has been postulated to be due to the incompetent valves of the innominate and jugular veins.^{1,4}

Other clinical findings observed in patients with traumatic asphyxia include sore throat, hoarseness, hemoptysis, hemotympanum, dizziness, numbness, and headaches.³ In general, the skin discoloration and subconjunctival hemorrhage associated with traumatic asphyxia usually resolve within 1 month.³

It is not unusual for patients with traumatic asphyxia to have associated significant head (67%), thoracic (58% to 79%), or abdominal (50%) injuries.^{2,3,5-7} Cerebral injury may be present after a prolonged period of asphyxia and is usually secondary to cerebral hypoxia.⁸

Death is rarely due directly to the traumatic asphyxia itself, and the treatment and outcomes of patients with traumatic asphyxia is usually based on associated injuries.^{1,3} In cases of isolated traumatic asphyxia, oxygen supplementation and head elevation to 30 degrees constitute the mainstay of treatment.³

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