A case of impalement injury of finger

May H Ohn ,¹ Khin M Ohn²

¹Emergency Department,
Sandwell General Hospital,
Birmingham, UK

²Department of Surgery,
Universiti Malaysia Sabah, Kota
Kinabalu, Sabah, Malaysia

Correspondence to
Professor Khin M Ohn;
drkmgohn@ums.edu.my

Accepted 8 November 2020

DESCRIPTION

A 90-year-old man, with Parkinson's disease, presented to the emergency department with a penetrating finger injury that was caught in the door-handle after a fall. He couldn't recall the detailed mechanism of fall, but he lost his balance and fell backwards while holding the door-handle with his right dominant hand. The handle had passed through and through the palmar aspect of the proximal phalanx from medial to lateral aspect in his right middle finger ([figure 1](#)). The paramedics had unscrewed and taken off the door handle from the door which was still attached to the finger. On examination, he was able to move his middle finger and had no distal neurovascular deficit. The capillary refill time was less than 2 s and there was minimal bleeding from the wound. There was no fracture in the hand radiograph. After a preliminary assessment, the impaled object was removed successfully under a digital nerve block using an aseptic technique in the emergency department and the wound was then irrigated with normal saline under pressure. His tetanus vaccination was updated and a prophylactic antibiotic of co-amoxiclav 625 mg was administered. The wound was then reviewed after 48 hours and a delayed primary closure was performed. The patient had regained good hand function after

Learning points

- ▶ Controlling the active haemorrhage, minimal manipulation of the impaled object, immobilisation by splinting, collection of the vital signs and administration of adequate analgesia are the essence of prehospital management for penetrating hand injuries.
- ▶ Emergency clinician can perform timely removal of an impaled object from extremity using adequate regional nerve block without any sequelae due to the minimal tissue damage leaving all neurovascular structures being intact.
- ▶ Multiple factorial risk factors contribute to elderly fall that can sustain the horrible door-handle penetrating finger injury.

physiotherapy and the wound healed unremarkably at the follow-up.

Penetrating hand injuries due to doors and door-related injuries have been infrequently reported.¹ To our knowledge, an unusual penetrating finger injury with a door-handle has not previously been reported in the literature. First of all, the principles of prehospital management of penetrating finger injuries are controlling the active haemorrhage, minimal manipulation of the impaled object, immobilisation by splinting, collection of the vital signs and administration of adequate analgesia that are essential steps before the transfer.² Removal of impaled foreign body from extremities in the field environment is relatively unsafe to do so due to the risk of additional trauma like a neurovascular injury. It can also cause uncontrolled bleeding in the field especially in the patient who is taking an anticoagulant. Second, an emergency clinician should rapidly intervene in the removal of an impaled object safely to reduce risk of infection. Minimal tissue damage leaves all neurovascular structures intact. Lidocaine with or without epinephrine has been used for digital nerve block in treating penetrating finger injuries. Although it has been suggested that wound debridement, wash out and exploration should be performed for impaled objects under adequate anaesthesia in the theatre,^{3,4} our patient was treated conservatively with a good outcome. Third, environmental hazards, balance and gait impairments are multifactorial risk factors for fall and sustaining a penetrating injury in the elderly population. Pointed door handles have been reported to impose penetrating injuries among children⁵ and elderly people.¹ It is important to replace all sharp edges with specially designed soft grips to reduce the injury. Good lighting will keep the elderly ones safe.

Figure 1 Impaled door handle in the proximal phalanx of the right middle finger.

© BMJ Publishing Group Limited 2020. No commercial re-use. See rights and permissions. Published by BMJ.

To cite: Ohn MH, Ohn KM. *BMJ Case Rep* 2020;**13**:e239234. doi:10.1136/bcr-2020-239234

Contributors MHO is involved in writing up the case and KMO is contributed in the literature review.

Funding The authors have not declared a specific grant for this research from any funding agency in the public, commercial or not-for-profit sectors.

Competing interests None declared.

Patient consent for publication Next of kin consent obtained.

Provenance and peer review Not commissioned; externally peer reviewed.

ORCID iD

May H Ohn <http://orcid.org/0000-0002-1951-6598>

REFERENCES

- 1 Singiseti K, Kokkinakis M, Shankar N. Penetrating injury of the hand with a door handle: a case report. *J Med Case Rep* 2008;2:1–3.
- 2 Bowen WT, Slaven EM. Evidence-Based management of acute hand injuries in the emergency department. *Emerg Med Pract* 2014;16:1–25.
- 3 Morgan T. Butler sand Schwab cw. impalement injury: case study and management guidelines. *Crit Care Nurse* 1988;8:82.
- 4 Shagoury C, Fazio J. Case review. the management of impalement injury. *Emerg Nurs* 1990;16:379.
- 5 Chaudhry IA, Al-Sharif AM, Shamsi FA, *et al.* Severe ocular injuries from pointed door handles in children. *Ophthalmology* 2005;112:1834–7.

Copyright 2020 BMJ Publishing Group. All rights reserved. For permission to reuse any of this content visit <https://www.bmj.com/company/products-services/rights-and-licensing/permissions/>
BMJ Case Report Fellows may re-use this article for personal use and teaching without any further permission.

Become a Fellow of BMJ Case Reports today and you can:

- ▶ Submit as many cases as you like
- ▶ Enjoy fast sympathetic peer review and rapid publication of accepted articles
- ▶ Access all the published articles
- ▶ Re-use any of the published material for personal use and teaching without further permission

Customer Service

If you have any further queries about your subscription, please contact our customer services team on +44 (0) 207111 1105 or via email at support@bmj.com.

Visit casereports.bmj.com for more articles like this and to become a Fellow