

Entrapment of ampoule fragments into gloves: A potential threat to patient's safety

Sir,

Most drugs used in the operation theatres are packaged in glass ampoules as they ensure clear visibility of the drugs, no reaction with medications and the ability

to vacuum seal.^[1] However, use of the glass ampoules has its own inherent risks. The glass ampoules require to be broken before loading the drugs into syringes. It is a common practice to don the gloves and break the ampoules to protect one's hands. However, it has been our observation that occasionally, a few broken shards of glass may remain stuck to the gloves, imposing a potential threat to patient's safety during subsequent handling of the patient, especially during airway management. Glass particles may also be injected into the body by intramuscular and intravenous routes, which have been

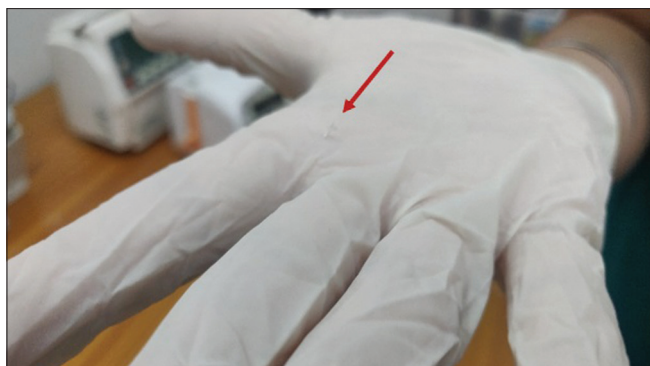


Figure 1: Fragmented glass particle stuck into surgical gloves

reported to be dangerous or harmful to the patients.^[2,3] Apart from severe inflammatory response, injected glass particles can cause systemic effects like embolism, tissue necrosis, sepsis and end-organ damage.^[3,4] Other than glass particles, incidences of iatrogenic foreign bodies that endangered the airway, such as plastic sleeve of a stylet and a metal rivet from the McCoy laryngoscope, have also been documented.^[5,6]

One such incidence was brought to our notice recently where an anaesthesiology resident after loading the neuromuscular reversal drugs immediately proceeded for tracheal extubation of the patient. However, the tiny glass shards clinging to his gloves caught our attention [Figure 1]. The anaesthesiologist was asked to discard his gloves and don the new ones.

This incidence brings to light the potential risk this practice might carry. The shards may accidentally be introduced into the oral cavity of the patient during airway management. This might cause unnecessary discomfort or pain to the patient, the reason for which might remain obscure to us. There could be an inadvertent injury to the eyes as well, while taping or untaping them.

Through this correspondence, we emphasise on using a designated ampoule cutter that produces minimal or no fragments, compared to breaking a glass ampoule with hand. Also, glass ampoules should be broken away from the patient, anaesthesia workstation and the intubation area. Since the shards of glass resulting from breaking of ampoules are frequently tiny and transparent, they might escape observation if they stick on to the gloves. Therefore, for the safety of the patient, the best preventive measure to avoid any such inadvertent harm is to ideally discard the gloves after breaking open glass ampoules. However, usage of new gloves each time can be a costly affair, especially in a developing country. Thus, we recommend very close

observation of the gloves each time after breaking a glass ampoule and before handling the patient.

Financial support and sponsorship

Nil.

Conflicts of interest

There are no conflicts of interest.

Sudhansu Sekhar Nayak, Ushkiran Kaur, Anupama Gill Sharma

Department of Anaesthesiology, ABVIMS and RML Hospital, New Delhi, India

Address for correspondence:

Dr. Sudhansu Sekhar Nayak,
Department of Anaesthesiology, ABVIMS and RML Hospital,
New Delhi - 110 001, India.
E-mail: nayak.sudhansusekhar@gmail.com

Submitted: 04-Dec-2021

Revised: 21-Jan-2022

Accepted: 02-Jun-2022

Published: 21-Jun-2022

REFERENCES

1. Lye ST, Hwang NC. Glass particle contamination: Is it here to stay? *Anaesthesia* 2003;58:93-4.
2. Joo GE, Sohng KY, Park MY. The effect of different methods of intravenous injection on glass particle contamination from ampoules. *Springerplus* 2016;5:15. doi: 10.1186/s40064-015-1632-0.
3. Preston ST, Hegadoren K. Glass contamination in parenterally administered medication. *J Adv Nurs* 2004;48:266-70.
4. Lee KR, Chae YJ, Cho SE, Chung SJ. A strategy for reducing particulate contamination on opening glass ampoules and development of evaluation methods for its application. *Drug Dev Ind Pharm* 2011;37:1394-401.
5. Puthenveetil N, Paul J, Ravichandran S, Rajan A. Iatrogenic tracheal foreign body, plastic sleeve of stylet. *Indian J Anaesth* 2021;65:629-30.
6. Jain A, Naithani M, Chaudhary Z, Sharma P. Rare iatrogenic airway foreign body: The rivet from the fulcrum of the McCoy laryngoscope blade. *Indian J Anaesth* 2012;56:301-2.

This is an open access journal, and articles are distributed under the terms of the Creative Commons Attribution-NonCommercial-ShareAlike 4.0 License, which allows others to remix, tweak, and build upon the work non-commercially, as long as appropriate credit is given and the new creations are licensed under the identical terms.

Access this article online	
Quick response code	Website: www.ijaweb.org
	DOI: 10.4103/ija.ija_1037_21

How to cite this article: Nayak SS, Kaur U, Sharma AG. Entrapment of ampoule fragments into gloves: A potential threat to patient's safety. *Indian J Anaesth* 2022;66:472-3.

© 2022 Indian Journal of Anaesthesia | Published by Wolters Kluwer - Medknow