Anesth Pain Med 2023;18:445-446
https://doi.org/10.17085/apm.23069
pISSN 1975-5171 • eISSN 2383-7977

Letter to the Editor

KSAP

Ensuring patient safety: the importance of prompt pathological examination for foreign bodies in intravenous lines

TO THE EDITOR: There has been recent news coverage regarding foreign materials detected in intravenous (IV) fluid bags, and we believe it is important for clinicians to be aware of appropriate protocols to address such events [1]. Depending on the nature of the foreign body, patients could develop complications including phlebitis or pulmonary embolization, even from a minor particle entering the body intravenously via the IV line or fluid [2,3]. Therefore, we would like to share a relevant news story and a case report from 2020 and provide suggestions for effectively managing and responding to such incidents [4].

In this news story, the patient and their family noticed a black foreign material in the IV fluid bag after approximately 200 ml of a prescribed 1,000 ml fluid had been infused [1]. They complained to the assigned nurse, who explained that a rubber syringe stopper might have inadvertently entered the IV fluid bag. The hospital replaced the fluid bag and IV line without conducting an analysis of the foreign material or seeking a more comprehensive explanation. This outraged the patient and their family, who reported the incident to the press.

In a different case, the patient complained that there was a worm in the IV patient-controlled analgesia line [4]. The authors promptly retrieved the suspected material from the IV line and arranged for a pathological examination. The subsequent report revealed that the foreign material, initially thought to be a worm by the patient, was in fact, a fibrin clot formed due to the backflow of blood from the patient's IV line, despite the presence of a non-return valve.

Reports of foreign bodies being discovered in the IV fluid sets are on the rise, and it is important to follow appropriate protocols for managing such incidents [5]. According to the Enforcement Regulations of Medical Device Act, if foreign substances are detected in a medical device, it is mandatory to determine the source of the contamination, and it is obligatory to submit an incident report to the Minister of Food and Drug Safety. The outcome can vary drastically depending on how the situation is managed. The authors of the case report initially could not imagine that the foreign body was a fibrin clot, and the patient and the family were upset because the foreign body resembled a worm or larva. However, the prompt pathological examination provided conclusive evidence of the nature of the foreign body, convincingly assuaging the concerns of the patient and the family. They were satisfied with the result and did not raise any further complaints.

Unfortunately, the case covered in the news did not have a similar outcome. Even though the foreign body was an (unconfirmed) rubber particle, which might have been less distressing for the patient or their caregiver compared to the worm or larva (mentioned in the case report), the patient was still upset. It is important to note that the precise nature of the foreign material found on the IV line in the aforementioned case cannot be confirmed as a rubber material without undergoing a proper examination. Therefore, the authors recommend that in cases where foreign bodies are detected in an IV line, an immediate pathological examination be conducted, and an incident report be submitted to the Minister of Food and Drug Safety to prevent unnecessary misunderstandings between medical professionals and patients. This practice is crucial for mitigating the potential for legal disputes.

Min Hee Heo, Sang Il Lee, Kyung Woo Kim, and Jun Hyun Kim
Department of Anesthesiology and Pain Medicine, Inje University Ilsan Paik Hospital, Goyang, Korea

Corresponding author: Jun Hyun Kim, M.D., Ph.D.
Department of Anesthesiology and Pain Medicine, Inje University Ilsan Paik Hospital, 170 Juhwa-ro, Ilsanseo-gu, Goyang 10380, Korea
Tel: 82-31-910-7160 Fax: 82-31-910-7184 E-mail: ishmael@paik.ac.kr

Received: June 2, 2023; **Revised:** August 22, 2023; **Accepted:** August 23, 2023

FUNDING

None.

CONFLICTS OF INTEREST

Jun Hyun Kim is the current deputy editor, of *Anesthesia*

and Pain Medicine. However, he was not involved in the peer reviewer selection, evaluation, or decision process of this article.

AUTHOR CONTRIBUTIONS

Conceptualization: Jun Hyun Kim. Writing - original draft: Min Hee Heo. Writing - review & editing: Sang Il Lee, Kyung Woo Kim, Jun Hyun Kim.

ORCID

Min Hee Heo, https://orcid.org/0000-0002-2469-8445
Sang Il Lee, https://orcid.org/0000-0003-0315-1659
Kyung Woo Kim, https://orcid.org/0000-0003-1447-9385
Jun Hyun Kim, https://orcid.org/0000-0002-9466-8399

REFERENCES

1. "Foreign matter" in the fluid. The hospital is 'ok'. Jeonju MBC [Internet]. [cited 2023 Jun 2]. Available from https://www.jmbc.co.kr/news/view/31364.
2. Gschwind CR. The intravenous foreign body: a report of 2 cases. J Hand Surg Am 2002; 27: 350-4.
3. Zuccarini F, Baeckelmans I, Schmartz D. Coring in parenteral preparations: A safety problem that needs more attention and vigilance. Eur J Anaesthesiol 2022; 39: 476-7.
4. Kim JH, Kim JY, Park YS, Kim KT, Lee SI, Heo MH. Fibrin clot mistook as a worm in the intravenous line. Yonsei Med J 2020; 61: 267-9.
5. The number of foreign substances detected in syringes and infusion sets increases every year. Medical Device News line [Internet]. [cited 2023 Jun 2]. Available from http://www.kmdiannews.com/news/articleView.html?idxno=40898.