



## OPEN ACCESS

## EDITED BY

Pietro Enea Lazzerini,  
University of Siena, Italy

## REVIEWED BY

Odair Alves da Silva,  
Federal University of Pernambuco, Brazil

## \*CORRESPONDENCE

Jung Won Kang  
✉ doctorkang@naver.com

RECEIVED 23 December 2024

ACCEPTED 11 April 2025

PUBLISHED 30 April 2025

## CITATION

Lee S-J, Kim S-A, Kim T-H and Kang JW (2025)  
Commentary: Case Report: Massive  
intrapericardial hematoma following  
acupuncture therapy.  
Front. Cardiovasc. Med. 12:1550391.  
doi: 10.3389/fcvm.2025.1550391

## COPYRIGHT

© 2025 Lee, Kim, Kim and Kang. This is an  
open-access article distributed under the  
terms of the [Creative Commons Attribution  
License \(CC BY\)](#). The use, distribution or  
reproduction in other forums is permitted,  
provided the original author(s) and the  
copyright owner(s) are credited and that the  
original publication in this journal is cited, in  
accordance with accepted academic practice.  
No use, distribution or reproduction is  
permitted which does not comply with  
these terms.

# Commentary: Case Report: Massive intrapericardial hematoma following acupuncture therapy

Sun-Jung Lee<sup>1</sup>, Sung-A Kim<sup>1,2</sup>, Tae-Hun Kim<sup>3</sup> and  
Jung Won Kang<sup>4\*</sup>

<sup>1</sup>Department of Clinical Korean Medicine, Graduate School, Kyung Hee University, Seoul, Republic of Korea, <sup>2</sup>Epidemiology Group, School of Medicine, Medical Sciences and Nutrition, University of Aberdeen, Aberdeen, United Kingdom, <sup>3</sup>Korean Medicine Clinical Trial Center, Korean Medicine Hospital, Kyung Hee University, Seoul, Republic of Korea, <sup>4</sup>Department of Acupuncture & Moxibustion, College of Korean Medicine, Kyung Hee University, Seoul, Republic of Korea

## KEYWORDS

acupuncture, intrapericardial hematoma, hemopericardium, cardiac tamponade, STRICTA

## A Commentary on

**Case Report: Massive intrapericardial hematoma following acupuncture therapy**

By Chen W, Gao X, Li H (2024). Front. Cardiovasc. Med. 11:1433945. doi: 10.3389/fcvm.2024.1433945

Chen et al. (1) reported a case involving an acupuncture-related intrapericardial hematoma with subsequent cardiac tamponade. A 69-year-old female patient developed syncope just 10 min after needle insertion below the xiphoid process. Eight hours later, she was transferred to the hospital with complaints of severe chest pain, nausea, and vomiting. Hemorrhagic effusion in the intrapericardial region was discovered by echocardiography, computed tomography (CT) scan, and pericardiocentesis. She was diagnosed with traumatic hemopericardium, following which she underwent pericardial drainage, which stabilized her condition. The authors mentioned that a relationship could exist between acupuncture and cardiac injury, underscoring the need for careful assessment and prompt management. However, several aspects of this report deserve further discussion from the point of view of acupuncture experts.

First, it is imperative to consider the direction and depth of acupuncture needling to discuss the possibility of heart penetration from the subxiphoid process. Typically, the apex, the lowest part of the heart, is located at the fifth intercostal space, while the sternum is attached to the first to seventh ribs (2). Therefore, unless unique conditions such as advanced age, cardiomegaly, or anomalous physical characteristics are present, the heart rarely extends below the xiphoid process anatomically. According to the acupuncture textbook that the authors referred to, it is recommended to insert the filiform needle directly 0.3–0.6 in deep, or obliquely downward 0.5–1 in deep at the Jiuwei (CV15) point (3) mentioned in this report, but in this manner, penetrating the heart does not seem plausible (4, 5). Only if the needle was inserted at an upward angle at a depth that could reach the heart, could it potentially pierce the heart. In the

process of subxiphoid pericardiocentesis, the needle insertion site is generally situated between the xiphisternum and the left costal margin, with the needle angled upward at 15–30° (6). But unlike Western medical treatments like this, acupuncture treatment rarely targets the solid organs like the heart directly but just stimulates nearby or distant acupuncture points on the surface of the body. Thus, without this detailed information, its causality can only be evaluated as “unassessable” according to the modified WHO-UMC causality criteria (7).

Second, this patient case lacks a comprehensive analysis of other risk factors related to cardiac tamponade. The patient had been experiencing palpitations prior to receiving acupuncture treatment, which is known to be common symptoms of cardiac tamponade itself (8), and this report cannot reveal any perforation of the heart chamber or the coronary artery after acupuncture treatment. Therefore, it is possible that the patient might have had an underlying cardiac condition before the acupuncture session. This possibility is further substantiated by the echocardiographic finding of an unknown soft tissue in the pericardium, which could indicate pre-existing pathology. While the report states that there is no history of cardiovascular disease, trauma, or surgical interventions, it is important to consider the potential for other underlying causes or the occurrence of spontaneous cardiac tamponade (9, 10). As evidenced by previous case reports, cardiac tamponade can occur unexpectedly due to causes such as blunt trauma, or even spontaneously without any identifiable cause (10, 11). Therefore, it is essential for the authors to include a thorough examination of other potential risk factors.

Finally, this report does not provide detailed information about the acupuncture procedure (i.e., needle length, diameter, stimulation method, and type of practitioner). Without this information, a precise evaluation of the possibility remains unattainable. Although obtaining detailed information about acupuncture is realistically difficult, efforts for gathering such details are still necessary to prove causality. The acupuncture needle has a diameter of 0.2–0.3 mm, unlike pericardiocentesis needles, which used to be 1.2–1.6 mm in the past. Even if it actually penetrates the heart and the following perforation occurs, it would be difficult to rationalize the hemopericardium of 450 ml in 8 h. Furthermore, information about the type of practitioner should be stated, because a qualified practitioner would possess the necessary anatomical knowledge to avoid cardiac structures. Several previous studies have reported cases of hemopericardium caused by acupuncture; however as in this case, the specific procedural details of the treatment were not adequately documented (12, 13). Thus, to ensure accurate assessments of acupuncture-related adverse events, the Standards for Reporting Interventions in Clinical Trials of Acupuncture (STRICTA) guidelines and recommendation for case reports on acupuncture-related traumatic adverse events would be advisory for yielding better reports in future (14, 15).

In conclusion, this report describes a rare case of hemopericardium potentially associated with acupuncture.

However, it is a methodologically insufficient report and several additional factors must be considered to establish a definitive causal relationship between acupuncture treatment and this adverse event. In addition, we can assert that fatal adverse events, including the hemopericardium, can be effectively prevented when acupuncture is performed appropriately by licensed and experienced professionals. According to WHO guidelines, it seems that traditional acupuncture practitioners require at least two years of training (2,500 h), including 1,000 h of practical and clinical work, while qualified physicians may need a shorter, focused program (1,500 h) at least. The training must cover core topics such as acupuncture theory, acupuncture techniques, anatomy, safety protocols, and emergency management (16).

## Author contributions

S-JL: Conceptualization, Investigation, Methodology, Writing – original draft, Writing – review & editing. S-AK: Investigation, Methodology, Writing – review & editing. T-HK: Writing – review & editing, Methodology, Conceptualization. JK: Conceptualization, Investigation, Methodology, Writing – original draft, Writing – review & editing.

## Funding

The author(s) declare that no financial support was received for the research and/or publication of this article.

## Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

## Generative AI statement

The author(s) declare that no Generative AI was used in the creation of this manuscript.

## Publisher's note

All claims expressed in this article are solely those of the authors and do not necessarily represent those of their affiliated organizations, or those of the publisher, the editors and the reviewers. Any product that may be evaluated in this article, or claim that may be made by its manufacturer, is not guaranteed or endorsed by the publisher.

## References

- Chen W, Gao X, Li H. Case report: massive intrapericardial hematoma following acupuncture therapy. *Front Cardiovasc Med.* (2024) 11:1433945. doi: 10.3389/fcvm.2024.1433945
- Paulsen F, Waschke J. *Sobotta Atlas of Anatomy, Vol. 2, English/Latin: Internal Organs*. 17th ed. Munich: Urban & Fischer (2023).
- World Health Organization. WHO standard acupuncture point locations in the western pacific region. Manila: WHO Regional Office for the Western Pacific (2008).
- Cheng W-P, Dong S. Discussion on the safe angle and depth of acupuncture at Jiuwei (CV 15). *Zhongguo Zhen Jiu.* (2012) 32(6):515–8.
- Jiao SY. *Acupuncture Treatment*. Beijing: People's Medical Publishing House (2005). p. 230.
- De Carlini CC, Maggiolini S. Pericardiocentesis in cardiac tamponade: indications and practical aspects. *EJ Cardiol Pract.* (2017) 15:3–5.
- Centre TUM. The use of the WHO-UMC system for standardised case causality assessment. (2016). Available at: [https://who-umc.org/media/164200/who-umc-causality-assessment\\_new-logo.pdf](https://who-umc.org/media/164200/who-umc-causality-assessment_new-logo.pdf) (Accessed December 24, 2024).
- Adler Y, Ristić AD, Imazio M, Brucato A, Pankuweit S, Burazor I, et al. Cardiac tamponade. *Nat Rev Dis Primers.* (2023) 9(1):36. doi: 10.1038/s41572-023-00446-1
- Lekhukul A, Fenstad ER, Assawakawintip C, Pislaru SV, Ayalew AM, Maalouf JF, et al. Incidence and management of hemopericardium: impact of changing trends in invasive cardiology. *Mayo Clinic Proceedings*. Philadelphia: Elsevier (2018).
- Chacón-Díaz M. Case report: spontaneous acute hemopericardium. *Front Cardiovasc Med.* (2024) 11:1414519. doi: 10.3389/fcvm.2024.1414519
- Lin H, Liu H, Huang W, Chen C-H, Huang C, Tzen C, et al. Delayed hemopericardium with constrictive pericarditis after blunt trauma: a report of a surgical case. *Ann Thorac Cardiovasc Surg.* (2006) 12(6):428.
- Kim JH, Kim SH, Lee YJ, Hong JS, Ahn R, Hong ES. Hemopericardium following acupuncture. *Yonsei Med J.* (2011) 52(1):207–9. doi: 10.3349/ymj.2011.52.1.207
- Lee JH, Jin SC, Choi WI, Lee DK. Cardiac tamponade associated with acupuncture. *Keimyung Med J.* (2020) 39(1):48–51. doi: 10.46308/kmj.2020.00038
- MacPherson H, Altman DG, Hammerschlag R, Youping L, Taixiang W, White A, et al. Revised standards for reporting interventions in clinical trials of acupuncture (STRICTA): extending the CONSORT statement. *J Altern Complement Med.* (2010) 16(10):ST-1–14. doi: 10.1089/acm.2010.0558
- Kim SA, Lee JS, Kim TH, Lee SH, Lee JD, Kang JW. The reporting quality of acupuncture-related traumatic adverse events: a systematic review of case studies in Korea. *BMC Complement Med Ther.* (2024) 24(1):120. doi: 10.1186/s12906-024-04421-5
- WHO. *Guidelines on Basic Training and Safety in Acupuncture*. Geneva: World Health Organization (1999).