LETTER TO THE EDITOR

DOI: https://doi.org/10.5114/ait/241709

Commentary: Patient positioning during central venous cannulation in neurocritical care: an underaddressed issue in clinical guidelines

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Dear Editor,

We read with great interest the recently published guidelines of the Polish Society of Anaesthesiology and Intensive Therapy on central venous cannulation in critically ill patients [1]. We commend the Working Group for providing comprehensive recommendations regarding access-site selection, ultrasound guidance, and procedural techniques. We were particularly interested in the section addressing positional manoeuvres during central venous cannulation.

The guideline suggests considering the Trendelenburg position to improve cannulation conditions for both internal jugular and subclavian/axillary venous access. However, it also appropriately notes that Trendelenburg positioning may be contraindicated in patients with traumatic brain injury, intracranial pathology, or elevated intracranial pressure [1]. This observation highlights an important but unresolved issue: how should central venous cannulation be optimally performed in patients for whom the recommended positional manoeuvre may not be appropriate?

Importantly, this issue extends beyond the present guideline. Most contemporary central venous access guidelines emphasize ultrasound guidance, access-site selection, catheter management, and complication prevention, whereas patient positioning during catheter insertion receives comparatively little attention [2–6]. Against this background, the current guideline is notable for specifically addressing positional manoeuvres during cannulation. By simultaneously recommending consideration of Trendelenburg positioning and recognizing its potential contraindications in patients with intracranial pathology, the guideline brings into focus an area where evidence remains limited and practical guidance is lacking.

This gap may be particularly relevant in neurocritical care. Current neurocritical care guidelines commonly recommend head elevation as a supportive measure for intracranial pressure management but do not address positioning during central venous cannulation [7]. As a result, clinicians caring for patients with acute intracranial pathology are often required to integrate recommendations derived from separate evidence frameworks. Furthermore, as the Polish guidelines acknowledge, the evidence supporting positional manoeuvres is derived largely from studies evaluating anatomical surrogate outcomes in healthy volunteers or non-neurocritical populations. Data directly applicable to patients with acute intracranial pathology therefore remain limited. This uncertainty is especially pertinent because the current guidelines suggest subclavian/axillary access as the preferred site for central venous cannulation under real-time ultrasound guidance, when feasible [1], while simultaneously recognizing that Trendelenburg positioning may be inappropriate in patients with intracranial pathology. In practice, upper-body central venous access in such patients may therefore be performed in neutral or head-elevated positions, yet

Anaesthesiol Intensive Ther 2026; 58: e221–e222

Received: 07.06.2026, **accepted:** 12.10.2026

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evidence informing these positioning strategies remains sparse.

Consequently, a clinically relevant question remains unanswered: what positioning strategy best balances the facilitation of central venous access with the physiological priorities of neurocritical care? Addressing this question is likely to require studies that evaluate positioning strategies in neurocritical care populations and examine outcomes that reflect both procedural performance and the broader clinical context in which vascular access is obtained.

In summary, the current guideline represents an important advance by recognizing patient positioning as a potentially modifiable determinant of cannulation conditions. At the same time, it exposes a notable evidence gap regarding the neurocritical care population, for whom positioning considerations may extend beyond vascular access alone. We believe this area deserves dedicated investigation and may represent an important frontier for future research in central venous cannulation.

ACKNOWLEDGEMENTS

1. Assistance with the article: None.
2. Financial support and sponsorship: None.
3. Conflicts of interest: None.
4. Presentation: None.

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