



The aim of this study was to determine the degree of head rotation that creates the maximal anatomic separation between the right internal jugular vein and the carotid artery” DeAngelis et al (2015).

Reference:

DeAngelis, V., Denny, J., Chyu, D., Jan, T., Lemaire, A., Chiricolo, A. and Solina, A. (2015) The Optimal Angle of Head Rotation for Internal Jugular Cannulation as Determined by Ultrasound Evaluation. Journal of Cardiothoracic and Vascular Anesthesia. February 9th. .

Optimal angle of head rotation for internal jugular cannulation [@ivteam](http://ctt.ec/rf2kb+) #ivteam

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Abstract:

OBJECTIVES: The aim of this study was to determine the degree of head rotation that creates the maximal anatomic separation between the right internal jugular vein and the carotid artery.

DESIGN: Single-center prospective, observational cohort study.

SETTING: University medical center.

PARTICIPANTS: Fifty patients aged >21 years and undergoing cardiac surgery.

INTERVENTIONS: An ultrasound machine equipped with a digital caliper was used to determine the relational anatomy of the internal jugular vein and the carotid artery, with patients in the Trendelenburg position at head angles of -15° , 0° , $+15^\circ$, $+30^\circ$, $+45^\circ$, $+60^\circ$, $+75^\circ$, and $+90^\circ$.

MEASUREMENTS AND MAIN RESULTS: When examining the percentage of the internal jugular vein vertical diameter that is not overlapped by the carotid artery (vertically unencumbered), there was a difference between the head angle groups ($p < 0.01$). Unencumbered vertical distance was different between $+75^\circ$ versus 0° , and $+75^\circ$ versus $+15^\circ$. At $+75^\circ$, $60.3\% \pm 5.3\%$ of the internal jugular vein was unencumbered vertically, whereas at 0° , it was $37.2\% \pm 3.9\%$, and at $+15^\circ$ it was $40.3\% \pm 3.8\%$. Only 72% of the patients were able to position their head at $+75^\circ$, and 54% of the subjects were able to position their head at $+90^\circ$.

CONCLUSION: The authors found the internal jugular vein becomes more vertically separated from the carotid artery at more extreme angles of contralateral head rotation.

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