

Possible explanations for the higher complication rate include a smaller diameter and more anterior position relative to the corresponding carotid artery (CA) of the LIJV compared with the RIJV. In this study, the RIJV and LIJV were examined in mechanically ventilated patients to determine the validity of these possible explanations” Bos et al (2016).

Abstract:

STUDY OBJECTIVE: Central venous access is indicated for transduction of central venous pressure and the administration of inotropes in the perioperative period. The right internal jugular vein (RIJV) is cannulated preferentially over the left internal jugular vein (LIJV). Cannulation of the LIJV is associated with a higher complication rate and a perceived increased level of difficulty when compared with cannulation of the RIJV. Possible explanations for the higher complication rate include a smaller diameter and more anterior position relative to the corresponding carotid artery (CA) of the LIJV compared with the RIJV. In this study, the RIJV and LIJV were examined in mechanically ventilated patients to determine the validity of these possible explanations.

DESIGN: A prospective, nonrandomized cohort study.

SETTING: The operating room of a major teaching hospital.

PATIENTS: One hundred fifty-one patients scheduled for elective heart surgery.

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INTERVENTION: Ultrasound examination of the RIJV and LIJV at the level of the cricoid cartilage with a 12-MHz linear transducer in 151 anesthetized, mechanically ventilated patients in the Trendelenburg position.

MEASUREMENTS AND RESULTS: In 72% of patients, the RIJV was dominant over the LIJV. The diameter and cross-sectional area of the RIJV was larger than the LIJV ($P < .001$). An anterior position of the LIJV in relation to the left CA was detected more often when compared with the RIJV and right CA (15.1% vs 5.4%, $P = .01$).

CONCLUSION: This study confirms the smaller diameter and increased frequency of anterior positioning relative to the corresponding CA of the LIJV when compared with the RIJV. This validates them as possible explanations for the higher complication rate of LIJV cannulation compared with RIJV cannulation.

Reference:

Bos, M.J., van Loon, R.F., Heywood, L., Morse, M.P. and van Zundert, A.A. (2016) Comparison of the diameter, cross-sectional area, and position of the left and right internal jugular vein and carotid artery in adults using ultrasound. *Journal of Clinical Anesthesia*. 32, p.65-9.

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