

A right supraclavicular fossa view improves the accuracy of central venous catheter tip positioning and prevents central venous catheter misplacement via the right external jugular vein” Kosaka et al (2018).

Abstract:

INTRODUCTION: Ultrasound-guided central venous catheter tip confirmation has a potential to precisely locate the central venous catheter, preventing its misplacement, using real-time guidance. This observational study sought to determine the accuracy of central venous catheter tip positioning via the external jugular vein via a supraclavicular fossa view under ultrasound guidance.

METHODS: In total, 77 patients scheduled for central venous catheter insertion via the right external jugular vein were enrolled. The depth of central venous catheter insertion was determined by advancing the tip of the guidewire to the junction of the superior vena cava and right pulmonary artery, using a right supraclavicular fossa view ultrasound method. We determined the reference insertion depth to the carina using a postoperative chest x-ray photograph method. We then compared insertion depths obtained by the ultrasound and x-ray photograph methods and body-height formula.

RESULTS: In total, 62 patients were able to advance the guidewire and underwent ultrasound-guided central venous catheter insertion. In four patients, we corrected for misplaced guidewires. According to Bland-Altman plots, the insertion depth was 0.88 cm shorter for the ultrasound method (95% limits of agreement, -1.66 to 3.41 cm) and 0.90 cm shorter for the formulaic method (95% limits of agreement, -2.77 to 4.56 cm), compared with the x-ray photograph method. The x-ray photograph method had significantly positive correlations with the ultrasound ($r = 0.73$) and formulaic methods ($r = 0.27$).

CONCLUSION: A right supraclavicular fossa view improves the accuracy of central venous catheter tip positioning and prevents central venous catheter misplacement via the right external jugular vein.

Reference:



Kosaka, M., Oyama, Y., Uchino, T., Ogihara, Y., Koga, H., Shingu, C., Matsumoto, S. and Kitano, T. (2018) Ultrasound-guided central venous tip confirmation via right external jugular vein using a right supraclavicular fossa view. *The Journal of Vascular Access*. May 1st. .

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