

Three transducer orientation approaches have been proposed for this procedure: short-axis (SAX), long-axis (LAX) and oblique-axis (OAX). Our goal was to assess and compare the performance of these approaches” Batllori et al (2015).

Abstract:

BACKGROUND: Ultrasound-guided internal jugular venous access increases the rate of successful cannulation and reduces the incidence of complications, compared with the landmark technique. Three transducer orientation approaches have been proposed for this procedure: short-axis (SAX), long-axis (LAX) and oblique-axis (OAX). Our goal was to assess and compare the performance of these approaches.

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METHODS: A prospective randomized clinical trial was conducted in one teaching hospital. Patients aged 18 yr or above, who were undergoing ultrasound-guided internal jugular cannulation, were randomly assigned to one of three intervention groups: SAX, LAX and OAX group. The main outcome measure was successful cannulation on first needle pass. Incidence of mechanical complications was also registered. Restricted randomization was computer-generated.

RESULTS: In total, 220 patients were analysed (SAX n=73, LAX n=75, OAX n=72). Cannulation was successful on first needle pass in 51 (69.9%) SAX patients, 39 (52%) LAX patients and 53 (73.6%) OAX patients. First needle pass failure was higher in the LAX group than in the OAX group (adjusted OR 3.7, 95% CI 1.71-8.0, P=0.002). A higher mechanical complication rate was observed in the SAX group (15.1%) than in the OAX (6.9%) and LAX (4%) groups (P=0.047).

CONCLUSIONS: As OAX showed a higher first needle pass success rate than LAX and a lower mechanical complications rate than SAX, we recommend it as the standard approach when performing ultrasound-guided internal jugular venous access. Further clinical studies are needed to confirm this conclusion.

CLINICAL TRIAL REGISTRATION: NCT 01966354.

Reference:



Batllori, M., Urra, M., Uriarte, E., Romero, C., Pueyo, J., López-Olaondo, L. and Cambra, K. (2015) Randomized comparison of three transducer orientation approaches for ultrasound guided internal jugular venous cannulation. British Journal of Anaesthesia. December 24th. .

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