



A novel technique (modified short-axis out-of-plane) to improve first pass success rate of ultrasound-guided IJV CVC in neonates and infants is being compared with conventional SA-OOP method”
Rastogi et al (2018).

Abstract:

BACKGROUND AND AIMS: Central venous cannulation (CVC) through right internal jugular vein (IJV) route is routinely performed in paediatric patients undergoing major surgery and in those admitted to intensive care units. A novel technique (modified short-axis out-of-plane) to improve first pass success rate of ultrasound-guided IJV CVC in neonates and infants is being compared with conventional SA-OOP method.

METHODS: A total of 120 patients were enrolled in the study over a period of 6 months. All paediatric patients with age <1 year and weight <10 kg who underwent a major surgery requiring CVC were included. Patients were randomised to either of the two approaches of ultrasound-guided IJV cannulation; SA-OOP and modified SA-OOP (MSA-OOP). In modified approach, the midline of probe footprint was marked with a radio-opaque barium wire that casted a central acoustic shadow on ultrasound screen.

RESULTS: In MSA-OOP group, 83.1% of patients were cannulated in the first attempt as compared to 49.2% patients in group SA-OOP. Patients in MSA-OOP group required significantly fewer attempts for successful CVC as compared to patients in the SA-OOP group

(MSA-OOP: median = 1, interquartile range [1-1]; SAOOP: median = 2, interquartile range [1-2], $P < 0.001$, Mann-Whitney U-test).

CONCLUSION: The use of MSA-OOP ultrasound technique for IJV CVC cannulation results in a higher first-attempt success rate and reduces the number of cannulation attempts.

Reference:

Rastogi, A., Agarwal, A., Goyal, P., Priya, V., Dhiraaj, S. and Haldar, R. (2018) Ultrasound guided internal jugular vein cannulation in infants: Comparative evaluation of novel modified short axis out of plane approach with conventional short axis out of plane approach. *Indian Journal of Anaesthesia*. 62(3), p.208-213.

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