This study was to compare the utility of USG radial artery cannulation with palpation technique in terms of success rate, real-time to placement, number of attempts and complications”

Abstract:

BACKGROUND: Previous studies have shown ultrasound guidance (USG) for arterial cannulation being advantageous compared to palpation technique, but little is known about its performance by novices.

OBJECTIVE: This study was to compare the utility of USG radial artery cannulation with palpation technique in terms of success rate, real-time to placement, number of attempts and complications.

MATERIAL AND METHOD: After IRB approval, a randomized prospective study was performed November 2009-October 2010. Ten third-year residents, having performed USG vascular catheterization as yet less than 3 times, were coached on the pork-phantom during a workshop for real time ultrasound-guided vascular access. For the study patients were randomized to US-guided technique (US-group) and palpation (P-group); ten patients for each resident.

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RESULTS: One hundred adult patients undergoing neurosurgery were enrolled. There were no statistically significant differences between US-group vs. P-group in success rate (78% vs. 82%; p = 0.62), time to success (60 (12.8, 547.0) vs. 52 (6.9, 639.0) sec; p = 0.22), and number of attempts (1 (1, 4) vs. 1 (1, 3); p = 0.79). Most common complication was puncture hematoma (US-group 26% vs. P-group 24%; p = 0.82). Success was defined as no change in catheterization site, performer and technique.

CONCLUSION: Regarding success rate, attended time, or number of attempts for radial arterial cannulation, we did not find any benefit of ultrasound guidance compared to palpation technique. Our findings were not in accordance to other trials. However, we have to consider operators in our study being in experienced in ultrasound-guided procedures but not in palpation techniques.

Reference:

Thank you to our partners for supporting IVTEAM