Ultrasound-guided subclavian venipuncture training reviewed

Both ultrasound-guided subclavian venipuncture (US-SV) and landmark-guided subclavian venipuncture (LM-SV) are important in critical care... The aim of this study is to compare learning these two techniques in a simulation environment.” Tokumine et al (2014).

Reference:

Abstract:
PURPOSE: Both ultrasound-guided subclavian venipuncture (US-SV) and landmark-guided subclavian venipuncture (LM-SV) are important in critical care, because the clinical utility of ultrasound guidance is still debated. Education of residents and medical students should include both techniques. The aim of this study is to compare learning these two techniques in a simulation environment.

METHODS: This study was approved by the research ethics review committee. Trainees included residents and medical students who were instructed using the “Videos in Clinical Medicine” for LM-SV, or a dedicated slide series for US-SV, using the long-axis in-plane with needle-guide technique. After the lecture, trainees attempted to perform venipuncture in a simulator. All participants performed both techniques. The procedure time from initial skin puncture to detecting back-flow of fluid from the simulated vein was measured. A procedure time over 3 min, arterial puncture, or pneumothorax was counted as a failure. The end-point for each trainee was three successive successful venipunctures without a failure. A trainee who reached the end-point was considered as having acquired adequate skill. Statistical analysis of the procedure time comparing the techniques was done using the Mann-Whitney U test.
RESULTS: Twenty trainees participated in this training. Adequate skill to perform US-SV was achieved within three tries, but up to nine attempts were needed for LM-SV. One arterial puncture occurred during LM-SV. No pneumothoraces occurred during the simulation training.

CONCLUSIONS: US-SV was learned more quickly than LM-SV in a simulation model.

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