

ABSTRACT (Paper)

Title: Ultrasound guided internal jugular vein catheterization in critical care patients: a comparative study with the landmark technique

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Keywords: Central venous catheter, internal jugular vein, ultrasound, standard landmark technique.

Introduction: Central venous catheterization is crucial in the management of critically ill patients. Our study was to evaluate whether ultrasound-guided internal jugular vein catheterization is superior to the standard landmark technique.

Methods: In this study, 45 critical care patients who underwent ultrasound-guided catheterization of the internal jugular vein were compared with 45 critical care patients in whom the landmark technique was used. Randomization was performed by means of a computer-generated random numbers table, and all patients were stratified regarding age, sex, and body mass index.

Results: There were no significant differences in gender, age, body mass index, side of cannulation, or presence of risk factor for difficult venous cannulation. The people who performed the procedure had comparable experience. Catheterization of the internal jugular vein was successfully achieved in 95.5% patients by ultrasound-guided technique and in 82.2% by using landmark technique($p=0.044$). average access time (skin to vein) and number of attempts were also significantly reduced in the ultrasound group. In the landmark technique group, carotid puncture occurred in 11.1% of patients, subcutaneous emphysema in 15.5%, hematoma in 17.7%, pneumothorax in 2.2% and central venous catheter associated blood stream infection in 17.7%, which were all significantly increased compared to the ultrasound guided group.

Conclusion: Our study suggests that ultrasound guided internal jugular vein catheterization in critical care patients is superior to the landmark technique.

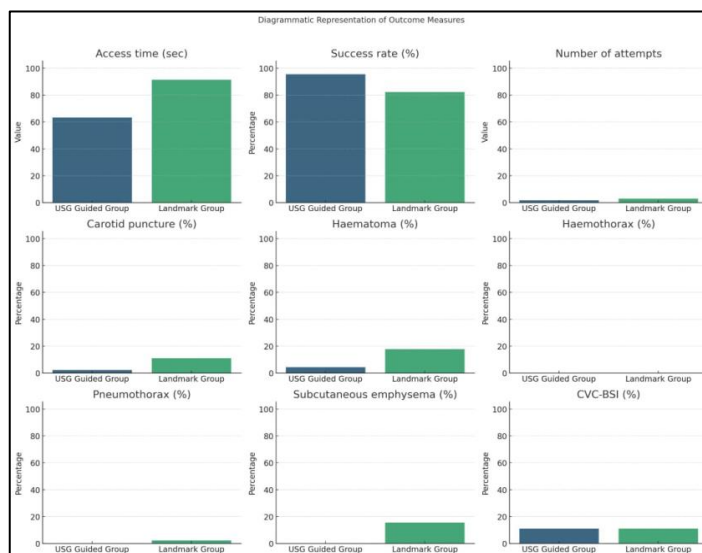


Fig 1: Graphical representation of outcomes of our study in central venous catheterization

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