Brachiocephalic cannulation is a reasonable alternative to ultrasound-guided internal jugular vein catheterization” Beccaria et al (2018).

Abstract:

BACKGROUND: Although many studies have compared success and complication rates for central line insertion sites with and without ultrasound, few have examined the use of the brachiocephalic vein for central venous access. The aim of this study was to describe the brachiocephalic vein as an alternative site for elective ultrasound vascular cannulation in adults, and to compare it with the more commonly used internal jugular vein site in terms of procedural difficulties, first pass failure rate, overall failure rate, and safety.

METHODS: In this single-center, retrospective cohort study, clinical data from consecutive adult patients undergoing elective ultrasound-guided central venous catheterization of upper body were retrieved from the department database. All of these central venous catheters were requested by department team, none was positioned for surgery. Seven hundred nine patients underwent central venous catheterization via the internal jugular approach and 285 patients via the brachiocephalic route. Patients catheterized via the brachiocephalic vein approach were then compared with those catheterized via the internal jugular vein in terms of ease of catheterization, success rate, and complications. Differences between approaches were assessed by univariate analyses and multivariable analysis.

RESULTS: Overall, 994 patients underwent central venous catheterization. A total of 87% had a successful catheter implantation at the first attempt, 6.7% of insertions were difficult, 5.7% were complicated, and 3.4% failed. Procedural difficulty was more frequent with the internal jugular than with the brachiocephalic approach (odds ratio, 0.38; 95% confidence interval, 0.19-0.76; P = .007) after correction for potential confounders. Differences between groups in complication rate (6.3% vs 4.1%) or failure rate (3.4% vs 3.5%) were not significant.

CONCLUSIONS: Brachiocephalic cannulation is a reasonable alternative to ultrasound-guided internal jugular vein catheterization.
Reference: