



Our purpose was to determine the frequency of use of real-time ultrasonography use by pediatric surgeons during central venous catheter placement, patient and procedure factors associated with real-time ultrasonography use, and adverse event rates” Gurien et al (2016).

Abstract:

BACKGROUND: Recommendations for the use of real-time ultrasonography for placement of central venous catheters in children are based on studies involving adults treated by nonsurgeons. Our purpose was to determine the frequency of use of real-time ultrasonography use by pediatric surgeons during central venous catheter placement, patient and procedure factors associated with real-time ultrasonography use, and adverse event rates.

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METHODS: Using data gathered from 14 institutions, we performed a retrospective cohort study of patients

RESULTS: Real-time ultrasonography was used in 33% of attempts (N = 1,146). The

subclavian vein (64%) was accessed preferentially for first site insertion. Real-time ultrasonography was less likely to be used for subclavian vein (odds ratio = 0.002; $P < .0001$) and more likely to be used when coagulopathy (international normalized ratio >1.5) was present (odds ratio = 11.1; $P = .03$). The rate of mechanical complications was 3.5%. Real-time ultrasonography use was associated with greater procedural success rates on first-site attempt, but also with a greater risk of hemothorax.

CONCLUSION: Pediatric surgeons access preferentially the subclavian vein for central venous access, yet are less likely to use real-time ultrasonography at this site. Real-time ultrasonography was superior to the landmark techniques for the first-site procedure success, yet was associated with greater rates of hemothorax. Prospective trials involving children treated by pediatric surgeons are needed to generate more definitive data.

Reference:

Gurien, L.A., Blakely, M.L., Russell, R.T., Streck, C.J., Vogel, A.M., Renaud, E.J., Savoie, K.B. and Dassinger, M.S. (2016) Real-time ultrasonography for placement of central venous catheters in children: A multi-institutional study. *Surgery*. July 23rd. .

doi: 10.1016/j.surg.2016.05.019.

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