

The use of the ultrasound-guided (UG) approach to CVC placement has been reported in adults and children, but the technique is not well studied in infants” Goldstein et al (2015).

Reference:

Goldstein, S.D., Pryor, H., Salazar, J.H., Dalesio, N., Stewart, F.D., Abdullah, F., Colombani, P. and Lukish, J.R. (2015) Ultrasound-Guided Percutaneous Central Venous Access in Low Birth Weight Infants: Feasibility in the Smallest of Patients. Journal of Laparoendoscopic & Advanced Surgical Techniques. July 13th. .

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Abstract:

PURPOSE: The insertion of tunneled central venous access catheters (CVCs) in infants can be challenging. The use of the ultrasound-guided (UG) approach to CVC placement has been reported in adults and children, but the technique is not well studied in infants.

SUBJECTS AND METHODS: A retrospective review was performed of infants under 3.5 kg who underwent attempted UG CVC placement between August 2012 and November 2013. All infants underwent UG CVC placement using a standard 4.2-French or 3.0-French CVC system (Bard Access Systems, Inc., Salt Lake City, UT). The UG approach was performed on all infants with the M-Turbo® ultrasound system (SonoSite, Inc., Bothell, WA). The prepackaged 0.025-inch-diameter J wire within the set was used in all infants weighing greater than 2.5 kg. A 0.018-inch-diameter angled glidewire (Radiofocus® GLIDEWIRE®; Boston Scientific Inc., Natick, MA) was used in infants less than 2.5 kg. Data collected included infant weight, vascular access site, diameter of cannulated vein (in mm), and complications.

RESULTS: Twenty infants underwent 21 UG CVC placements (mean weight, 2.4 kg; range, 1.4-3.4 kg). Vascular CVC placement occurred at the following access sites: 16 infants underwent 17 placements via the right internal jugular vein, versus 3 infants via the left internal jugular vein. The average size of the target vessel was 4.0 mm (range, 3.5-5.0 mm). One infant had inadvertent removal of the UG CVC in the right internal jugular vein on postoperative Day 7. This infant returned to the operating room and underwent a successful UG CVC in the same right internal jugular vein. There were no other complications in the

group.

CONCLUSIONS: The UG CVC approach is a safe and efficient approach to central venous access in infants as small as 1.4 kg. Our experience supports the use of a UG percutaneous technique as the initial approach in underweight infants who require central venous access.

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