

## **To assess whether a limited ultrasound (US) scanning protocol to monitor the upper extremity peripherally inserted central catheter (PICC) location in neonates is feasible for experienced US operators” Motz et al (2018).**

### Abstract:

**OBJECTIVES:** To assess whether a limited ultrasound (US) scanning protocol to monitor the upper extremity peripherally inserted central catheter (PICC) location in neonates is feasible for experienced US operators.

**METHODS:** A radiologist, who was blinded to the PICC location on chest radiography, performed 14 US scans on 11 neonates with upper extremity PICCs. A US machine with 13-6-MHz linear and 8-4-MHz phased array transducers was used for the examinations.

**RESULTS:** The study population included 54% (n = 6) preterm infants, with 72% (n = 8) weighing less than 1500 g. The US location of the PICC was the same as the chest radiographic report in all 14 scans. A subclavicular long-axis view of the anterior chest visualized all PICCs in the subclavian or brachiocephalic veins. A parasternal long-axis right ventricular inflow view was able to visualize PICCs in the superior vena cava (SVC), and a subcostal long-axis view evaluated PICCs in the lower SVC and heart. The scanning time was location dependent: less than 5 minutes for PICCs in the brachiocephalic or subclavian vein and 5 to 10 minutes for PICCs in the SVC or heart. There were no desaturations below 90%, increases in the fraction of inspired oxygen need, or hypotension episodes during scanning.

**CONCLUSIONS:** A limited US scanning protocol to determine the upper extremity PICC location is feasible. Our protocol needs to be tested in neonatal providers before further dissemination.

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Reference:

Motz, P., Arnim, A.V.S.A.V., Likes, M., Chabra, S., Traudt, C., Iyer, R.S. and Dighe, M. (2018) Limited Ultrasound Protocol for Upper Extremity Peripherally Inserted Central Catheter Monitoring: A Pilot Study in the Neonatal Intensive Care Unit. *Journal of Ultrasound in Medicine*. September 23rd. .

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