To evaluate the application of ultrasound for the localization of the tip position of peripherally inserted central catheters (PICCs) in newborn infants” Ren et al (2019).

Abstract:

OBJECTIVE: To evaluate the application of ultrasound for the localization of the tip position of peripherally inserted central catheters (PICCs) in newborn infants.

STUDY DESIGN: This study was a retrospective analysis on ultrasonic localization for PICC placement conducted in our department over the past 2 years. Ultrasonic localization was performed immediately after PICC placement in all neonatal patients. Successful PICC placement was confirmed if the PICC tip position was located at the inferior/superior cavoatrial junction. Chest X-ray localization was performed on 32 infants immediately after ultrasound examination to compare the accuracy of ultrasound localization.

RESULTS: Of the 186 patients, 174 (93.5%) had successful PICC placement on the first attempt. In 11 (5.9%) patients, the catheter tip was placed beyond the ideal location as follows: too deep (in the right atrium) in 4 patients, too shallow in 4 patients, and malpositioned in 3 patients. Both the sensitivity and the specificity of ultrasound for identifying PICC tip localization were 100%. Complications occurred in 2.7% of this group of patients.

CONCLUSION: Ultrasonic localization of the PICC tip position is a timely, accurate, and reliable method and can identify the catheter tip with high accuracy. This method could be widely applied in neonatal wards.

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