



Correct tip location is crucial for a peripherally inserted central catheter (PICC) to maximize the effects of central venous infusion” Zhou et al (2017).

Abstract:

Correct tip location is crucial for a peripherally inserted central catheter (PICC) to maximize the effects of central venous infusion. However, it is difficult to place the tip in a correct location in neonates because of the unreliable estimated length by surface landmark.

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Therefore, we evaluated the feasibility and safety of an improved intracavitary electrocardiogram (IC-ECG) technique in guiding PICC placement in neonates based on the ratios of P/R wave amplitudes on IC-ECG. The results showed that all of the 32 neonates whose PICCs had been successfully placed and correct tip position verified by chest radiography acquired qualified P wave on IC-ECG. The average ratio of P/R wave amplitude was  $0.6 \pm 0.1$ , with a range of 0.4 to 0.8. The 49 neonates who received IC-ECG-guided PICC catheterization showed higher success rates of correct PICC tip position on the first attempt than traditional, predetermined length estimation on surface landmark (93.9% vs 62.5%,  $\chi = 18.01$ ,  $P < .001$ ). No significant complications occurred in the studied neonates. Based on

these findings, IC-ECG-guided tip placement appears to be a promising approach in improving the success rate of tip location when placing a PICC in neonates.

Reference:

Zhou, L., Xu, H., Liang, J., Xu, M. and Yu, J. (2017) Effectiveness of Intracavitary Electrocardiogram Guidance in Peripherally Inserted Central Catheter Tip Placement in Neonates. *The Journal of Perinatal & Neonatal Nursing*. May 17th. .

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