The authors assessed the rate of successful peripherally inserted central catheter placement with dynamic needle tip positioning” Takeshita et al (2019).

Abstract:

OBJECTIVE: Although a few studies have reported the efficacy of ultrasound-guided peripherally inserted central catheter placement for pediatric patients, the procedure still is challenging. Ultrasound-guided dynamic needle tip positioning technique is useful for vascular catheterization. There have been no reports on using dynamic needle tip positioning for peripherally inserted central catheter placement. The authors assessed the rate of successful peripherally inserted central catheter placement with dynamic needle tip positioning.

DESIGN: Case series.

SETTING: Single tertiary institution.

PARTICIPANTS: Forty patients <5 years old who were admitted to the pediatric intensive care unit after cardiac surgeries and required peripherally inserted central catheter placement.

INTERVENTIONS: Peripherally inserted central catheter placement was performed under
ultrasound guidance with dynamic needle tip positioning. The authors recorded the first attempt and overall success rates of peripherally inserted central catheter and outer cannula placement, time needed for outer cannula and peripherally inserted central catheter placement, and number of attempts. MEASUREMENTS AND MAIN RESULTS: The first attempt and overall success rates of peripherally inserted central catheter placement were 85% (n = 34) and 97.5% (n = 39), respectively. The first attempt and overall success rates of outer cannula placement were 87.5% (n = 35) and 100% (n = 40), respectively. Time needed for outer cannula placement was 59.5 (interquartile range 40.5-80.5) seconds and for peripherally inserted central catheter placement was 112.5 (interquartile range 91.5-159.5) seconds. The number of attempts was 1 (interquartile range 1-1).

CONCLUSIONS: In pediatric patients, ultrasound-guided peripherally inserted central catheter placement using dynamic needle tip positioning attained a high success rate.

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