We conducted a prospective observational case series of all patients who had a midline catheter insertion attempted in the ED” Spiegel et al (2019).

Abstract:

STUDY OBJECTIVE: Midline catheters are an alternative to more invasive types of vascular access in patients in whom obtaining peripheral access has proven difficult. Little is known of the safety and utility of midline catheters when used more broadly in critically ill patients in the emergency department (ED). These are long peripheral catheter, ranging from 10 to 25 cm in length, typically placed with assistance of ultrasound and the Seldinger’s technique. We describe our experience with the use of midline catheters in the ED.

METHODS: We conducted a prospective observational case series of all patients who had a midline catheter insertion attempted in the ED. We prospectively captured data on indication, technique, location, catheter type, number of attempts, overall success or failure, vasoactive use, and complications (daily catheter patency, flow, site appearance, and dwell-time complications).

RESULTS: From January 28, 2016, to December 30, 2017, practitioners placed 403 midline catheters. Catheter insertion success was 99%, and the median number of attempts was 1 (interquartile range 1 to 1; minimum 1; maximum 3). The median number of days the catheter remained in place was 5 (interquartile range 2 to 8). Failure to aspirate occurred in
57 patients (14%; 95% confidence interval 11% to 18%). Overall, 14 patients (3.5%; 95% confidence interval 2.0% to 5.9%) experienced 15 insertion-related complications. During the study period, 49 patients (12%; 95% confidence interval 9% to 16%) experienced 60 dwell-time-related complications. Severe complications occurred in 3 patients (0.7%).

CONCLUSION: Midline catheters may present a feasible alternative to central venous access in certain critically ill ED patients.

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