The purpose of this study is to investigate the accuracy and safety of intracavitary electrocardiogram (IC-ECG) guidance for the localization of peripherally inserted central catheter (PICC) in neonatal patients.” Ling et al (2019).

Abstract:

The purpose of this study is to investigate the accuracy and safety of intracavitary electrocardiogram (IC-ECG) guidance for the localization of peripherally inserted central catheter (PICC) in neonatal patients. A total of 160 neonatal patients were randomly assigned to receive either anthropometric measurement combined with IC-ECG guidance (n = 80) or conventional anatomical landmark guidance (n = 80) for PICC catheter tip positioning. The catheter tip position was confirmed by postinsertion radiograph and data were interpreted by independent radiologists. Subsequent catheter-related complications of neonates between 2 groups were also compared. The first-attempt target rate was 95.0% (95% confidence interval, 90.1%-99.9%) in IC-ECG-guided PICCs, significantly higher than 78.8% (95% confidence interval, 69.6%-87.9%) in the anatomical landmark guidance group (P < .05). In contrast, IC-ECG-guided PICCs provided a significantly lower overall incidence of the catheter-related complications (3.75%), compared with those guided by anatomical landmarks only (23.75%). Thus, combined use of anatomical landmark and IC-ECG guidance improved the first-attempt target rate of PICC placement and decreased catheter-related complications. These findings indicated a superior accuracy and safety of IC-ECG guidance to conventional
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