Abstract:

OBJECTIVES: To evaluate the frequency of central venous catheter (CVC)-related thrombi detected by routine surveillance ultrasound, and to assess whether positive findings had an impact on management or outcomes.

STUDY DESIGN: All neonates in a tertiary neonatal intensive care unit who had a CVC inserted for >14 days underwent routine surveillance ultrasound biweekly between January 2003 and December 2009. Data were reviewed retrospectively.

RESULTS: Although all neonates were asymptomatic at time of surveillance ultrasound, 645 of the total 1333 CVCs inserted in 1012 neonates underwent surveillance ultrasound, and thrombi were detected in 69 (10.7%). The CVCs with thrombi were more likely to be removed for nonelective reasons compared with CVCs without thrombi (59% vs 38%; P = .001; OR, 2.4, 95% CI 1.4-3.9). A total of 955 surveillance ultrasounds were performed to detect and monitor 69 CVCs with thrombi. The majority of thrombi were nonocclusive and nonprogressive. A change in management occurred in 8 cases of CVC-related thrombi (12%), or 1% of all screened cases. An average of 14 ultrasounds were required to detect and monitor 1 CVC with thrombus, at a cost of $951 per CVC with thrombus and $8106 per case...
of CVC-related thrombi with a change in treatment.

CONCLUSION: Asymptomatic thrombi were detected in a significant proportion of CVCs by routine surveillance ultrasound. There were significant costs, but infrequent changes to patient management.