



The purpose of this study was to reduce radiation exposure during pediatric central venous line (CVL) placement by implementing a radiation safety process including a radiation safety briefing and a job-instruction model with a preradiation time-out” Choi et al (2018).

Abstract:

PURPOSE: The purpose of this study was to reduce radiation exposure during pediatric central venous line (CVL) placement by implementing a radiation safety process including a radiation safety briefing and a job-instruction model with a preradiation time-out.

METHODS: We reviewed records of all patients under 21 who underwent CVL placement in the operating room covering 22 months before the intervention through 10 months after 2013-2016. The intervention consisted of a radiation safety briefing by the surgeon to the intraoperative staff before each case and a radiation safety time-out. We measured and analyzed the dose area product (DAP), total radiation time pre- and postintervention, and the use of postprocedural chest radiograph.

RESULTS: 100 patients with valid DAP measurements were identified for analysis (59 preintervention, 41 postintervention). Following implementation of the radiation safety process, there was a 79% decrease in median DAP (61.4 vs 13.1 rad*cm², P < 0.001) and a

73% decrease in the median radiation time (28 vs 7.6 s, $P < 0.001$). Additionally, there was a significant reduction in use of confirmatory CXR (95% vs 15%, $P < 0.01$). CONCLUSION: A preoperative radiation safety briefing and a radiation safety time-out supported by a job-instruction model were effective in significantly lowering the absorbed doses of radiation in children undergoing CVL insertion. TYPE OF STUDY: Case-control study. LEVEL OF EVIDENCE: Level III.

You may also be interested in...

Paediatric patient safety during Central Venous Catheter placement
Central venous catheter knotted during insertion
Extensive overview of central venous access device complications

Reference:

Choi, B.H., Yaya, K., Prabhu, V., Fefferman, N., Mitchell, B., Kuenzler, K.A., Ginsburg, H.B., Fisher, J.C. and Tomita, S. (2018) Simple preoperative radiation safety interventions significantly lower radiation doses during central venous line placement in children. *Journal of Pediatric Surgery*. October 5th. .

doi: 10.1016/j.jpedsurg.2018.10.013.

