The aim of this study is to determine whether intraoperative fluoroscopy (IF) is required to confirm the correct position of the catheter tip in children” Dore et al. (2018).

Abstract:
INTRODUCTION: Central venous port (CVP) placement is traditionally performed under fluoroscopy guidance. However, efforts for radiation dose reduction in children have allowed the introduction of ultrasound guidance (USG) and anatomic landmarks as an alternative technique for CVP placement. The aim of this study is to determine whether intraoperative fluoroscopy (IF) is required to confirm the correct position of the catheter tip in children.

PATIENTS AND METHODS: A prospective, single-center study was performed between July and December 2017. Standard venous access site was the right internal jugular vein under USG. Estimated catheter length (ECL) was measured using anatomic landmarks. Ideal catheter length (ICL) was measured after placement under fluoroscopy guidance in the same patient. Age, sex, radiation dose, and complications were also analyzed. A t-test for paired samples and intraclass correlation coefficient were performed to analyze results.

RESULTS: A total of 30 consecutive patients aged 7 ± 2 years underwent CVP placement. The mean ECL was 17.1 ± 1.8 cm, while the mean ICL was 17.7 ± 1.8 cm. The mean difference between measurements was 0.28 cm (95% confidence interval, -0.29 to 0.86; p = 0.324). Intraclass correlation coefficient analysis showed an agreement of 0.95 (95% CI, 0.91-0.98) between measurements. Mean radiation exposure during the procedure was 1.060.78 mGy.m² during 0.34 ± 0.6 minutes. There were no complications registered during CVP placement.

CONCLUSION: The correlation between IF and USG and anatomically guided catheter tip placement is optimal. These results suggest that fluoroscopy and the radiation exposure it entails can be safely avoided in selected children.

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