

Understanding the Impact of Family Member Presence during Pediatric Forearm Fracture Reductions in the Emergency Department

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INTRODUCTION:

Pediatric fracture reductions under procedural sedation in the emergency department are a common and well-accepted practice. Family member presence during many other procedures in the emergency department has been investigated with the consensus that family member presence improves satisfaction with care. The applicability of this consensus to sedated fracture reductions is unclear. The purpose of this study is to assess family member, emergency medicine physician, and orthopaedic surgery resident experience of sedated fracture reductions in the emergency department based on family member presence during the reduction.

METHODS: We performed a retrospective survey study of the family members, orthopaedic surgery residents, and emergency medicine physicians for pediatric patients who sustained a distal radius or forearm shaft fracture requiring closed reduction under procedural sedation in the ED between October 2021 and July 2022. Family members who chose to remain in the room during fracture reduction were compared to those that chose to leave the room. The primary outcome of the study was family member satisfaction with the care that the patient received during fracture reduction. Several secondary outcomes regarding family member, emergency medicine physician, and orthopaedic surgery resident attitudes, experiences, and perceptions were also evaluated.

RESULTS: A total of 297 eligible patients were identified during the study period. The survey response rate was 40.4% among family members, 49.5% for emergency medicine physicians, and 58.6% of orthopaedic surgery residents. The majority (55%, 66/120) of family members indicated their initial preference was to remain with their child during the fracture reduction. In total, 51.7% (62/120) of family members remained in the room and 48.3% (58/120) left during the procedure. Family members who were able to remain in or leave the room in accordance with their initial preference had a more positive experience of the sedated fracture reduction themselves ($p=0.017$), while their perception of the child's experience ($p=0.164$) and how the child was being cared for (0.082) were not statistically different. Orthopaedic surgery residents felt more negatively about family member presence during the procedure than emergency medicine physicians ($p<0.001$) and the negative feelings were related to post-graduate year of the resident. Emergency medicine physicians believed that family member presence had a positive impact on the family member ($p=0.013$) and child ($p<0.001$) without affecting them as the physician providing sedation ($p=0.679$), while orthopaedic surgery residents thought family member presence had a negative impact on the family member ($p=0.003$) and themselves ($p<0.001$). The attitude of emergency medicine physicians toward family member presence had a greater impact on family member location during fracture reduction than that of orthopaedic surgery residents ($p<0.001$).

DISCUSSION AND CONCLUSION:

This evaluation of family member and physician experience during emergency department fracture reductions under procedural sedation shows that family members permitted to stay in or leave the room in accordance with their initial preference were more satisfied with their experience during the procedure. Furthermore, we highlight the differences in the experience of emergency medicine physicians and orthopaedic surgery residents during sedated fracture reductions and the impact this has on family member presence. Our findings support family-centered care that educates family members on procedure expectations and values their preferences.



Table 1: Family Member Satisfaction

Question	Remained (n=62)	Left (n=58)	P-value
How satisfied were you with the care your child received during the procedure?	48 (77.4%)	40 (68.9%)	0.017
How satisfied were you with the care you received during the procedure?	45 (72.7%)	38 (65.5%)	0.017
How satisfied were you with the care your child's doctor received during the procedure?	45 (72.7%)	38 (65.5%)	0.017
How satisfied were you with the care your child's doctor's colleagues received during the procedure?	45 (72.7%)	38 (65.5%)	0.017
How satisfied were you with the care your child's doctor's colleagues' colleagues received during the procedure?	45 (72.7%)	38 (65.5%)	0.017

Table 2: Physician Satisfaction

Question	Remained (n=62)	Left (n=58)	P-value
How satisfied were you with the care your child received during the procedure?	48 (77.4%)	40 (68.9%)	0.017
How satisfied were you with the care you received during the procedure?	45 (72.7%)	38 (65.5%)	0.017
How satisfied were you with the care your child's doctor received during the procedure?	45 (72.7%)	38 (65.5%)	0.017
How satisfied were you with the care your child's doctor's colleagues received during the procedure?	45 (72.7%)	38 (65.5%)	0.017
How satisfied were you with the care your child's doctor's colleagues' colleagues received during the procedure?	45 (72.7%)	38 (65.5%)	0.017

Table 3: Family Member Location

Question	Remained (n=62)	Left (n=58)	P-value
Did you have any concerns about your child's safety during the procedure?	15 (24.2%)	12 (20.7%)	0.679
Did you have any concerns about your child's comfort during the procedure?	15 (24.2%)	12 (20.7%)	0.679
Did you have any concerns about your child's pain during the procedure?	15 (24.2%)	12 (20.7%)	0.679
Did you have any concerns about your child's breathing during the procedure?	15 (24.2%)	12 (20.7%)	0.679
Did you have any concerns about your child's heart rate during the procedure?	15 (24.2%)	12 (20.7%)	0.679

Table 4: Physician Attitudes

Question	Remained (n=62)	Left (n=58)	P-value
Family member presence had a positive impact on the family member	45 (72.7%)	38 (65.5%)	0.013
Family member presence had a positive impact on the child	45 (72.7%)	38 (65.5%)	<0.001
Family member presence had a positive impact on the physician providing sedation	45 (72.7%)	38 (65.5%)	0.679
Family member presence had a negative impact on the family member	15 (24.2%)	12 (20.7%)	0.003
Family member presence had a negative impact on the physician providing sedation	15 (24.2%)	12 (20.7%)	<0.001

Figure 1. Patient flow and eligibility information for family members, emergency medicine physicians, and orthopaedic surgery residents.

Figure 2. Family member satisfaction with the care your child received during the procedure.

Figure 3. Family member satisfaction with the care you received during the procedure.

Figure 4. Family member satisfaction with the care your child's doctor received during the procedure.

Figure 5. Family member satisfaction with the care your child's doctor's colleagues received during the procedure.

Figure 6. Family member satisfaction with the care your child's doctor's colleagues' colleagues received during the procedure.

Figure 7. Family member location during the procedure.

Figure 8. Family member concerns about your child's safety during the procedure.

Figure 9. Family member concerns about your child's comfort during the procedure.

Figure 10. Family member concerns about your child's pain during the procedure.

Figure 11. Family member concerns about your child's breathing during the procedure.

Figure 12. Family member concerns about your child's heart rate during the procedure.

Figure 13. Family member concerns about your child's breathing during the procedure.

Figure 14. Family member concerns about your child's heart rate during the procedure.

Figure 15. Family member concerns about your child's breathing during the procedure.

Figure 16. Family member concerns about your child's heart rate during the procedure.

Figure 17. Family member concerns about your child's breathing during the procedure.

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Figure 19. Family member concerns about your child's breathing during the procedure.

Figure 20. Family member concerns about your child's heart rate during the procedure.

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Figure 98. Family member concerns about your child's heart rate during the procedure.

Figure 99. Family member concerns about your child's breathing during the procedure.

Figure 100. Family member concerns about your child's heart rate during the procedure.