

Comparison of preoperative versus postincisional intrathecal morphine on clinical outcomes in Adolescent Idiopathic Scoliosis

Vishal Sarwahi¹, Sayyida Hasan, Keshin Visahan, Jon-Paul Philip DiMauro, Terry David Amaral¹, Benita Liao

¹Cohen Children's Medical Center

INTRODUCTION: Intrathecal morphine has become a widely used adjunct in pediatric scoliosis surgery due to its benefit in decreasing narcotic use and improving pain scores. While optimal dosages and formulations have been described, it is unclear whether administration should be pre- or post-incision. We hypothesize that administration of intrathecal morphine post-incision will have a greater reduction in pain, out of bed (OOB) outcomes and length of stay (LOS).

METHODS: Patients with AIS undergoing primary instrumentation and fusion by three senior attendings between 2018 – 2021 were included. 215 patients met inclusion criteria, with 133 receiving intrathecal morphine pre-incisionally by the anesthesia team and 82 receiving intrathecal morphine by the surgeon at the time of closure. Outcomes measured include maximum pain score (POD 0 – 2), time to OOB, and LOS. Secondary outcomes included packed red blood cell (pRBC) transfusion, narcotic refills and complications observed. Kruskal-Wallis and Chi-Squared tests were used in data analysis to determine statistical significance.

RESULTS: The demographics of the study groups demonstrated no significant differences. Max pain scores were significantly lower in the group receiving intrathecal morphine pre-incision (4.8 vs 5.8, $p = 0.05$). When looking at individual postoperative days, patients experienced similar pain scores at activity for POD 0 (3.6 vs 3.6, $p = 0.97$) and POD 1 (5.5 vs 5.9, $p = 0.50$). However, on POD 2, patients experienced significantly different pain scores (5.0 vs 6.3, $p = 0.03$). OOB and LOS did not show any significant differences between groups. Furthermore, there were no observed differences in transfusion, narcotics refilled, or total complications between groups.

DISCUSSION AND CONCLUSION:

Intrathecal morphine administered pre-incision leads to better and more predictable pain control in AIS patients undergoing instrumented PSF.