

[NM-234] A Best Practice Guideline: An updated look at a protocol for anesthetic management for posterior spinal fusions

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Introduction:

Pediatric posterior spinal fusion is a common surgical correction for otherwise healthy patients with idiopathic scoliosis. These cases can present an anesthetic challenge secondary to MEP and SSEP monitoring, prone positioning, significant blood loss, and an often lengthy duration. Meeting the needs of our patients is achieved by using drug infusions that target analgesia, amnesia, akinesia, and hemodynamic stability.

Within the division of pediatric anesthesiology at UNC Hospitals, there was significant variability in the anesthetic management of these cases. Practitioners were using a combination of any number of agents, including but not limited to, propofol, ketamine, fentanyl, sufentanil, remifentanyl, clonidine, and dexmedetomidine. There were no clear endpoints, no consensus on titration to BIS values, and no consensus on dose initiation, range, and/or titration parameters. Because of the wide variety of anesthetic approaches, a disparity emerged in regards to time to extubation. The pediatric anesthesiology division instituted a "Best Practice Guideline" for the anesthesia care team to guide and tailor the anesthetic management for the posterior spinal fusion. It was hypothesized that defining the specific drug infusions, doses and ranges, and setting titration parameters would create a more predictable emergence time and subsequently decrease time to extubation.

Methods:

Through retrospective chart review, we analyzed the anesthetics of all patients with idiopathic scoliosis presenting for posterior spinal fusion from September 2010 to August 2013. Best practice guidelines were instituted in July of 2012 for all idiopathic scoliosis surgery. Data was collected for 115 patients (n=58 for best practice guidelines). Measured endpoints included time to extubation, PACU pain scores, and length of PACU stay. A student t-test was used to analyze the data.

Results:

A reduction of time to extubation by 30% was observed after implementation of the new guideline (12.6 minutes versus 8.57 minutes, $p=0.004$). PACU stay length was decreased by 13.6% (125 minutes versus 108 mins, $p=0.023$). Equivalent initial pain scores were observed in both groups (3.57 versus 3.33, $p=0.75$).

Conclusions:

Our goal is to provide safe and efficient anesthetic care to all of our patients. We found that developing a best practice guideline for the anesthetic management of posterior spinal fusions improved time to extubation, decreased PACU stay, and provided equivalent pain scores. Overall, our guideline appears to be superior to previously used methods. "Best Practice Guidelines" may improve operating room efficiency while not compromising patient care. Their application in other areas of anesthetic practice should be considered.
