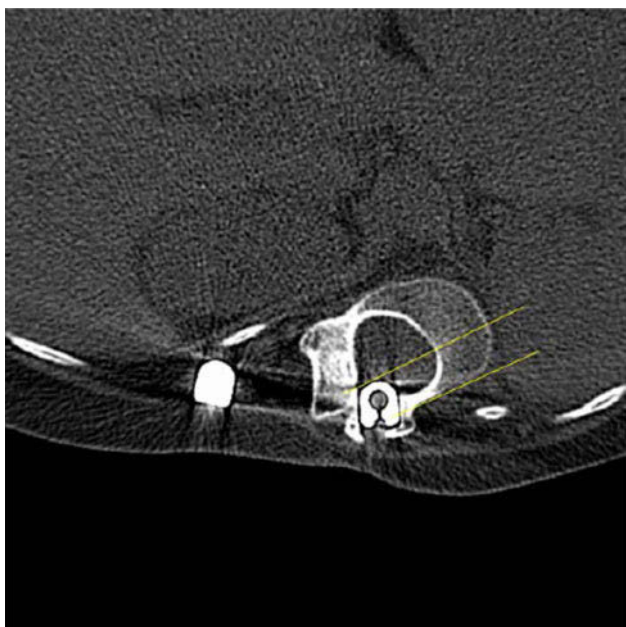


Spinal Centre in Ireland. Between 2007–2015, 90 patients were treated with contemporary growing rod systems. We defined VRM as ventral movement >2 mm at the kyphotic apex, plotted from the posterior dorsal cortex of the apical lamina on axial CT. In patients identified as having objective evidence on imaging of VRM, we examined patient characteristics and tried to identify factors potentially contributing to the development of this complication.

Results: 90 patients were treated with growing rods for early onset scoliosis between 2007 and 2015. Mean age at initial implantation was 8.62 years; mean follow-up was 36 months. CT imaging was available for 30 patients. There was evidence of VRM in 3 patients. In 1 patient, the rod had breached the apical lamina and resided within the spinal canal. The mal-positioning of this rod is considered a significant factor in a deleterious routine rod lengthening procedure that culminated with a complete cord injury for the patient.

Conclusions: Ventral rod migration is a potentially catastrophic complication of posteriorly applied growing rods. The use of advanced imaging in patients with posteriorly applied growing rods to screen for rare complications is a controversial area. VRM is a potentially quiescent complication and one we believe should be screened for in osteoporotic and severely kyphotic patients.



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Paper #36

Limiting Pre-Incision Instrument Uncovered Time via Quality Practice Intervention Decreases VEPTR Implantation Surgical Site Infections

Diane Hartman, Robert Campbell, Nikita Lakomkin, John Flynn, Michael Nance, Thane Blinman, Oscar H. Mayer, Howard Pantich, Anthony Capraro, Jesse Taylor, Brian Hanna, Keith Baldwin, Patrick Cahill, Lloydine Jacobs

Summary: Increased preoperative instrument exposure has been hypothesized to contribute to a greater risk of postoperative surgical site infection (SSI) in spine surgery. As such, a quality practice intervention (QPI) was implemented to reduce the instruments uncovered time (IUT) for VEPTR implantation. Reductions in IUT were significantly associated with

decreased incidence of SSIs. In a multivariate logistic regression model controlling for significant confounders, IUTs exceeding 100 minutes were associated with 8.5 times the odds of developing a SSI.

Hypothesis: Reductions in preoperative IUT via a QPI are associated with reduced incidence of SSIs following VEPTR implantation.

Design: A retrospective review of prospectively collected data.

Introduction: Increased IUT, often equivalent to the anesthesia ready time (ART), has been associated with a greater risk of SSIs following adult spine surgery. The relationship between IUT, ART, and other variables remains unexplored in VEPTR implantation which often requires prolonged ART for line placement. The purpose of this study was to examine the effect of a QPI to minimize IUT and the impact on postoperative SSIs.

Methods: A consecutive series of 187 VEPTR implant procedures performed between February 2007 and September 2015 was identified, with QPI begun in August 2013. Patient demographics, hospital length of stay, underlying diagnoses, ART, IUT, and perioperative variables were collected via retrospective registry review. The primary outcome measure was the presence of postoperative culture proven SSIs based on CDC criteria. A Student's t-test was performed to assess changes in IUT and ART following the QPI. Chi-squared and binary logistic regression analysis were used to identify significant risk factors for SSIs.

Results: A total of 16 procedures (8.6%) resulted in SSIs. Patients' mean IUT decreased from 120 to 42 minutes following the QPI ($p < 0.001$) while the mean ART did not change significantly ($p = 0.422$). The post-QPI infection rate was 3.2%/procedure compared to the pre-QPI incidence of 11.3%. Number-needed-to-treat (NNT) to prevent 1 infection was 12.3. Age, syndromic diagnosis, and IUT were significantly associated with the development of SSIs via bivariate analysis. In a logistic regression model incorporating these variables, only IUT (OR = 1.01, 95% CI = 1.00–1.02, $p = 0.021$) and syndromic diagnosis (OR = 3.25, 95% CI = 1.07–9.86, $p = 0.038$) remained significantly predictive of SSIs. An IUT exceeding 100 minutes was associated with 8.5 times the odds of developing a SSI.

Conclusions: IUT was an independent, modifiable risk factor for developing SSIs in VEPTR implantation. Decreasing IUTs by QPI may reduce the incidence of SSIs.

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Paper #37

“Next Day” Exam Reduces Radiation Exposure in Cervical Spine Clearance at a Level 1 Pediatric Trauma Center: A Pilot Study

Martin Herman, Jonathan Phillips

Summary: While CT scans are the standard for evaluating C-spines in the trauma setting, CT subjects patients to a large amount of radiation exposure. During the changes in C-spine protocols, CT scan usage decreased with “next day” clinical examinations.

Hypothesis: Our goal is to address these concerns by promoting a C-spine clearance algorithm with the main objective of identifying C-spine injuries while minimizing radiation exposure.

Design: In October 2012, we revised our original C-spine protocol in order to improve the process used for C-spine clearance and imaging. This protocol was then further revised in 2014 with the goal of decreasing CT scans through repeat, “next day” physical exams and increasing the involvement of Spine Services to clear C-spines apart from the admitting Trauma team. A retrospective review of the trauma database was performed on patients evaluated

