

Minimally Invasive Spine Surgery in the Pediatric Population: A Case Series

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Introduction

Minimally invasive spinal surgery (MIS) has historically been applied to the adult population. Almost no literature reports can be found regarding routine application of MIS techniques to spinal pathology in the pediatric population. However, due to its minimal disruption, MIS shows great promise in appropriately selected pediatric patients.

Here we illustrate the patient characteristics, operative technique, and surgical outcomes for minimally invasive lumbar procedures at our institution.

Methods

Consecutive pediatric patients undergoing elective MIS lumbar spine procedures were retrospectively analyzed from a single fellowship trained academic spinal neurosurgeon from 2008 to 2016.

Information was retrieved regarding procedure and disease pathology. Descriptive data was obtained including age, sex, body mass index, insurance coverage, smoking status, and co-morbidities. Outcome measures were recorded including

Results

16 individual patients underwent 17 procedures. The median BMI was 29.2. The range of BMI scaled from 20.8 to 41.5. Ages ranged from 12-19. Nearly 20% of the pediatric patients in our series were smokers.

Most patients underwent discectomy, with L5-S1 being the most common level. One patient underwent direct pars defect repair, and another underwent recurrent discectomy.

Nearly 90% of patients were complication free. One patient had a recurrent disc herniation, and another had a superficial wound infection. 82.4% patients enjoyed a full return to sports such as weight lifting, gymnastics, and contact sports. One patient required pain management to help alleviate ongoing pain. Another patient required a course of outpatient rehab to help with a foot drop pathology.

Conclusions

Advances in MIS surgery allow for application to a wider population. Our series illustrates the effective application of MIS techniques to

Learning Objectives

Understand the safe and effective use of minimally invasive techniques in pediatric spine surgery.

Appreciate the technical nuances of pediatric minimally invasive spinal surgery.

Understand the role obesity places in pediatric spinal pathology.

References

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