Initial Results with the Use of Fibrin Glue as a Hemostatic Agent to Prevent Epidural Hematoma Following Minimally Invasive Laminectomy

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Introduction

Spinal epidural hematoma is a known complication resulting from minimally invasive laminectomy with an incidence as high as 10%; our personal experience is an incidence of 4%. Surgeons will often employ flowable hemostatic agents prior to performing closure, but the expansile properties of these agents necessitate copious irrigation that can diminish the hemostatic effect. In cranial surgery, fibrin glue is a well-documented, non-expansile substance employed as a hemostatic agent. We present our initial experience using fibrin glue following tubular laminectomy to minimize post-operative spinal epidural hematoma.

Methods

Fibrin glue was employed as a hemostatic agent prior to removal of the tubular retractor in all minimally invasive laminectomies performed between September 2014 and February 2015. Cases were followed prospectively for signs of postoperative hematoma. Any patient with increased back or leg pain following surgery refractory to routine analgesic medications was ordered an MRI to determine if a clinically significant epidural hematoma was present. Surgical decompression was warranted if a significant hematoma was present and correlated with the clinical symptoms.

Results

52 minimally invasive laminectomies were performed during the time period. 56% of patients were women, and the mean age was 67. 40 cases were single-level, 10 were 2-level, and 2 were 3-level tubular-based laminectomies. There were no intraoperative complications. Mean hospital stay was 8 hours. 96% of patients went home the same day. No patient reported increased pain following surgery prompting postoperative MRI scan. There were no infections. All patients had excellent clinical outcomes based on MacNab criteria.

Conclusions

Fibrin glue can be employed safely as a hemostatic agent prior to closure and may potentially decrease the incidence of spinal epidural hematoma formation following minimally invasive laminectomy. Further studies are ongoing to determine the full benefit of fibrin glue in preventing hematomas in minimally invasive spinal procedures.

Learning Objectives

By the conclusion of this session, participants should be able to discuss the benefits of fibrin glue as a hemostatic agent prior to closure following minimally invasive laminectomy.