

## Healthcare Resource Utilization and Patient-reported Outcomes Following Elective Surgery for Intradural Extramedullary Spinal Tumors

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### Introduction

Health-care resource utilization for intradural extramedullary spine tumors (IDEM) is not well reported. We set out to determine the resource utilization 12-month following surgical resection of IDEM tumors and compare the cost to a matched cohort of patients undergoing decompression with or without fusion for degenerative spine pathology

### Methods

Patients undergoing elective lumbar spine surgery and enrolled in a single center, prospective, longitudinal registry were analyzed. Baseline, post-operative 3-months, and 12-month PROs were recorded: Oswestry Disability Index (ODI) or Neck disability Index (NDI), EuroQol -5D (EQ-5D), numeric rating scale pain scores (NRS). One-year spine-related direct and indirect medical resource-utilization was assessed. One-year resource use was multiplied by unit costs based on Medicare national allowable payment amounts (direct cost). Patient and caregiver workday losses were multiplied by the self-reported gross-of-tax wage rate (indirect cost). The PROs and costs associated with IDEM tumor surgery were compared to a propensity-matched cohort of patients with degenerative spine pathology

### Results

A total of 38 IDEM tumor patients matched with 38 degenerative spine pathology patients were included in this analysis. There was significant improvement in pain (BP, LP), disability (ODI) and quality of life (EQ-5D) in both age groups 12-month after surgery ( $P < 0.0001$ ). Mean direct cost was  $\$23769 \pm \$8107$  for fusion and  $\$21323 \pm \$6430$  without fusion surgery for IDEM spine tumor ( $P = 0.31$ ). Mean direct ( $\$22,675 \pm \$7,412$  vs.  $\$19,581 \pm \$11,637$ ,  $p = 0.12$ ) and total costs ( $\$25,940 \pm \$9,314$  vs.  $\$22,217 \pm \$12,162$ ,  $p = 0.13$ ) at 12-month following surgery for IDEM tumors were slightly higher compared to costs amongst those with degenerative spine diseases

### Conclusions

Surgical resection of the intradural extramedullary spine tumor provides improvement in patient-reported quality of life, general health, disability and pain at 12-month following surgery. The value of surgical resection of IDEM spine tumors is comparable, and within a threshold that is considered cost effective, to degenerative spine surgery from payers, providers, hospital and societal perspective

### Learning Objectives

The literature on resource utilization for spine tumors surgery is sparse. We demonstrate the value of surgical resection of IDEM spine tumors is comparable to more benign degenerative spine surgery from payers, providers, hospital and societal perspective.

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