



# Is Fusion Necessary After Intradural Spine Tumor Resection in Adults: A Review of Evidence and Practices

Mauricio J. Avila MD; Christina M. Walter MS; Jesse Skoch; Salman Abbasifard MD; Apar Patel MD MPH; Kamran Sattarov MD; Ali A. Baaj MD

Division of Neurosurgery, University of Arizona



## Introduction

Intradural spine tumors are uncommon entities; however, they still represent a high percentage of spinal tumors encountered by neurosurgeons. Controversy exists over when to provide fixation and fusion after tumor resection. Currently, there are good clinical data that supports fixation for selected pediatric patients. Unfortunately, the data are scarcer in adults with intradural tumors. The objective of this work was to review the published literature and analyze practice patterns and evidence for stabilization and fusion after intradural tumor resection in adults

## Methods

We performed a literature review via PubMed for information available regarding fusion in adults with intradural spine tumors. We did not limit our searched to any specific date in order to gather as much data as possible. Additionally, we manually searched the references of selected articles to add relevant articles. Finally, we retrieved the criteria for fusion (if any) in the selected studies.

## Results

A total of 639 articles were found and 34 were finally selected for analysis. Of those, 3 were literature reviews and 31 were retrospective case series. There were a total of 1124 patients on the series with 103 of them requiring fusion and 1121 that didn't require it. The mean follow up of all the series was 33 months (range 1.5-180).

The criteria for fusion that were common in most cases series were: 1) previous deformity (i.e. kyphosis in the cervical spine), 2) 3 or more levels of laminectomy, 3) laminectomy encompassing a spinal junction, 4) young adults (less than 30 years), 5) facetectomy =50%, 6) persistence of deformity after 1 year of the surgery and, 7) C2 laminectomy.

## Conclusions

There appears to be consistent criteria for fusion after intradural tumor resection in adults, but this is based on retrospective analyses. Prospective or randomized trials will likely provide more evidence supporting this practice.

## Learning Objectives

By the conclusion of this session, participants should be able to: 1) Describe the the existing criteria for fusion after resection of intradural tumors, 2) Discuss the different practices regarding stabilization after resection of intradural tumors

## References

1. Chamberlain MC, Tredway TL. Adult primary intradural spinal cord tumors: a review. *Curr. Neurol. Neurosci. Rep.* 2011;11:320-328.
2. Grimm S, Chamberlain MC. Adult primary spinal cord tumors. *Expert Rev. Neurother.* 2009;9:1487-1495.
3. Zadnik PL, Gokaslan ZL, Burger PC, Bettegowda C. Spinal cord tumours: advances in genetics and their implications for treatment. *Nat. Rev. Neurol.* 2013;9:257-266.
4. Traul DE, Shaffrey ME, Schiff D. Part I: spinal-cord neoplasms-intradural neoplasms. *Lancet Oncol.* 2007;8:35-45.