

## Introduction

Rising healthcare costs necessitate assessment of the value of medical procedures and establishment of quality standards of care. The objective of this study is to assess outcomes and risk factors for surgical resection of cervical tumors. Surgical resection may cure patients with primary spine tumors and may improve quality of life for patients with metastatic spine tumors. This study investigated documented cases of cervical spine surgery for primary and metastatic tumors.

## Methods

This retrospective single-center study included 35 patients (16 male, 19 female) with cervical spine tumors who underwent resection between 2001 and 2011. Primary outcome was McCormick postoperative grade within one year of discharge. Secondary outcomes included analyses of risk factors for neurological compromise, assessed using logistic regression.

## Results

Patient ages (18-75) breakdown: 30 years or younger (6), 31-50 years (22), 51 years or older (7). Preoperative symptoms: pain (none to moderate), upper extremity neurological deficits (paresthesias, weakness), McCormick scores: grade 1 (11), grade 2 (3), grade 3 (2), grade 4 (6). Time until surgery: 8-93 days. Mean hospital stay: 5 days. Mean estimated blood loss: 150cc. Most lesions were resected in a gross total fraction with few requiring instrumentation or fusion, and few complications. Final pathology: schwannoma (10), ependymoma (9), neurofibroma (5), chordoma (5), hemangioma (3), metastatic (2). Postoperative McCormick scores: 2 patients (8.5%) had improved scores, 7 patients (20%) had worse scores, exhibiting neurological deterioration. Large blood loss correlated with deterioration in McCormick score.

## Conclusions

In the spine, resection of metastatic tumors was associated with a high percentage of poor outcomes. Aggressive malignant tumors had the highest McCormick grade. This risk factor and finding may prove valuable for physicians and patients considering whether to proceed with metastatic tumor resection surgery. Future research should include outcome data from high-volume centers and national databases.