Socioeconomic and Regional Differences in the Treatment of Cervical Spondylotic Myelopathy

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Introduction

Surgery for cervical spondylotic myelopathy (CSM) is widely successful both with health-related outcomes and economically with a cost of over $25,000 USD per QALY [1-3]. There are multiple surgical treatment options for the disease including anterior, posterior or combined approaches [4–6]. In an effort to evaluate for trends in the surgical techniques used in the treatment of CSM and to elucidate regional or socioeconomic disparities, the Nationwide Inpatient Sample (NIS) was queried to assess treatment trends.

Methods

The NIS was queried for elective admissions with a primary diagnosis of cervical spondylotic myelopathy (ICD 721.1). Treatment was stratified based on the type of surgery performed – anterior fusion (ICD 81.02), posterior fusion (ICD 81.03), laminectomy (ICD 03.09), or combinations of the above. Upper cervical fusions (occiput to C2) were excluded. Treatment strategy was compared between different hospital types, primary insurer type, and region.

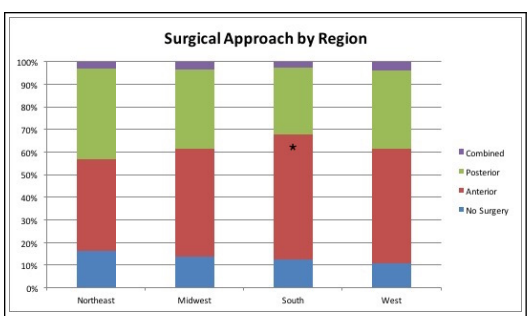

Figure 1

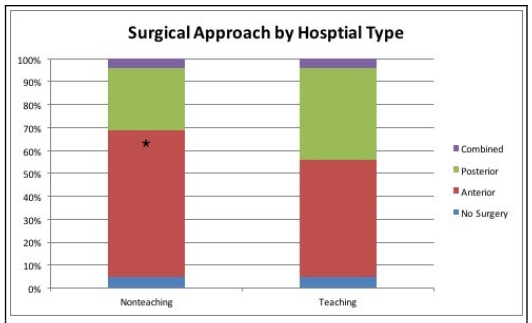

Figure 2

Results

From 2002-2012, 50,605 patients were electively admitted with a primary diagnosis of CSM. Of these, 28,465 underwent anterior fusions, 17,591 posterior surgery, and 1,960 had combined anterior-posterior fusions.

Anterior fusions were more common in Southern states (Figure 1) and in non-teaching private hospitals rather than academic institutions (Figure 2).

Fusion procedures were more common in patients with private insurance (Figure 3) and at non-teaching hospitals (Figure 4). Fusion procedures were also associated with higher hospital charges than non-fusion procedures (Figure 5).

Utilization of fusion surgeries increased from 60% in 2002 to 70% in 2012 (Figure 6).

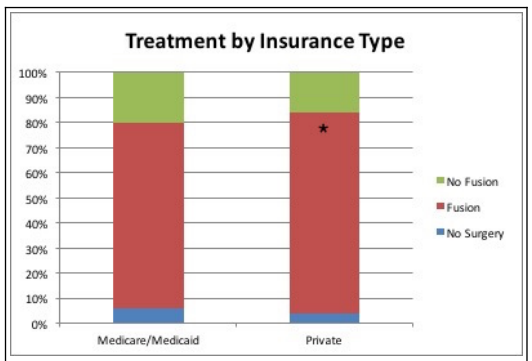

Figure 3

Conclusions

There are regional and socioeconomic differences in utilization of anterior and posterior approaches to surgical treatment of CSM. Fusion surgeries are associated with higher median charges and are increasing temporally in frequency.

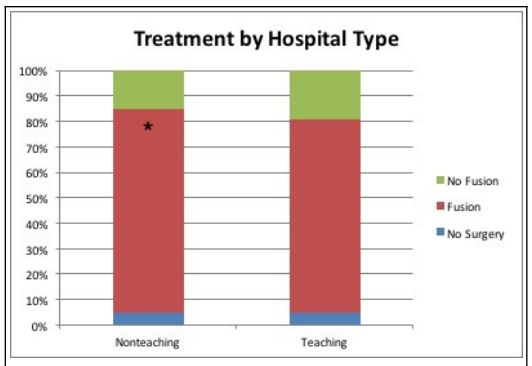

Figure 4

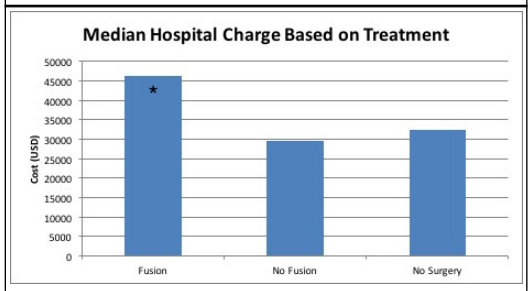

Figure 5

Learning Objectives

- Understand regional, temporal, and socioeconomic trends in the treatment of cervical spondylotic myelopathy
- Fusions are associated with higher hospital charges and have become increasingly common in the past 10 years, especially with privately insured patients and private hospitals.

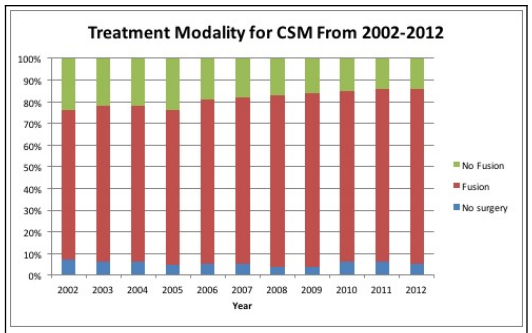

Figure 6

References

1. Fehlings MG, et al. Efficacy and Safety of Surgical Decompression in Patients with Cervical Spondylotic Myelopathy. J bone Jt Surg Am Vol. 2013.
2. Kalsi-Ryan S, et al. Ancillary outcome measures for assessment of individuals with cervical spondylotic myelopathy. Spine (Phila Pa 1976). 2013.
3. Fehlings MG, et al. Is surgery for cervical spondylotic myelopathy cost-effective? A cost-utility analysis based on data from the AOSpine North America prospective CSM study. J Neurosurg Spine. 2012.
4. Lawrence BD, et al. Surgical management of degenerative cervical myelopathy: a consensus statement. Spine (Phila Pa 1976). 2013.
5. Lawrence BD, et al. Anterior versus posterior approach for treatment of cervical spondylotic myelopathy: a systematic review. Spine (Phila Pa 1976). 2013.
6. Shamji MF, et al. Comparison of anterior surgical options for the treatment of multilevel cervical spondylotic myelopathy: a systematic review. Spine (Phila Pa 1976). 2013.