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ANTERIOR VS. POSTERIOR SURGICAL APPROACHES IN TREATMENT OF CERVICAL SPONDYLOTIC MYELOPATHY (CSM). OUTCOMES OF THE INTERNATIONAL AOSPINE MULTICENTER PROSPECTIVE CSM-I STUDY

Introduction/Aim
While a number of excellent surgical options for cervical spondylotic myelopathy (CSM) exist, the comparative effectiveness of anterior vs posterior approaches remains hotly debated. Accordingly, we analyzed the data from a large, multicenter international study which examined surgical treatments for CSM to address this question.

Methods and Materials
A total of 492 patients with CSM were enrolled in a prospective multicenter, international study in 16 sites in North and South America, Europe and Asia of with 467 receiving either Anterior (N=275) or Posterior (N=192) surgical approaches. One year post-surgery follow-up data on 435 (93.2% follow-up) patients were analyzed for differences in outcomes between the anterior and posterior groups using the modified Japanese Orthopaedic Assessment scale (mJOA), Nurick Score, Neck Disability Index (NDI) and Short Form 36v2 outcome measures.

Results
Anterior patients were younger than posterior (53.28±11.67 and 60.78±10.96, respectively, P<.01) and had more focal pathology (anterior: 2.89±2.78 levels treated; posterior: 4.75±4.62 levels treated p < .01). Both anterior and posterior patients improved on all outcome variables at 1 year post-operatively. There were no differences between the Anterior and Posterior groups in the extent of improvement in mJOA, NDI, SF36v2 Physical Component Score, SF36v2 Mental Component Score and times 30-meter walk test. The improvement in Nurick was greater in Anterior compared to Posterior patients (1.38±1.41 and 1.10±1.44, respectively, P=0.045).

Conclusion
There were important demographic and clinical differences between the anterior and posterior groups, suggesting that surgeons tailor the operative approach for CSM by virtue of the extent and location of pathology when these clinical and demographic factors were accounted for; anterior and posterior approaches were associated with similar improvements on all key outcome measures.