Said Osman

Sky Spine Endoscopy Institute, USA

Anatomic Image-based classification of Spinal Motion-Segment Disease of Lumbar Spine – Preliminary clinical report

Background: A comprehensive, anatomic, classification method accounting for all participants in the spinal motion-segment (SMS) pathology, tailored to treatment options, is necessary. This classification system will help the spine surgeon make those important decisions consistently, with minimal risk of leaving behind a significant lesion or disrupting structures that are non-participants in the disease process.

Purpose of the Study: To develop a comprehensive, treatment-orientated classification of lumbar SMS disease.

Materials and Methods: Contributors to SMS disease - intervertebral disc, facet joints, ligamentum flavum, and mal-alignment were identified. The degrees of abnormalities in these entities were coded, and the codes were entered in a table from which possible combinations of pathologic processes were generated.

A study of 57 lumbar MRI films (217 spinal motion segments), was carried out to determine the prevalence of the various combinations of the motion-segment disease. Intra- and inter-observer agreements were studied using Cohen's Kappa.

Pre- and post-operative MRI-based spinal motion-segment classifications were performed to evaluate the clinical application of this classification system in 15 patients.

Results: Study of the MRI films revealed 33.3% normal SMS; 8.8% represented normal segment except for bulging disc (D1A0L0F0); 6.9% represented intra-annular herniation, normal alignment, mildly thickened ligamentum flavum, and hypertrophied SAP of facet joint (D2A0L1F2); and 6.4% representing bulging disc, mildly hypertrophic ligamentum and hypertrophied facet joint (D1A0L1F3). Intra- and inter-observer agreements were high. Clinical application of the classification revealed pre-and post-operative MRI classification changes which positively correlated with clinical changes.

Conclusion: The anatomic image-based classification allowed accurate, reproducible documentation of SMS pathology which correlated well with clinical findings, pre-and post-operatively. With the emergence of new technologies, surgical options can be applied based on such accurate and standardized classification. This, in turn, will help minimize confusion for those who want to learn and facilitate reliable evolution in the minimally invasive technology.

Biography

Said Osman is an Orthopedic Surgeon with more than 20 years of experience specializing in Spine Surgery. He is the Founder of Sky Spine Endoscopy Institute, where he provides Complex and Minimally Invasive Spine Surgery. In addition, He trains surgeons across the world in Endoscopic and Endoscopically-Assisted Spine Surgery. He has been published in numerous peer-reviewed journals and holds eight patents for various medical devices.

e: gotoaila@gmail.com