

8th International Conference on
Spine and Spinal Disorders

March 18-19, 2022 | Webinar



Said G Osman

Sky Spine Endoscopy Institute, USA

Classification of Lumbar Intervertebral Disc pathologies based on anatomic image

In recent years a numbers of minimally invasive spine approaches and techniques have been developed. While the disease processes impacting the spinal motion segment have remained largely the same, the emerging technologies have changed treatment possibilities radically and not necessarily in an organized fashion. The current diagnostic techniques, also evolving, have helped us understand the disease patho-anatomy in minute details. A comprehensive classification system accounting for all anatomical variables in the disc disease, tailored to treatment options, is necessary. Such a classification will allow the surgeon to choose an appropriate surgical option in a consistent manner.

We believe that our classification system will assist the spine surgeon make that critical decision consistently, with the least risk of leaving a large lesion or disrupting an otherwise normal structure of the spinal motion segment. Furthermore, we believe such a comprehensive classification will assist surgeons and other caregivers to standardize treatment techniques to the various presentations of disc disease and apply the evolving technology in an organized fashion.

Purpose: To create a comprehensive, treatment-orientated lumbar disc disease classification.

Materials and Methods: The literature review was done for the classification of disc disease. The topography of the disc lesion, the morphology of the disc disease, and the symptom-complex produced by the disc lesion are detected and graded. The features that have been identified and graded are marked in a matrix. The combinations of the symptoms and anatomical features are then computed as shown in the matrix. The MRI databases held in the office were studied to determine the most common combinations of the disc disease and symptom complex.

Results: A total of 494 combinations were identified, but the majority has no clinical relevance. The retrospective study of the clinical data and MRI studies of 93 patients (50 male and

43 female) revealed the most affected motion-segment was L5-S1 (male = 19.3%, and female = 23.8%). The most common patho-anatomy is a globally bulging disc (T3L1), representing 37.6% of the total. A degenerative disc with a central, intra-annular tear (T4L1) is the second most common combination, representing 20.4% of the total. At 11.8%, globally bulging with severe axial pain and moderate radicular pain represented the most common patho-anatomic/clinical classification (T3L1B4R2). The most frequent top 10 patho-anatomic/clinical classifications represented 15.5% of the total.

Conclusion: Considering the multiple surgical options for excision of the herniated lumbar disc, including the conventional and minimally invasive, and the fact that the imaging technology allows spine surgeons to see, the disease status of each of the components of the spinal motion segment in great detail, it is critical to develop comprehensive classification systems that account for the disease entity's unique characteristics and guide treatment strategies. The classification system presented here is complex, but the software technology will be utilized for the classification system along with the most appropriate treatment approach.

Speaker Biography

Said G Osman is an orthopedic spine surgeon, specializing in spine endoscopy. He has been in private practice in Frederick, Maryland USA for 23 years. He obtained his medical training at University of Nairobi, Kenya. He then trained as an orthopedic surgeon in the UK where he obtained fellowships in general and orthopedic surgery, Edinburgh, Scotland. Driven by the desire to develop endoscopic spine surgery, he joined University Hospitals of Cleveland, Ohio, as spine fellow where he developed three endoscopic techniques including tranforaminal thoracic discectomy and fusion; unilateral, biportal, endoscopic lumbar foraminoplasty; and endoscopic trans-iliac approach to L5-S1 disc and foramen. After his training, he developed endoscopic tranforaminal interbody fusion and percutaneous instrumentation of the lumbar spine, in 2003. To improve diagnostic accuracy of spinal disorders, he developed image-based classifications of lumbar disc and spinal motion-segment.

e: gotoaila@gmail.com