Keynote Forum
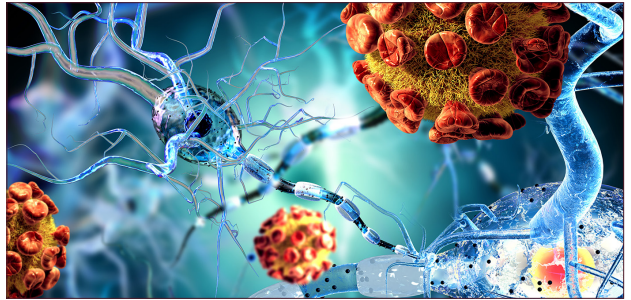# March 18, 2022

8th International Conference on

Spine and Spinal Disorders

March 18-19, 2022 | Webinar

Tariq Al-Saadi

McGill University, Canada

Intracranial Haemorrhage following Spinal Surgery: A systematic review of a rare Complication

Aim: A systematic review of the literature to investigate the prevalence of different types of Intracranial haemorrhages in patients who underwent spinal surgeries.

Methods: A literature review was conducted using multiple research databases. Data were extracted using multiple variables that were formulated incongruent with the study aim and then further analysed.

Results: Out of 112 cases, the most common type of haemorrhage was cerebellar haemorrhage (56.3%). Since most of the patients were in the middle age group (15-65), out of the 71 patients in this group, 60.6% developed significant cerebellar haemorrhage (p-value=0.004). Other significant findings in the middle age group included the occurrence of SDH and EDH in 19.7% and 5.6% respectively (p-value=0.024 and 0.019 respectively). Occurrence of EDH after spinal surgery was more commonly treated surgically with conservative treatment (11.5%) (p-value=0.011).

Conclusion: The data in this study showed that out of 112 patients, cerebellar haemorrhage was the most common type. ICH post-spine surgery is a rare complication and diagnosing it as early as possible is necessary for early intervention to prevent aggravation of the complications and to decrease the hospital length of stay post-operatively.

Speaker Biography

Tariq Al-Saadi is a neurosurgical resident at McGill University in Canada. He graduated with distinction from Sultan Qaboos University in Oman in 2016. He participated as a corresponding author in more than 20 publications and as a first author and co-author in more than 15 other neurosurgical papers. He is an editorial board member of the Gulf Research Collaboration Group (GRCG), which is established to conduct multi-centric high- quality research in the Gulf area. He is also an active editorial board member at Neurosurgical journals including Neuroscience and Neurological Surgery Journal, International Journal of Neurosurgery Journal, and Scholar Academic and Scientific journals. He was recognized as a reviewer by the "Reviewer Recognition Team" for the World Neurosurgery Journal (USA). He is a member of the American Association of Neurosurgical Surgery (AANS), Canadian Neurosurgical Society (CNSS), North American Spine Society, and Association of Surgeons in Training (ASiT) membership

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Robert C. Mulholland

Nottingham University, UK

Degenerative Disorders of the Lumbar spine: their Diagnosis and treatment A synthesis of a lifetime experience

In the 1970s, spinal fusion was the accepted treatment for disabling low back pain, based on the view that this was due to abnormal movement consequent to disc degeneration. The failure of the fusion to stop movement was attributed to the clinical failure of the operation. With the introduction of pedicle fixation, which immediately rigidly fixed the segment, it was anticipated that clinical success would follow. However, results were no better, and Professor Mulholland concluded that abnormal movement was not the cause of pain but abnormal loading. In his publication "The Myth of Instability", he pointed out that the movement regarded as abnormal had in the fifties been shown to be present in patients with no back pain, and that a clinically successful fusion showed evidence that it was load-bearing and had unloaded the disc. He showed experimentally that a painful disc on discography had very abnormal patterns of load not present in a degenerative painless disc. The essential basis for the surgical treatment of degenerative disc disease causing significant disability was not to stop movement, but to unload the disc, which was best achieved by an interbody fusion, or to a lesser degree, by disc replacement. Various intersegmental devices introduced in the nineties by altering disc loading could succeed in the short term, but were clearly unpredictable as how they altered the pattern of loading was random.

However, the role of abnormal movement as a cause of pain remains uncertain. He recently, however, had the opportunity to review a series of patients with spondylolisthesis who were treated by a minimal intervention technique involving pedicle fixation, which reduced and fixed the spondylolisthesis. He noted that, unlike his experience with pedicle fixation for low back pain in the absence of spondylolisthesis, in this group of patients, pain relief was immediate in over 80% of patients. As the surgery was minimal with minimal access related injury, one was confident that the relief of pain was due either to the reduction of neurological pain or to stopping movement. The results have now been followed up for 4 years, and the results have been published. The conclusion that movement pain was a feature of degenerative spondylolisthesis was explained the observation that fusion for spondylolisthesis was usually successful because all that was required was a fusion that stopped movement and did not unload the disc.

He discusses the various types of neurologically induced pain, spinal stenosis, and root entrapment, and the surgical procedures that are appropriate. He finally explores the role of clinical assessment in patients with low back pain. He emphasizes that the aim of treatment is to relieve pain and that the clinical history is vital in determining whether the pain is load-related, movement-related, or neurologically elated (spinal stenosis and root entrapment). What he terms "benign interrogation" in taking the history should allow the surgeon to determine which type of pain is present and treat accordingly, that is, unload the disc, stop movement, or decompress the nerve elements. He outlines the clinical features of each type of pain. As the bigger the operation, the more likely that further operations will be required, he emphasizes that surgical treatment must be as minimal as possible to relieve the specific pain that the patient experiences.

Speaker Biography

Robert Mulholland has qualified at the Royal London Hospital. He went into the Australian Navy to do his National Service. On returning to England, he did his Fellowship, and then went to the RNOH as an SHO, and then to St Bartholews Hospital for two years, and then to the Robert Jones and Agnes Hunt Hospital at Oswestry, and then to Seattle, Washington, USA. He was exposed to the management and treatment of low back pain. Returning to the UK, he was appointed to Nottingham and Harlow Wood in 1972. Over the following years, he slowly increased his involvement in the spine. In the 1990s, he closely involved, writing the first papers concerning the value of MRI in the diagnosis of spinal stenosis, and in his lecturing the need for the use of MRI in spinal problems. He was president of the Society for Back Pain Research, President of BOSS, the predecessor to BASS, and President of the International Society for the Study of the Lumbar Spine. His research had very much to do with the spine. In 1995, he was given a personal chair by Nottingham University in recognition of his contributions to teaching and research. He had published over sixty peer-reviewed papers and invited articles in the orthopaedic literature.

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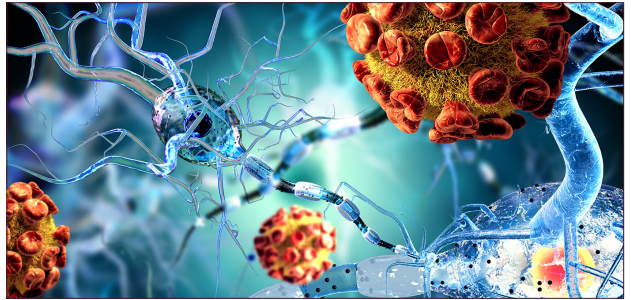
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Said G Osman

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 froaminoplasty; and endoscopic trans-iliac approach to L5-S1 disc and foramen. After his training, he developed endoscopic transforaminal 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.

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