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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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