MAGNETIC RESONANCE IMAGING (MRI) EVALUATION OF THE LUMBAR SPINE LIGAMENTUM FLAVUM & ITS CONTRIBUTION TO SPINAL STENOSIS

HL TEH, YUSOF M.I, JOEHAIMEY J

HOSPITAL UNIVERSITY SAINS MALAYSIA, KUBANG KERIAN, MALAYSIA

Background:
Removal of thickened ligamentum flavum as part of laminectomy in lumbar spinal stenosis is crucial to ensure adequate decompression. The extension of the ligamentum flavum in the spinal canal, its relationship with the lamina and its contribution to spinal stenosis require thorough understanding for complete resolution of stenotic symptoms following laminectomy.

Objective:
1. To compare the mean thickness of lumbar ligamentum flavum in young/non-stenotic group to older/stenotic group using MRI. 2. To identify the exact location of the maximum thickness and measure cranial & caudal extension of the ligamentum flavum anterior to the lamina.

Methodology:
A cross sectional study involving 50 young/non-stenotic group versus 50 older/stenotic groups. The thickness of ligamentum flavum, the exact location of maximal thickness of ligamentum flavum and cranial & caudal extension of the ligamentum flavum anterior to the lamina were evaluated using sagittal and axial view MR images from L2-S1.

Results:
There was significant association between the ligamentum flavum thickness and patients' age ($p<0.001$). There was more cranial extension of ligamentum flavum compared to caudal extension. The exact location of maximal thickness of ligamentum flavum was at the sublaminar region in spinal stenosis group.

Conclusion:
A better understanding of these pathoanatomy of ligamentum flavum in lumbar spinal stenosis enabled surgeons to adequately remove the thickened ligamentum and therefore improve surgical outcome in patients with lumbar spinal stenosis.