Pain in thoracic disc herniation

The pathophysiology of pain in symptomatic thoracic disc herniation (TDH) patients remains poorly understood. Mere mechanical compression of the spinal cord and/or the exiting nerve root by a prolapsed disc cannot explain the pathogenesis of pain in all cases. Previous studies report a direct correlation between the levels of proinflammatory cytokines in disc biopsy and the severity of leg pain in patients with lumbar disc herniations.

Using ELISA and high-performance liquid chromatography (HPLC), Andrade et al., from Cologne, Würzburg, Germany. Maastricht, The Netherlands, determined inflammatory cytokine levels (TNF- α , IL-1 β and IL-10) and aminoacid levels (glutamate, aspartate, GABA, glycine and arginine) in CSF samples from ten thoracic disc herniation (TDH) patients and ten control subjects who did not suffer an inflammatory disease nor pain related to spinal cord compression, and subsequently correlated these levels with preoperative pain scores. Differences between both groups were evaluated by a Whitney-U-test. In order to estimate the correlation between cytokine or amino acid expression and pain scores, data were analyzed using linear regression analysis.

No inflammatory cytokines were found in CSF samples from control subjects, whereas TNF- α , IL-1 β and IL-10 were detectable by ELISA in all CSF samples from TDH patients. TNF- α and IL-10, but not IL-1 β levels moderately correlated with preoperative pain scores. Elevated TNF- α levels positively correlated with high pain scores; elevated IL-10 levels negatively correlated with high pain scores. Amino acids were detectable in all samples from both groups. There were no significant differences between the groups in any of the amino acids measured with HPLC.

Increased proinflammatory cytokine expression is associated with elevated pain scores in symptomatic TDH patients. On the other hand, there is no conclusive correlation between the intensity of pain and the local or systemic presence of amino acids associated with pain transmission ¹⁾.

Clinical signs of thoracic disc herniations vary widely. Anand and Regan proposed a clinical classification taking into account spinal pain, nerve root pain, and symptomatic spinal cord compression ²⁾.

The majority are asymptomatic, or the patient presents with nonspecific symptoms like chest wall pain, epigastric pain, upper extremity pain, and sometimes, a pain in the groin or the lower extremity causing the clinician to think of a more common problem than a thoracic disc herniation. While the rare nature, coupled with the atypical presentation, may lead to delay in diagnosis, it has been significantly cited in the literature that MRI can be very useful in diagnosing thoracic disc herniations (TDHs). The majority of asymptomatic TDHs were often diagnosed due to incidental MRI findings³⁾.

Symptomatic thoracic discogenic pain syndrome (TDPS) is a rare phenomenon making it challenging to diagnose

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Andrade P, Cornips EMJ, Sommer C, Daemen MA, Visser-Vandewalle V, Hoogland G. Elevated inflammatory cytokine expression in CSF from patients with symptomatic thoracic disc herniations

correlates with increased pain scores. Spine J. 2018 Aug 1. pii: S1529-9430(18)31082-9. doi: 10.1016/j.spinee.2018.07.023. [Epub ahead of print] PubMed PMID: 30077044.

Anand N, Regan JJ. Video-assisted thoracoscopic surgery for thoracic disc disease: Classification and outcome study of 100 consecutive cases with a 2-year minimum follow-up period. Spine (Phila Pa 1976). 2002 Apr 15;27(8):871-9. PubMed PMID: 11935112.

Fogwe DT, Mesfin FB. Pain, Thoracic, Discogenic Syndrome. 2017 Nov 8. StatPearls [Internet]. Treasure Island (FL): StatPearls Publishing; 2018 Jan-. Available from http://www.ncbi.nlm.nih.gov/books/NBK470388/ PubMed PMID: 29262010.

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