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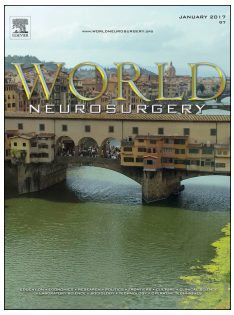

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Anterior transthoracic surgery with motor evoked potential monitoring for high-risk thoracic disc herniations: technique and results

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Abstract

Objective

We present our experience with anterior transthoracic surgery for high-risk thoracic disc herniations (TDHs) using motor evoked potential monitoring (MEPm).

Methods

We estimated surgical risk based on clinical and radiological characteristics, including antero-posterior (AP) spinal canal occupation (SCO), AP spinal cord compression (SCC), residual AP spinal cord diameter (RSCD), and intramedullary signal changes (ISC). We analyzed Anand, ASIA, and Nurick scores, anesthesiological, neurophysiological, and surgical reports. We considered >50% MEP signal deterioration significant.

Results

Out of 435 anterior transthoracic procedures, 77 concerned high-risk TDH(s): 69 single-level (SL), 8 multi-level (ML), 61 with clinical myelopathy, 6 with merely ISC. Mean SCO and SCC were 55.4% and 54.0% for SL, 31.8% and 33.9% for ML cases. ISC were present in 64% of SL and 50% of ML cases, calcifications in 87% of SL and 84% of ML TDHs. We initially performed 23 mini-transthoracic approaches (mini-TTAs) and 24 thoracoscopic