

O-27

A decisional algorithm for the surgical treatment of kyphotic degenerative cervical myelopathy

Marco Ajello¹, Nicola Marengo¹, Stefano Colonna¹, Ayoub Saaid¹, Filippo Lacatena¹, Ludovico Comite², Fabio Cofano¹, Diego Garbossa¹, Alexander Vaccaro³

¹*AOU Città della Salute e della Scienza, Neurosurgery, Torino, Italy*

²*Humanitas Gradenigo, Neurosurgery Department, Torino, Italy*

³*Rothman Institute, Jefferson University, Philadelphia, PA, United States*

Background: The optimal surgical treatment of kyphotic degenerative cervical myelopathy (DCM) is still object of debate. Cervical kyphosis directly correlates with spinal cord compression, making restoration of cervical lordosis a major objective of the surgical treatment.

Research question: We present a decisional algorithm thought to guide the surgeon in the choice of the optimal surgical treatment in DCM patients.

Design and methods: A retrospective analysis of patients with DCM treated with cervical arthrodesis was conducted. Cervical X-ray was used to determine baseline cervical curvature and post-operative lordosis. In patients with < 3 levels an anterior or posterior fusion was preferred; the choice of surgical approach was based on the location of ankylosis. In patients > 3 levels reducible with cervical extension, a posterior arthrodesis was preferred. Alternatively, in non-reducible cases with anterior ankylosis a combined anterior-posterior approach was favored; in non-reducible cases with posterior or circumferential ankylosis a combined posterior-anterior-posterior approach was preferred.

Results and discussion: A total of 257 patients treated with anterior (159), posterior (53) or combined (45) cervical arthrodesis was included in the study. Average global lordosis gain was 11° in patients with < 3 levels of DCM treated with anterior arthrodesis, and 17° in patients with > 3 levels of DCM treated with posterior fusion. In combined arthrodesis lordosis gain was more heterogeneous, varying from 12° to 78°. Transient dysphagia (7%) and pseudoarthrosis (3%) were the main complications in anterior approaches. Radicular C5 deficit (5%) and surgical wound dehiscence (2%) were the main complications in posterior and combined approaches. In almost all patients a post-operative neutral or lordotic cervical curvature was obtained. Our results support the feasibility of the described algorithm in the choice of the optimal surgical treatment of kyphotic DCM.