The Benefits of Cervical Total Disc Replacement to the Elderly Population after 7 Years Follow up

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Introduction: Traditional treatment of cervical spondylosis and cervical herniated disc disease with neurological compression is anterior spinal decompression followed by fusion. Total disc replacement has been reported to restore motion in the cervical spine decreasing adjacent level disease rate, but indicated for the young population. With a greater life expectancy, it's clear that the elderly population needs to be included in the cervical total disc replacement indications. This study evaluates PCM artificial disc in the elderly segment.

Methods: 14 patients with a mean age of 65.4 y/o (Range 60 - 80) with a total of 24 prostheses were enrolled in this study. The neural decompression was performed in standard Smith-Robinson technique. Radiographic (AP, lateral and dynamics images) and clinical outcomes were collected preoperatively and postoperatively after 1 week, 1, 3, 6 months and annually. The Neck Disability Index (NDI), Visual Analog Scale (VAS) and TIGT questionnaires were used to assess pain and functional outcomes.

Results: After 7 years follow-up, there were no deaths, no infections, and no reoperations. There were no cases of adjacent level disease after TDR. The mean VAS and NDI were statistically different in all periods when compared to preoperative means. One patient (4.2%) presented painful facet degeneration. Two discs (8.3%) presented bone formation with no movement of the disc, and other two patients presented bone formation with decreasing in total range of motion, but with no worsening in their clinical outcomes.

Conclusions: Following cervical arthroplasty with PCM prosthesis, radiographic and clinical outcome measurements were encouraging when compared to historical data of ACDF in elderly. Considering the aging population, cervical disc arthroplasty is a good treatment option for degenerative disc disease and a viable alternative to fusion in the elderly segment of the society.