

TITLE

Adjacent segment degeneration and adjacent segment disease in patients with cervical arthroplasty with 5 years follow-up.

AUTHORS

Abraham Isais¹, Amado González-Moga¹, Hugo Santos².

Spine Group from Department of Orthopedics and Traumatology, ISSEMyM, Ecatepec, Mexico¹
Unit of the Cerebral and Spinal Neurosurgery, Hospital Ruber, Madrid, Spain².

CORRESPONDENCE:

Abraham Isais Gomez
dr.isais@gmail.com

INTRODUCTION

Among the practical advantages of the cervical arthroplasty, the preservation of the movement could reduce the presentation of cases of adjacent segment disease and adjacent segment degeneration compared to anterior cervical fusion. It is estimated that approximately 90% of patients managed with anterior cervical fusion will present a new onset or progression of a degenerative adjacent levels, exhibiting symptoms during the first 10 years. Currently there are reports of reoperation of cases treated with this technique due to the presence of nonunion, bone collapse, migration of the implants and the development of adjacent segment disease.

MATERIALS AND METHODS

During the period between January 2005 and July 2010 were included 153 patients with an average age of 47.69 years (range 40-60 years, 56 men), who had a diagnosis of symptomatic cervical disc disease of 1 or 2 levels. All were treated by cervical arthroplasty prosthesis using the Mobi-C, Activ-C and ProDisc-C systems, searching for the presence of adjacent segment disease or degeneration according to the classification of Hillbrand. The monitoring was carried out with clinical examination and radiological control in all patients with visits at 15, 30 and 60 days and periodically thereafter 6 months.

RESULTS

The follow-up time was 60 months and only 11 cases (9.40%) of the 117 patients who were managed with radiculopathy in 1 level showed adjacent segment degeneration during the 5 years of follow up. The average time that the degeneration was observed was 30 months, without observing changes in the first year of follow-up in any of the cases. In patients where 2 levels were handled, we found 3 cases of degeneration (8.33%), drawing attention that these were presented earlier manner (12-18 months) compared to only 1 level affected group. We found 7 cases (5.98%) in which adjacent segment disease was presented in patients with 1 level affected and 4 cases (11.11%) of involvement in patients with 2 levels affected. It was observed that 81.81% occurred in

the upper segment and 18.19% in the lower segment. All patients who developed adjacent segment disease required revision surgery (11 cases), showing a positive trend during the monitoring period. No infections, spinal injuries or dural tears occurred. We did not observed the presence of collapse or migration of the implants. No mortality was documented during the study.

CONCLUSIONS

Cervical arthroplasty is an excellent tool for management of cervical radiculopathy, favoring the intervertebral movement and reducing stress, whereby the occurrence of adjacent segment degeneration and adjacent segment disease are diminished compared with anterior cervical fusion according to that reported in the literature.