

THE PAST, PRESENT, FUTURE OF CERVICAL ARTHROPLASTY

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Ideally, cervical arthroplasty has been introduced to maintain cervical motion and potentially avoid or minimize adjacent-segment degeneration. If cervical arthroplasty would be successful, the long-term results of surgery for cervical disc disease may improve all the time. However, there have been reported associated problems; kyphosis after Bryan, heterotopic ossification induced motion limitation, no motion preservation even at index level and higher revision rate compared to ACDF in limited cases. Also, the risk of developing adjacent segment degeneration was equivalent at over 2 year follow up reports after both ACDF and cervical arthroplasty procedures in cervical degenerative disc disorders. Cervical disk arthroplasty, one of the emerging motion-sparing technologies, is currently undergoing evaluation in the many country as an alternative to arthrodesis for the treatment of cervical radiculopathy and myelopathy. There are many challenges when deciding between arthrodesis and arthroplasty. Prosthetic performance demands exacting implantation techniques to ensure correct placement, thus placing increasing demands on special instrumentation and surgical skills. It demands to understand the prosthetic lubrication, wear, and biologic effects and to be familiar with currently available information regarding kinematics, basic science, testing, and early clinical results. Fortunately, by too much research, a number of devices are either at the late stage of preclinical study or in the early stage of clinical trial, and the results maybe promising. New design device will be produced to replace totally or partially patient spinal disc largely dependent on the pathological entity in near future.