

Introduction

Cervical disc arthroplasty (CDA) has become more widespread in the treatment of degenerative disc disease of the cervical spine. One possible complication understated in the literature is periprosthetic osteolysis. This phenomenon is an immune response to debris from wear of the prosthesis resulting in resorption and destruction of the surrounding bone. The purpose of this study was to examine the incidence and characteristics of this complication at our institution.

Methods

We retrospectively reviewed clinical and radiographic information of patients undergoing cervical arthroplasty between 2008 and 2017 from a prospectively maintained database at our institution. All patients underwent the standard anterior approach operation for one or two level CDA using Mobi-C disc (Zimmer Biomet, Inc). Postoperatively, all patients underwent 3, 6 and 12-month interval follow up clinic visits and radiological evaluation with upright, flexion/extension cervical X-Rays.

Results

A total of 64 patients (35 male) with a mean age of 48 years underwent xx CDA. Two patients (3.1%) developed signs of radiographic periprosthetic osteolysis as noted in cervical X-rays at 80 months and 3 months post-operatively. One of the two patients was clinically asymptomatic and the other developed symptoms of myeloradiculopathy, which was successfully treated by removal of artificial disc, corpectomy, cervical fusion anteriorly followed by posterior cervical fusion.

Conclusions

Cervical total disc replacement is a safe procedure with favorable outcomes. A small percentage of patients may develop periprosthetic osteolysis. Surgeons performing total disc replacement of the cervical spine should be aware of this understated but significant complication. All patients undergoing cervical arthroplasty should be continuously monitored for periprosthetic osteolysis.

Learning Objectives

- 1) To understand the outcomes after cervical total disc replacement
- 2) To understand the incidence and management of periprosthetic osteolysis

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