Total Joint Replacement in Patients With Dementia Syndromes: A Report of Thirteen Cases

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abstract

The hospital course and clinical outcomes of 14 joint replacement surgeries in 13 patients with dementia syndromes were evaluated. Eight patients were disoriented postoperatively. Complications included slow progress in physical therapy, getting out of bed unattended, aggressive behavior, pulling out an intravenous or Foley catheter, and falling out of bed. Three patients were unable to comprehend their movement restrictions, resulting in one dislocated hip from bending and twisting. Eleven of twelve joints available for follow-up were believed to be painless and functional. One patient was inactive due to fractures secondary to osteoporosis. Although complications arise from patients’ disoriented status, total joint replacement relieves pain, and the patients’ relatives indicated satisfaction with the results of the surgery. The family of a patient with dementia syndrome must be actively involved in all aspects of care after total joint replacement.

Dementia syndromes, such as Alzheimer’s disease, can severely affect a patient’s mental status, increasing the likelihood of a complicated postoperative course after total hip replacement (THR) and total knee replacement (TKR). Patients with dementia can become disoriented during the postoperative course, complicating their postoperative care, adherence to movement restrictions, and physical therapy.

Joint replacement outcomes in patients with Alzheimer’s disease are undocumented in the literature. This is due in part to lack of routine, objective documentation of patients’ mental status pre- and postoperatively, and difficulty associated with diagnosing Alzheimer’s disease. Few patients have diagnosed cases of Alzheimer’s on presentation for total joint replacement. Secondary diagnoses, such as Alzheimer’s disease, are rarely tracked in total joint replacement research because of the limited accessibility of outside patient records.

This study assessed the hospital course and clinical outcome of THR and TKR in 13 patients with dementia syndromes identified at our center.

MATERIALS AND METHODS

Between April 1989 and December 2000, 13 patients (7 men and 6 women) who underwent THR, TKR, or both with a documented pre-existing diagnosis of Alzheimer’s disease or dementia in the preoperative screening evaluation were identified. No specific verification of this diagnosis existed other than the clinical presentation.

Average patient age was 78 years. Eight patients had a THR, four patients had TKR, and one patient had a simultaneous THR and TKR. The average length of hospital stay was 7 days. The average length of stay for all total joint replacements in this center from 1989-1999 was 6.1 days. Seven patients were deceased at the time of the study. Patient records were reviewed to assess complications related to dementia or Alzheimer’s disease during the hospital course.

Routine follow-up examinations of three patients (four joints) and telephone conversations with relatives of eight patients were used to assess the success of the total joint replacements. One patient was lost to follow-up. One patient died 3 years postoperatively, and no relatives could be contacted. During telephone interviews, if patients were reported by their relatives to have had a pain-free joint when sitting and walking, they were given a normal pain score.

Of the patients with THR, one patient had a Bimetric femoral prosthesis with a Universal acetabular prosthesis (Biomet,
Warsaw, Ind), three patients had Integral femoral prostheses with Bioclad cemented all-polyethylene acetabular prostheses (Biomet), four patients had Answer femoral components with Bioclad cemented all-polyethylene acetabular prostheses (Biomet), and one patient had a Stanmore femoral prosthesis with an all-polyethylene acetabular prosthesis (Biomet). All acetabular and femoral prostheses were cemented, and all femoral heads were 28 mm. Of patients with TKR, one patient had a Total Condylar prosthesis (Howmedica, Rutherford, NJ), and four had AGC prostheses (Biomet).

RESULTS
Six patients were discharged home or to home health care. Two patients were sent to an extended care facility, and 5 were sent to a transitional care unit or rehabilitation facility. Preoperatively, 12 patients were diagnosed with Alzheimer’s disease or had dementia. Eight patients were disoriented to person, place, and time during the postoperative course. Of these 8 patients, 3 got out of bed unattended, and 1 became aggressive and needed close personal observation for his safety. One patient pulled out an intravenous catheter. One patient fell out of bed and pulled out a Foley catheter. Three patients with THR were documented as not comprehending restrictions on bending and twisting. Of these 3 patients, 1 had repeated dislocations from getting out of bed unattended and ignoring restrictions. Relatives who understood their restrictions aided the other 2 patients, preventing dislocation. One patient had no sign of dementia preoperatively or during the postoperative course, but shortly thereafter a diagnosis of Alzheimer’s disease was substantiated. Three patients experienced difficulty meeting physical therapy goals. All 3 patients were disoriented to person, place, and time during the postoperative course.

Eleven of 12 patients available for follow-up had successful total joint replacements, with pain relief or function restoration. The families did not bring the patients in for a clinical follow-up unless the patients had problems with their total joint replacements. It was common for families to express embarrassment about the patients’ behavior resulting from their Alzheimer’s disease, a factor that can discourage families from taking the patients out in public unless absolutely necessary.

Average clinical follow-up was 1.9 years (range: 0.6-5 years). Average follow-up was 2.9 years (range: 0.2-8.3 years), when telephone interviews were included as follow-up visits.

Patients with dementia can become disoriented during the postoperative course, complicating their postoperative care, adherence to movement restrictions, and physical therapy.

Average Harris pain score in 7 patients with THR was 41.2 points (of 44 possible points). The average Knee Society pain score in 5 patients with TKR was 49 points (of 50 possible points). It was not possible to calculate function scores based on telephone interviews, and only 6 patients had postoperative Harris hip scores or Knee Society knee scores recorded at clinical follow-up. One patient with a THR could not walk at final follow-up because of fractures in both legs secondary to osteoporosis. One patient was lost to follow-up, and the success of the total joint replacement could not be determined. Seven patients were deceased at the time of the study. The average time between surgery and death was 3.1 years (range: 1.4-4.9 years).

DISCUSSION
The postoperative courses of 11 of 13 patients with THR and TKR with dementia syndromes were complicated by the patients’ altered mental status. Most complications did not result in injury to the patient. The dislocation risk could be reduced in patients with dementia syndromes by the use of an anterolateral approach. In a study conducted at our institution, the dislocation rate using a posterolateral approach was 4%, whereas no dislocations occurred with an anterolateral approach.

Four of the patients’ relatives stated that their presence in the hospital with the patients throughout the postoperative course helped the patient regain orientation and progress through physical therapy. The clinical follow-up period was brief, with an average clinical follow-up of 1.9 years. This is due to the inconvenience of transporting patients with dementia syndromes, who, in most cases, rely on relatives for transportation.

The overall results of the total joint replacements were successful, although relatives often facilitate the postoperative assessment of patients with dementia syndrome. All of the patients who were not lost to follow-up had pain relief, and the relatives who were contacted by telephone reported satisfaction with the outcome of the patients’ surgeries.

If a surgeon plans a total joint replacement on a patient with Alzheimer’s disease or another form of dementia, the patient’s family should be available to personally care for the patient for 3 months postoperatively to avoid major complications.

REFERENCE