

Nicholas M. Habich*; Shawn D. Felton*; Jason C. Craddock*; Todd Wisocki^

*Florida Gulf Coast University, Marieb College of Health and Human Services, Fort Myers FL; ^AORC, Cape Coral, FL

Abstract

The patient was a 63-year-old, 90 kg, 182 cm, male carpenter. The patient's prior medical history included a total knee arthroplasty in his right knee 1 month prior. Patient reported to doctor's office complaining of knee pain and lack of function for approximately 6 months. Patient had no specific mechanism of injury. Initial evaluation revealed swelling and an antalgic gait, but no discoloration, gross deformation or signs of trauma. Evaluation also revealed no loss of sensation or motor control, but showed a strength deficit in the left hamstrings and quadriceps when compared bilaterally. Medical history included total knee arthroplasty in right knee and type 2 diabetes. Through use of X-Ray and MRI, patient was diagnosed with osteoarthritis in left knee. Patient was also advised that he may have damaged menisci in the left knee, but MRI results were inconclusive. Patient was advised to move forward with a partial knee arthroplasty. Upon choosing to do so, he moved forward with physical therapy and rehabilitation 3 days per week for 4 months. This plan consisted of open chain range of motion exercises, working to increase the strength of the hip flexors and the knee flexors and extensors. The goal of treatment was to return knee flexion to within functional limits, defined as at least 110 degrees of active knee flexion, and to walk full weight bearing without an assistive device. To date, patient has not yet returned to work or full function. Patient had partial knee arthroplasty in left knee performed within one month of full knee arthroplasty in right knee. This case highlights a patient who suffered from osteoarthritis in his left knee, and chose to undergo a partial knee arthroplasty instead of living with pain and loss of function. As athletic trainers in a rehabilitative environment, we learn what an impact pain on a daily basis can be to our potential patients.

Introduction

This patient reported to the orthopedic surgeon and complained of intense, chronic bilateral knee pain. No mechanism of injury was acknowledged. Upon imaging, the patient was diagnosed with Osteoarthritis in both knees. A total arthroplasty was performed in his left knee, and 2 months later, a partial arthroplasty was performed in his right knee. Following surgery, the patient began a rehabilitation protocol with the Athletic trainer



Fig 1: Artificial joint model

Purpose

Domain IV in Athletic Training is Treatment and Rehabilitation. This case highlighted an example of an AT performing a therapeutic rehabilitation protocol on a patient post-surgical intervention.

Background

- Male
- 63 years old
- 90kg, 182 cm
- Diabetic
- Carpenter
- Previous Arthroscopy in Left Knee

Differential Diagnosis

- Osteoarthritis
- Medial Meniscus Tear
- Rheumatoid Arthritis

Clinical Evaluation

The patient was a 63-year-old, 90 kg, 182 cm, male carpenter. The patient's prior medical history included a total knee arthroplasty of his left knee one month prior to his current visit. Patient reported to physician's office complaining of knee pain and lack of function for approximately 6 months in duration. Patient had no specific mechanism of injury. Initial evaluation revealed swelling and an antalgic gait, but no discoloration, gross deformation or signs of trauma. Evaluation also revealed no loss of sensation or motor control, but a strength deficit was noted through manual muscle testing of the left hamstrings and quadriceps when compared bilaterally. Further medical history included total knee arthroplasty of left knee and type 2 diabetes.

Treatment

Following successful surgery, he began with physical therapy and rehabilitation 3 days per week for 4 months. Initial treatment consisted of pain management through the use of ice and interferential current stimulation and swelling management through the use of compression and elevation. For therapeutic exercise, he was placed on a plan which increased in intensity every 2 weeks. This plan consisted of open chain range of motion exercises, specifically designed to increase the strength of the hip flexors and the knee flexors and extensors.



Fig 2: X-Ray of patient with partial knee arthroplasty

Treatment- Continued

The goal of treatment was to return knee flexion to within functional limits, defined as at least 110 degrees of active knee flexion, and to walk full weight bearing without an assistive device. The patient gained 105 degrees of active knee flexion at 6 weeks. However, due to complications in the bone cementing process, the patient was then forced to have a full arthroscopy on this same right knee, effectively restarting the rehabilitation. To date, patient has not yet returned to work or full function.

Implications

Knee replacements are a common term used to describe some version of a knee arthroplasty. This is a surgery in which a patient's knee joint has worn down, due to varying factors, and a replacement of the pieces of the body involved in the joint must be utilized. This is an incredibly invasive surgery, with excessive trauma created and an extended recovery period. The surgery has been performed since at least 1968 and there are more than 600,000 knee replacements performed every year

The most common cause for requiring a knee arthroplasty is normal wear and tear associated with aging. While this same wear and tear can occur in younger patients, especially those with a greater body mass, this generally applies to patients 50 years and older. With this issue, the patient can eventually lose portions of the articular cartilage and develop bone spurs on bones in the knee joint.

Conclusion

This case highlighted a patient who suffered from osteoarthritis in his right knee, and decided to undergo a partial knee arthroplasty instead of living with pain and loss of function. As athletic trainers in a rehabilitative environment, the following cases are common and is important to appreciate the complexities and possible comorbidities when designing and implementing a rehabilitation plan