

Abstract

The menisci are located in the knee joint between the femur and the tibia. They are made out of fibrocartilage semicircular bands that span the aspect of the knee joint. The menisci help protect the knee from the stresses placed on it from walking, running, climbing and bending. A meniscus tear occurs when there is forceful twisting or hyper-flexing of the knee joint. When an individual suffers from a meniscal tear, it can be extremely painful. It is extremely important that patients begin a conservative rehabilitation program that aid in strengthening the muscles around the knee to decrease joint forces to the meniscus.

Introduction

The initial injury occurred two years ago when the patient was at the movie theater and twisted her right knee awkwardly while standing from a sitting position. It became inflamed and she experienced extreme pain. The injury was reported after the incident and was treated the athletic trainer at that time. The swelling eventually decreased after a few days with conservative treatment but she remained with knee pain. The athletic trainer did an evaluation and believed that she had a torn medial meniscus. However, given that the patient was not an athlete and had no primary insurance, she was unable to see a doctor to verify the findings and determine if she needed surgery.

Purpose

As an athletic trainer, there are times when you must rehabilitate patients who are unable to see a doctor due to not having the resources they need, such as health insurance. In this case report, it was hypothesized that the patient had a torn medial meniscus, but was never verified with an MRI. The purpose of this case was to rehabilitate the patient so that she could perform her job as pain free as possible, given the resources that were available.

Background

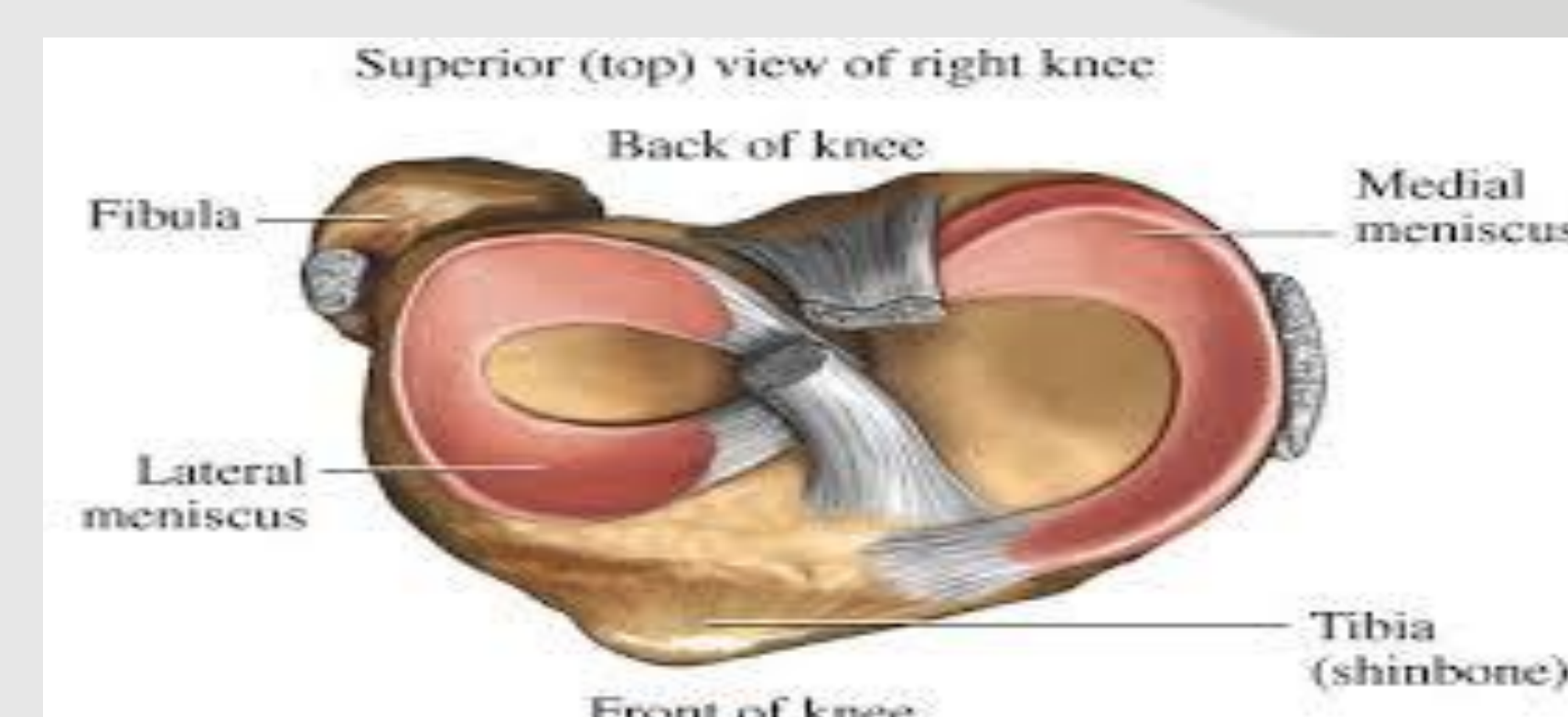
- Retired female athlete
- 22 years old
- 65.7kg
- 177.cm tall.
- Involved in multiple sports in high school
- Always had “bad knees”
- She has never seen a doctor because she did not have insurance.

Differential Diagnosis

- Torn medial meniscus
- Torn lateral meniscus
- Patella femoral pain syndrome
- Anterior medial knee instability,

Clinical Evaluation

The injury was re-evaluated a year following the initial injury. At the time, there was no swelling or ecchymosis. Most of the pain was on the medial knee both anterior and posterior. The most pain was experienced when walking up and down stairs or any time she flexed her knee to greater than 60 degrees or full extension. She sometimes felt clicking and catching. Her AROM was normal with pain while MMT showed that knee extension and flexion were 4/5. (+) Thessaly, (+) McMurray Test, (+) Apley’s Compression Test, (-) Anterior Drawer, (-) Posterior Drawer (-) Valgus, (+) Varus (false positive due to pain being where clinician was applying pressure). The same differential diagnosis was reached that she had a torn medial meniscus.



Treatments

The chronic nature of this injury and the inability to see a doctor resulted in rehabilitation beginning promptly. Three times a week, the patient began strengthening her core, hips, quadriceps, hamstrings, and calves. A standard rehabilitation session started with a five minute warm-up on the bike followed by at least three different core exercises. These core exercises began as simple abdominal bracing and progressed to planks, bridges, etc. Next, the hips, quadriceps, and hamstrings were exercised via multiple exercises beginning with the basics (clamshells, quad sets, four way quads, leg curls, heel slides) with no weight and then slowly progressed to adding ankle weight. Eventually, the patient was able to participate in more functional movement such as static wall squats at a tolerable pain level as well as step-ups on a stool. The last strengthening exercise would involve the calves. The patient began with simple two-legged heel raises and slowly advanced to one-legged heel raises on a stool. Finally, the patient would either stretch or foam roll and receive a treatment of electrical modalities (interferential, 15 minutes) and ice to help with any post rehabilitation pain or swelling



Implications

Due to the limited blood flow in the menisci, most tears require surgery to offer complete healing. In the case of this patient, surgery was not an option, due to not having insurance. Fortunately, there are other conservative methods of rehabilitating a meniscal tear. A meniscal tear is possible to play through as long as pain is tolerated. Developing a treatment plan that offers the best conservative treatment for a torn meniscus is crucial to keeping your athletes on the field and saving them from financial hardship.

Conclusions

This case highlighted the diagnosis and conservative treatment of a torn medial meniscus. This case suggested rehabilitation methods to be most effective, and what methods were not effective. The patient in this case study saw improvements when she was consistent in completing her rehabilitation. Unfortunately, there were many setbacks along the way and it was very difficult to advance to weight bearing flexion exercises past 60 degrees. The pain would improve until functional exercises were initiated, such as walking up and down stairs. These exercises would usually present as a setback in the rehabilitation process. Although there was improvement in reducing pain, the only way for the retired athlete to get back to 100% will be surgical repair of the medial meniscus.