

Abstract

Background: The athlete is a 26 year-old, 180cm tall, 81.5kg male recreational basketball player. His previous medical history includes recurrent ACL tears in the right knee in 2008, 2010 and 2012, all of which were reconstructed using a cadaver allograft. The athlete first reported to the orthopedic surgeon during the basketball season 2016, complaining of pain and instability of the right anterior knee. The orthopedic surgeon ordered imaging of the right knee. The athlete was diagnosed with a high-grade partial tear of the ACL and meniscal cyst from the MRI scan. The athlete's had surgery mid-august of 2016; the operation included removal of hardware right knee with bone grafting femoral and tibial tunnels and extensive debridement. One week post-operative, the athlete's right knee was reevaluated by the orthopedic surgeon- incisions were clean dry and intact with sutures intact over the incision sites. However, the athlete reported deep pain of a 6/10 on the antero-medial portion of the right knee and was referred to a physician for further imaging. The MRI scan showed a large synovial cyst located in the middle of the graft. The graft appeared to be torn with fluid tracking down the tibial tunnel. There appeared to be an associated medial meniscal tear. The athlete was referred to a physical therapist with a safe rehab protocol/progression. In approximately 6 months, the athlete will revisit the possibility of the anterior cruciate ligament reconstruction after his bone grafting in the tunnels have healed.

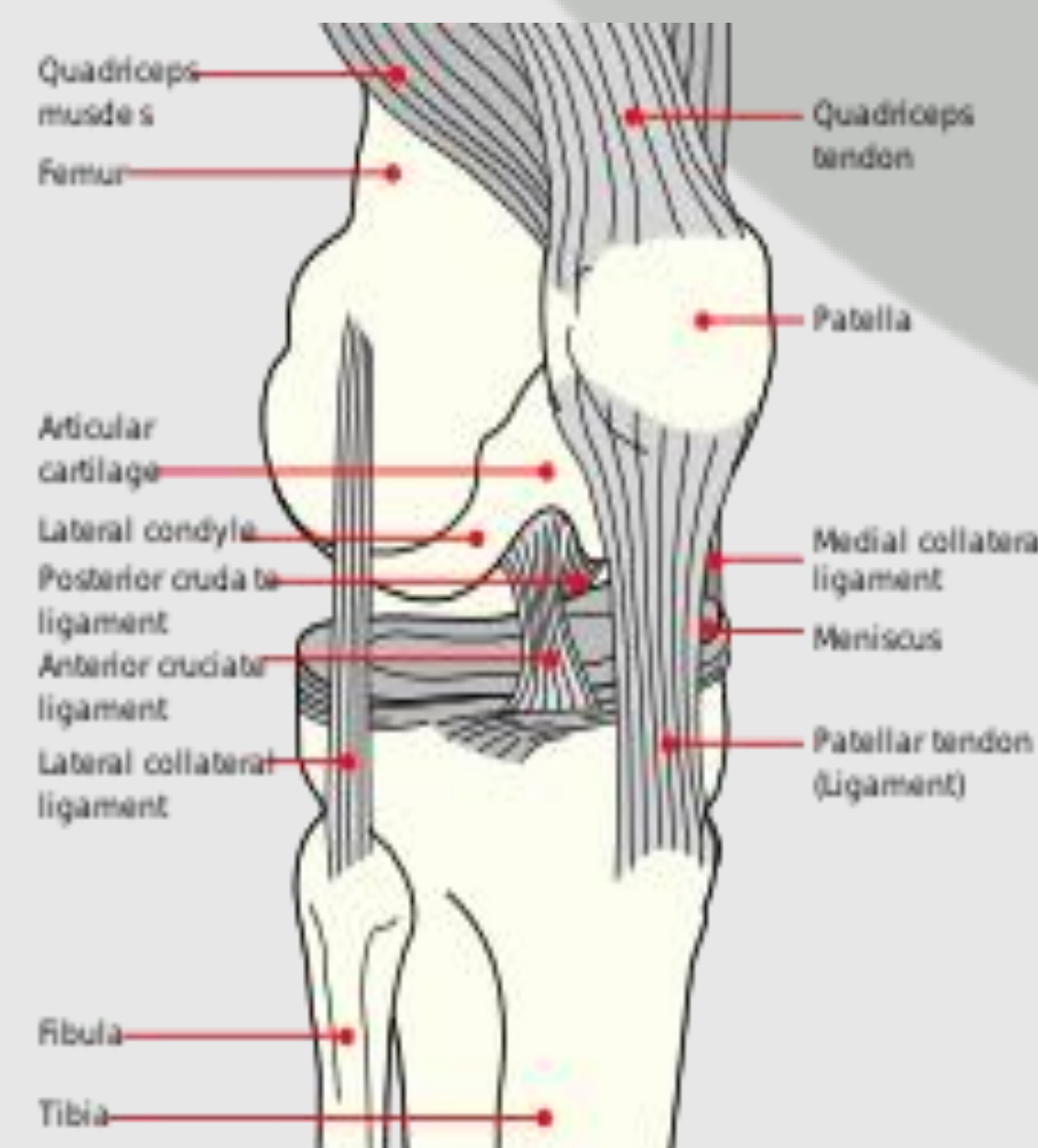
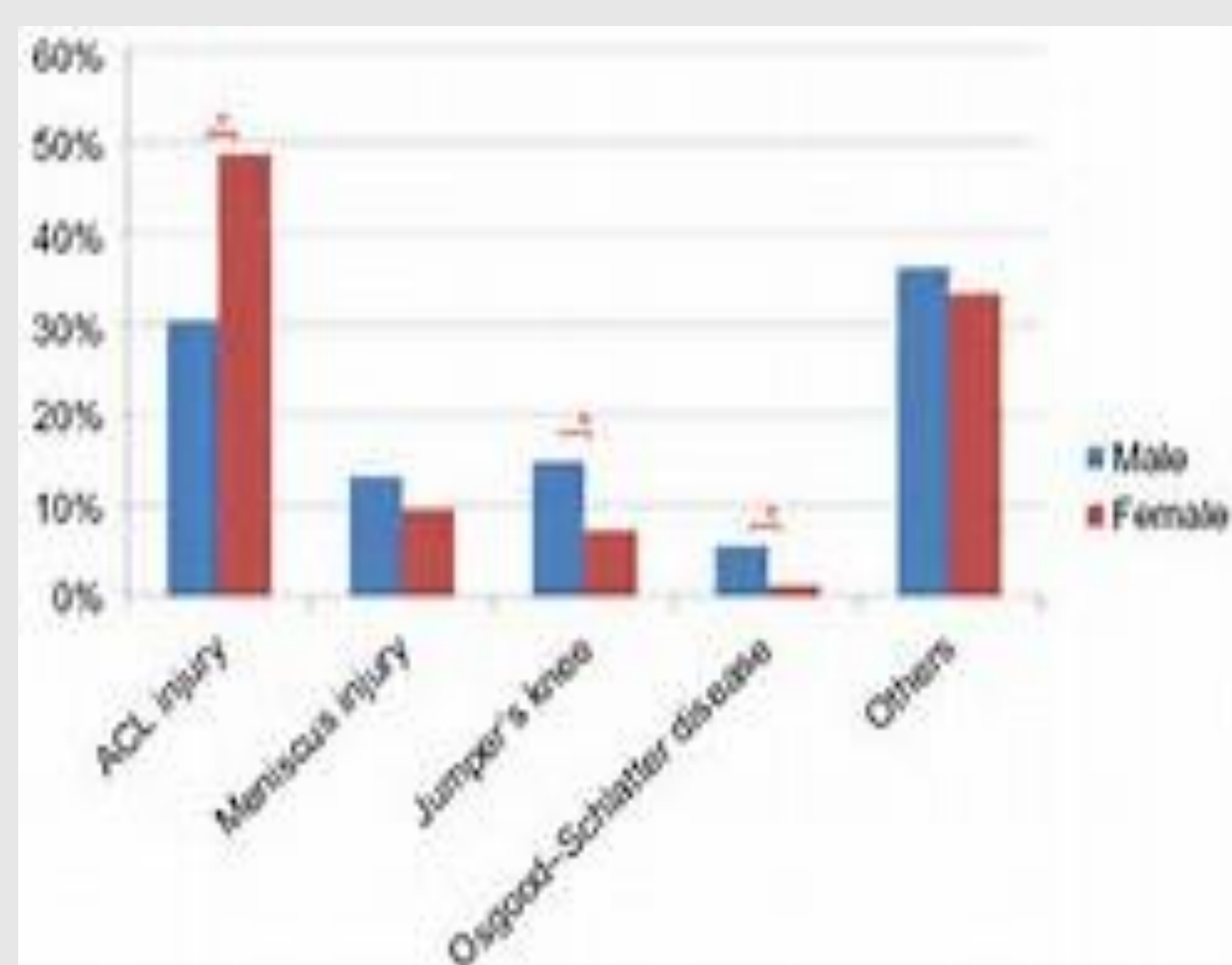
Differential Diagnosis: ACL Tear, Synovial cyst, Meniscal Tear **Treatment:** Prior to rehab and re-evaluation athletes' calf was soft and non-tender, negative Homan's, Compartments are soft. Range of motion for knee flexion was 85° and knee extension was -10° as measured by goniometer. Neurovascularly intact with a 2/2 posterior tibialis pulse. Skills of PT to advance WBAT – increase ROM, increase MMT protect structures + recover to PLOF safely. **Uniqueness:** Patient had multiple ACL failures and still had the same surgeon perform all three surgeries without considering to get a second opinion. **Conclusion:** The course of action is to alter the athlete's treatment and rehabilitation plan through trial and error until he can progress without symptoms according to the best practices indicated by research. This case has the ability to provide inside on treatment plans for other young male athletes with similar conditions and goals.

Purpose

One domain of athletic training is treatment and rehabilitation. This case report demonstrated a combination of strength and ROM training during rehabilitation to not only return athlete to practice but also help prevent future injuries.

Background

- 26-year old recreational basketball athlete
- Right hand/leg dominant
- Previous history of recurrent ACL tears in the right knee in 2008,2010,2012
- No known medical history



Differential Diagnosis

- ACL Tear
- Synovial Cyst
- Meniscal Tear

Clinical Evaluation

- Palpation revealed point tenderness at medial compartment and edema/effusion over the patella AROM during knee flexion measured at 105 degrees and knee extension measured at -10 degrees.
- Strength during knee flexion measured at 4-/5, hip flexion 5/5, gross ankle 5/5 all with Donjoy unlocked. Arthrogenic effusion inhibited quadriceps strength ; ie: knee extension.

Treatment

Initial treatment consisted of surgery; operation included removal of hardware in right knee with bone grafting femoral and tibial tunnels and extensive debridement. Athlete was fitted for an ACL brace. The athlete was scheduled for a re-evaluation in 6 months to revisit the possibility of the ACL reconstruction after the bone grafting in the tunnels have healed. During the 6 months, the athlete went through extensive physical therapy for increasing ROM in the knee joint and strength of the knee flexors and extensor musculature while controlling pain and inflammation. The athlete demonstrated improvement in flexibility and overall strength and was cleared to return to PLOF safely.

Implications

Anterior Cruciate Ligament injuries are less common in male sports related activities. This review focused on the injury risks, prevention methods and rehabilitation techniques towards ACL injuries. These studies revealed that anterior cruciate ligament injuries have a greater chance of injury risk two years after having an ACL reconstruction along with the type of graft, i.e trans-tibial technique versus anteromedial portal technique. Along with the neuromuscular and educational interventions, prevention programs such as pre-habilitation strengthening programs along with the application of heat reduces the risk of ACL injuries in male athletes. The next step for research needs to be focused on finding specific injury prevention program along with a standardized warm-up routine. This will assist in reducing anterior cruciate ligament injuries in male athletes.

Conclusion

The course of action is to alter the athlete's treatment and rehabilitation plan through trial and error until he could progress without symptoms according to the best practices indicated by research. This case report has the ability to provide information on treatment plans for other young male athletes with similar conditions and goals.

References

- Sadoghi P, von Keudell A, Vavken P. Effectiveness of anterior cruciate ligament injury prevention training programs. *The Journal of bone and joint surgery. American volume.* May 2 2012;94(9):769-776
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