Diagnosis:
This case highlights the diagnosis and treatment of an athlete suffering from an ACL Tear, MCL sprain, and Posterolateral Capsule tear in College Football Athlete.

Introduction
The posterolateral corner of the knee is a complex injury that can be difficult to diagnose. Although it is often the case that the posterolateral corner can be ruptured, the most common involves impact from car accidents, but can also be caused by an impact on the proximal anteromedial tibia combined with hyperextension and varus forces. This injury is normally combined with damage to other tendons as well. One study used MRRs to look at acute injuries of the knee that presented with hemarthrosis following injury. Of the one hundred and eighty-seven patients who suffered from the posterolateral corner, with the other twenty-six being combined with multiple ligament injuries. Of these patients, only thirty observed to have ligament injuries, only thirty presented posterolateral corner injuries.

Anatomy of the Posterolateral Corner
There are three layers that are considered to make up the posterolateral corner of the knee. These three layers are considered to be slightly variable depending on the individual. The first layer is the superficial layer which consists of the iliotibial band, lateral retinaculum, and brachial fascia. Following this layer, the middle layer includes the vastus lateralis obliquus and the deep fibers of the iliotibial band. A joint capsule in this region connects the wider aspect of the lateral border of the patella with the lateral femoral epicondyle. Posterior-lateral forces are dispersed from the patella in this layer. Going into the deep layer of the posterolateral corner, the collateral ligament is present upon the superficial ilia. The deepest layer also contains the arcuate ligament with the deepest aspect containing the popliteus that attaches to the styloid process of the fibula. More research needs to be conducted to understand why there is a variability in the anatomy of this area. The purpose of the posterolateral corner is to act as a balance point in varus movement and external rotation during flexion and extension.

Deficiency of the different structures of the posterolateral corner will have different effects on the type of symptoms elicited from injury. Lateral cruciate ligament deficiency causes an increase in the angulation of the knee when subjected to varus forces. Deeper structures of the posterolateral corner were shown to cause an increase in external rotation of the knee as well as posterior translation of the tibiofemoral joint with damage present. Surgical reconstructions show significant increased external rotation and posterior translation during the swing phase of the gait cycle (Kang, Ko, Son, Jun, Oh, Kim, Kim, 2018). This shows how patients that undergo strenuous activities like running pose a greater risk of potential injury greater than current injury due to the changes caused by their deficiency.

Surgical Interventions
Several different surgical procedures can be performed regarding posterolateral corner injuries. Surgical intervention often involves single-graft fibula and iliotibial band techniques. In some cases, cadaveric grafts have shown to adequately restore the stability of the knee to varus and rotational forces. A study performed Sanders and Johnson took a look on the effectiveness of the single-graft surgical intervention on knee function post-operation. The cases in this study involved one patient who underwent single-graft surgery for grade one laxity and another who underwent single-graft surgery for grade two laxity (Sanders, Johnson, 2017). This study demonstrated that single-graft methods of posterolateral corner injuries are quite effective in resolving the complications of the initial injury. The single graft surgical procedure may be more effective, as dual-graft techniques often result in disruption of the popliteus and popliteus tendon causing an asymmetric knee hyperextension. Regarding complications of surgery, one study found that complications were reported in seven and three-tenths percent of posterolateral corner reconstructions performed using the single graft technique (Petillo, Vojci, Papalia, Maffulli, Denard, 2017).

The patients who have undergone posterolateral reconstructions can result in gait abnormalities that may gradually result in the degeneration of the medial cartilage of the knee. Surgical repairs for this injury can involve single-graft or double-graft techniques, with single graft techniques resulting in statistically better outcomes. With proper post-operation rehabilitation, return to regular activity can take between six months to a year.

Images of a dual graft

References
3. Kang, U., Son, Y., Jun, Oh, Kim, Kim, (2018). Anatomical basis of and surgical intervention on knee function post-operation. The cases in this study involved one patient who underwent single-graft surgery for grade one laxity and another who underwent single-graft surgery for grade two laxity (Sanders, Johnson, 2017). This study demonstrated that single-graft methods of posterolateral corner injuries are quite effective in resolving the complications of the initial injury. The single graft surgical procedure may be more effective, as dual-graft techniques often result in disruption of the popliteus and popliteus tendon causing an asymmetric knee hyperextension. Regarding complications of surgery, one study found that complications were reported in seven and three-tenths percent of posterolateral corner reconstructions performed using the single graft technique (Petillo, Vojci, Papalia, Maffulli, Denard, 2017).

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