Aberrant Anatomy of the Lateral Knee in Posterolateral Corner Reconstruction

Ajay Chakravarthy Kanakamedala, Massimo Petrera, Dylan T Lowe, Michael J Alaia[1]
[1]NYU Langone Orthopedic Center

Background
Although most multi-ligament knee injuries (MLKIs) are associated with anterior cruciate ligament (ACL) or posterior cruciate ligament injuries, approximately 7% to 16% of MLKIs involve the posterolateral corner (PLC). An important component of PLC reconstruction of the knee is identifying and protecting the common peroneal nerve and, in some patients, more extensive neurolysis. Although the anatomy of the lateral aspect of the knee has been well described, rare anatomic variants may be encountered. Surgeons must be aware of these anatomic variants to prevent iatrogenic peroneal nerve injuries.

Purpose
This video demonstrates aberrant lateral knee anatomy encountered during PLC reconstruction of the knee.

Methods
The anatomy of, pathogenesis of, imaging of, and treatment options for PLC injuries are reviewed. The case presentation of a 37-year-old woman with bilateral MLKIs, including left ACL and PLC injuries, is reviewed. These injuries occurred after the patient was struck by a motor vehicle. After a thorough discussion of the risks, advantages, and prognosis, the patient elected to proceed with bilateral staged multiligament knee reconstruction to improve her functional status. The patient underwent right ACL, posterior cruciate ligament, and PLC reconstruction 3.5 weeks postinjury and left knee ACL and PLC reconstruction 3.5 months after right knee surgery.

Results
On preoperative imaging studies, an accessory muscle overlying the common peroneal nerve was noted at the level of the knee bilaterally. This muscle was distinct from the long head of the biceps femoris muscle and the lateral gastrocnemius. During PLC reconstruction of the left knee, this accessory muscle was identified. The patient underwent ACL and PLC reconstruction without any complications. At 7 months postoperatively, the patient was doing well and had no complaints regarding the left knee but had mild pain and stiffness in the right knee related to initial cartilage and meniscus injuries.

Conclusion
Anatomic variants may be encountered during PLC reconstruction of the knee. Given that the location of the common peroneal nerve often is altered as a result of the MLKI, preoperative identification of the location and course of the common peroneal nerve on MRIs should be a routine aspect of the preoperative planning process. This is an important step to prevent iatrogenic peroneal nerve injuries.