

## **Double-Bundle PCL Reconstruction and Medial Meniscus Root Repair with Centralization**

Caroline Vonck, Dylan T Lowe, Michael J Alaia

### **Background:**

The identification and surgical management of posterior cruciate ligament (PCL) tears is increasing. PCL tears with high-grade posterior laxity are associated with functionally-limiting instability and pain. Both PCL and medial meniscus insufficiency can lead to progressive chondral damage and arthritis in the medial compartment. Symptomatic PCL tears can be treated with PCL repair, single-bundle reconstruction, or double-bundle reconstruction. Meniscus root tears can be treated with partial meniscectomy or meniscal root repair, with or without centralization.

### **Purpose:**

This video overview and case presentation demonstrate a double-bundle PCL reconstruction and medial meniscus posterior horn root repair with centralization.

### **Methods:**

The relevant anatomy, function, diagnosis, and treatment options are reviewed for PCL tears and medial meniscus root tears. The case of a 25-year-old female with a complete PCL tear with high-grade posterior laxity and medial meniscus posterior horn root tear with extrusion is presented. The injury occurred from a fall off of a bike, and she continued to be persistently symptomatic despite a trial of nonoperative management. After a thorough discussion of risks, benefits, alternatives, and prognosis, the patient elected to proceed with a double-bundle PCL reconstruction and medial meniscus root repair with centralization to improve knee stability and functional status. A video of the surgical technique is included.

### **Results:**

Intraoperatively, posterior stability of the knee was restored with excellent position, fixation, and tension of the two grafts. After meniscal root repair with centralization, the meniscus was appropriately reduced with considerable improvement in extrusion. At three months postoperatively, the patient was pain-free. The knee had normal range of motion with grade 1 posterior drawer with a firm endpoint.

### **Conclusion:**

Double-bundle PCL reconstruction and medial meniscus root repair with centralization is a viable surgical option for patients with concomitant PCL and medial meniscus root tears. This treatment results in restoration of posterior stability of the knee and preservation of the medial compartment in the setting of this combined pathology. Double-bundle PCL reconstruction results in similar subjective outcomes but improved objective measures of stability compared to single-bundle reconstruction. Centralization improves meniscal extrusion in the setting of a root tear. Adherence to postoperative rehabilitation protocols is critical for optimal outcomes.