

Arthroscopic Posterior Cruciate Ligament Reconstruction Using The Posterior Trans-Septal Portal

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With the recent improvement in arthroscopic techniques, posterior cruciate ligament (PCL) reconstruction has become more popular. It is difficult to visualize the tibial attachment of PCL with the conventional arthroscopic PCL reconstruction. A poor visualization of tibial attachment could lead to a mal-positioning of the tibial tunnel, which seems to be one of the most common causes of PCL reconstruction failure.

In most PCL-insufficient knees, the PCL and menisiofemoral ligament are partially retained after the injury. In general, for an easier passage of the graft, both the remnant bundle of the PCL and menisiofemoral ligaments are debrided during the reconstruction. However, we believe that preserving these structures could significantly contribute to the posterior stability of the joint and promote healing of the graft.

The purpose of this presentation demonstrates an arthroscopic technique for the PCL reconstruction with preserving the remnant of the original PCL and menisco-femoral ligament, using the posterior trans-septal portal. The posterior trans-septal portal provides an excellent visualization of the PCL tibial attachment and an easy access to the tibial tunnel without injuring any neurovascular structure. During arthroscopic trans-tibial PCL reconstruction, popliteal vessel injury is the most serious complication, and it rarely occurs. We performed a cadaveric angiographic study on ten fresh-frozen cadaveric knees to evaluate the distance change between posterior cruciate ligament and the neurovascular bundle by limited release of the posterior capsule during arthroscopic PCL using posterior trans-septal portal. The results of this study showed a significant increase in the distance from the popliteal artery to the PCL through arthroscopic posterior capsular release during arthroscopic trans-tibial PCL reconstruction.

The trans-septal portal provides an excellent visualization of the PCL tibial attachment, as well as an easy access to the tibial tunnel without injuring any neurovascular structures.