

Peroneus Longus Graft Harvest: A Technique Video

Mukesh Kalra¹, LOKESH RAGHAV, Angad Abrol

¹Lady Hardinge Medical College New Delhi -2

Introduction:

Multiple graft options are available for various knee ligamentous surgeries, ranging from hamstring tendon, bonepatellar tendon-bone and quadriceps tendon. These knee-based autografts each carry their own potential disadvantages like hamstring pain, anterior knee pain, and imbalance between quadriceps-hamstring muscle groups. A more recent entrant in the graft portfolio is the peroneus longus autograft. Multiple studies have shown that this graft is both a safe and effective option for ligamentous surgeries. Despite, the recent interest in the graft there is no dedicated technical video available on the graft harvest. We describe our technique for peroneus longus graft harvest.

Technique:

Patient Positioning

We perform this surgical procedure with the patient in a supine position under spinal anaesthesia. A non-sterile padded tourniquet is placed at the mid-thigh level on the operative limb and the operative limb is prepared and draped in the standard fashion.

Anatomical Landmarks

The key anatomical landmark to identify for this surgical procedure is the lateral malleolus. We identify and draw the tip of the lateral malleolus and the posterior border of the fibula. The peroneal tendons run just posterior to the posterior border of the fibula towards the tip of the fibula

Skin Incision Placement

We mark our skin incision 2–3 cm proximal to the tip of the lateral malleolus and 1 cm posterior to the posterior border of the fibula. We keep the foot in inversion for easy access as this puts the peronei on stretch making them readily palpable and also brings them superficial for ease of harvesting. Superficial dissection through the skin and the subcutaneous tissue is carried out.

Deep Dissection

Once the peroneal tendons are palpated, the fascia over the tendons are dissected using artery forceps and scissors. The beauty of the peronei is that minimal dissection brings the tendons on show. The important point to remember is that the superficial tendon is of peroneus longus and the deep tendon is of peroneus brevis.

Graft Harvesting and Tenodesis

Put an artery forcep beneath the peroneus longus tendon. This separates the tendons of peroneus longus and peroneus brevis. We now take running whipstitch using Ethibond suture through the peroneus longus tendon. Usually 3–4 throws are adequate to prevent pullout during harvest. By putting an artery forcep beneath peroneus brevis, both peronei tendon are delivered out of skin. Stitch is used to perform a tenodesis of the PL and PB tendons with either absorbable suture or can be done by fiberwire. We usually take three running sutures. Tenodesis is done 1 cm distal to tendon whipstitch sutures. Whether to take a tenodesis or not is still debatable, however, we have found there is slightly better eversion strength when the PL is tenodesed rather than left free. We avoid coarser Ethibond suture for this purpose as found it has ability to cause serous discharge, wound infection. The peroneus longus tendon is then cut between the tenodesis knot and the whipstitch using scalpel blade. The free tendon is pulled out of the wound to check the mobility which ensures adequate release. If adequate mobility is not there, release the tendon by an artery forcep. The artery forcep is pushed in closed between the tendon and the subcutaneous tissue and then opened as it is withdrawn. This will create a space for the tendon stripper to harvest. The Ethibond sutures are now grasped through the hole of the closed tendon stripper. Strip the tendon proximally with the help of the closed tendon stripper and cut the graft. The peroneus tendon autograft is now successfully harvested. This typically yields a graft with a minimal 7.5 mm diameter in most patients and a minimal 200–220 mm length in most patients. Minimal muscle is present on the tendon making preparation smooth. It should be noted that while inserting the tendon stripper for the harvest, it should stop 5 cm below the fibula head level to avoid injury to the deep peroneal nerve and it should also be kept superficial and parallel to the fibula to avoid injury to the superficial peroneal nerve.

Closure:

Once the procedure is completed, the wound is washed and the subcutaneous tissue is closed with 1–2 inverted sutures with No. 3–0 Vicryl and skin is closed with vertical mattress sutures with 3–0 Ethilon or skin staplers. The harvested tendon is prepared on the tendon table. Total surgical time for the procedure is typically 5–10 min.