

ARTHROSCOPIC ANTERIOR CRUCIATE LIGAMENT RECONSTRUCTION

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KNEE ARTHROSCOPY:

Arthroscopic surgery of the knee is a minimally invasive procedure allowing visualization and treatment of many problems inside your knee joint. The procedure is performed as an outpatient, which means you are able to go home after the surgery. Anesthesia for ACL reconstruction is a combination of general anesthesia (being put to sleep) and local anesthesia with a femoral nerve block. The nerve block will numb your leg for pain control after surgery and can last up to 16 hours.

Two incisions measuring less than 1cm each are made on the front of your knee on each side of your kneecap. A small camera is inserted through one incision, and tools are used through the other. The knee is filled with fluid to allow movement and visibility within the joint. The entire interior of the knee is visualized and evaluated for problems at the beginning of the procedure. For ACL reconstruction two additional small incisions are required for graft passage and fixation.

Once the surgery is complete, the knee is drained of all the fluid. Dressings, a thigh-high stocking, and a cooling device (cryocuff) will be placed on your leg. The leg is then secured in a hinged knee brace locked in extension. The surgical procedure takes about 1 ½ to 2 hours. You will then require 1 ½ to 2 hours in the recovery room prior to being released home.

THE ANTERIOR CRUCIATE LIGAMENT (ACL):

The ACL is one of a pair of crossed ligament in the center of the knee. It is critical for knee stability, providing support for forward and twisting motion of the joint. Without the ACL knee motion is abnormal, and this instability can lead to early arthritis and recurrent meniscal tears. ACL injuries typically occur with a twisting, non-contact injury. Usually the patient feels a pop and has subsequent pain and swelling. Physical examination of the knee usually provides the diagnosis, but an MRI is routinely performed to confirm the tear and rule out other injuries.

Reconstruction of the ACL involves removing the torn remnants, creating tunnels in the tibia (shin bone) and femur (thigh bone), passing the graft across the joint, and securing the graft in the tunnels. The graft is secured using a combination of a bioabsorbable pin and a screw. Occasionally a bone staple is required for additional support.

GRAFT SELECTION:

The ACL reconstruction graft can be acquired from a cadaver (allograft) or the patient's own tissue (autograft).

Using allograft tissue avoids removal of normal tissue from the patient's body. This allows for shorter surgical time, less postoperative pain, and typically a faster early rehabilitation. Allograft tissue is harvested in a sterile environment, cleaned with multiple antibiotic washes, subjected to extensive tests and cultures, and finally treated with radiation. The risk of transmission of disease (eg. Hepatitis, HIV) is estimated at 1

in 1.5 million, but using this cleaning process there have been no documented infections. If you choose an allograft it will be a soft tissue tendon from the ankle and foot (tibialis anterior tendon, tibialis posterior tendon)

Using autograft tissue avoids the risk of disease transmission. It is also thought that autograft tissue heals to the bone slightly faster than allograft. There is typically more pain after this surgery due to the trauma of harvesting the graft. I use the hamstring tendons from the inner part of your knee as my autograft choice.

Long term outcomes of surgery using allograft vs. autograft are essentially equal.

AFTER SURGERY:

Before you wake up from surgery a stocking is placed on your knee to control swelling and hold the dressing in place. A crocuff and a hinged knee brace locked in extension are also applied. Before surgery, arrangements are made to have a continuous passive range of motion (CPM) machine at your house. You will begin using this immediately after surgery. It should be set at 0-40 degrees of flexion and advanced 10 degrees per day. You should use your CPM 3 times per day, 2 hours at a time. The brace can be removed (or the hinges opened) during use of the CPM to allow for flexion. When 100 degrees of flexion can be maintained easily, use of the CPM can be discontinued.

Most patients will have soreness and swelling in their knee after surgery. This is controlled with pain pills and ice. Pain should begin to improve after the first 48 hours. The cryocuff should be used continuously for 48 hours after the surgery, and then as needed for swelling. Most patients also find the cryocuff useful during the rehab period to combat swelling after physical therapy sessions.

A pain medication like Norco, Vicodin, or Darvocet will be prescribed prior to surgery. This is typically required for the early postoperative pain. When taking these medications you should also take Colace (Docusate) as a stool softener to prevent constipation. Colace can be found at the pharmacy and does not require a prescription. You can switch to Tylenol or Motrin as soon as your pain allows.

Crutches will be provided in the recovery room. If a meniscal repair was performed you cannot put weight on the surgical leg for 4 weeks. Patients without a meniscal repair can put weight on the leg **with the brace locked in extension** unless otherwise ordered. Bending the knee is encouraged, but rigorous use of the leg should be avoided until your follow-up appointment. Usually you will be sent home with thigh stockings on both legs. These are used to decrease swelling and decrease the chance of blood clots. The stocking can be removed from the non-surgical leg at any time.

A follow up appointment will be scheduled about 5 days after surgery in order to check your incisions. The dressing and sutures will be removed in the office at that time, and we will review pictures from your surgery. You will be allowed to shower after the first appointment. In order to avoid infection, do not submerge your incisions in a bath, pool, or tub until they have healed completely. This usually takes 2-3 weeks.

Physical therapy will be initiated about 1 week after surgery and will run for 4-6 months. The therapist will initially work on swelling reduction and knee range of motion. This will be followed by strengthening from months 1 to 3. Agility activities are initiated at about 4 months. Return to full sports participation is expected about 9 months after your surgery.