Distal Tibia Allograft

Recurrent shoulder instability and bone loss from the shoulder socket? This is a tough combination, but fortunately, a distal tibia allograft surgery can improve shoulder stability. Here's how.

"This graft may help prevent arthritis and provide a more normal shape to the shoulder socket."

If you have ever dislocated your shoulder, there is a good chance it can happen again. With multiple dislocations, your shoulder can become looser over time and tend to come out of place. Repeated dislocations can also damage the bone of the shoulder socket.

For some people with severe shoulder instability and bone loss from the shoulder socket, a surgery called a distal tibia allograft, which uses cadaver bone and cartilage, is the best treatment option. This surgery works well for people who have lost too much bone to have a Latarjet procedure (coracoid transfer procedure). It is also suitable for those who have had Latarjet surgery that has not improved their symptoms.

Why treatment is required

This surgery brings new bone to the shoulder socket and also helps rebuild the lost or damaged cartilage (the shiny white covering of the joint). This helps prevent arthritis and provides a more normal shape to the shoulder socket.

How treatment is performed

The distal tibia allograft starts the same way as the Latarjet procedure—a cut is made from the front of the shoulder down toward the armpit. Unlike in the Latarjet procedure, however, the hook-shaped piece of the shoulder blade, called the coracoid process, is left alone. Instead, the bone that is used to repair the shoulder socket comes from the distal tibia (the far end of the shin bone) of a cadaver. (Cadavers are human bodies that have been donated for medical purposes, and allograft means that the graft comes from another body, not your own.) This distal tibia is used because its shape is similar to that of the normal glenoid (shoulder) socket.

After the cut is made, the muscles and tendons that cover the front of the shoulder are gently moved aside to get access to the joint.

Next, the piece of bone that will be used to repair the shoulder socket (bone graft) is carefully harvested from the allograft bone. Normally, about 2 cm x 1 cm x 1.5 cm of bone graft is needed. The graft is attached to the shoulder socket with two screws and, occasionally, a tiny metal (titanium) plate. The procedure is performed as a same-day surgery in an ambulatory surgery center, which means patients can go home afterward.

Risks and benefits

Risks of this procedure include:

- Problems with the hardware (plates, screws)
- Postoperative pain
- Inability to return to previous activities
- Recurring shoulder instability

The majority of people who undergo this surgery do not have complications. The complication rate for a distal tibia allograft procedure is significantly lower than that of a Latarjet procedure. The more damage to your shoulder, however, the more likely complications become. People who have had a previous shoulder surgery will generally have a higher risk of complications than those who have never had shoulder surgery.

Physical therapy protocols

After the procedure, Dr. Romeo and his team will inform you of how the surgery went and review your postoperative plan, including your physical therapy instructions and your next appointment.

Pain control

A regional nerve block is administered using 20–40 mL of local anesthetic to "freeze" the area being operated on. The nerve block is long-lasting and works for approximately 12–18 hours after surgery. The anesthesiologist uses ultrasound guidance for the safe and effective placement of the medication for the nerve block.

As the nerve block gradually wears off, oral pain medications (pills or tablets) may be used to manage any discomfort. Dr. Romeo uses a variety of pain-control methods (multimodal analgesia), such as Tylenol Extra Strength (acetaminophen) and non-steroidal anti-inflammatory drugs such as Naprosyn (naproxen) or Mobic (meloxicam). Cold therapy or ice at the surgical site also helps reduce swelling, pain, and the need for medications. Dr. Romeo recommends using ice or cold therapy three to four times a day for 20 minutes.

Dr. Romeo provides each patient with specific instructions to manage any post-op pain, including enhanced recovery after surgery (ERAS) protocols. Dr. Romeo has managed thousands of surgeries and has detailed pain management plans for all of his patients. He is also committed to managing their pain responsibly to minimize the risk of opioid addiction.

Recovery time

Following surgery, you will wear a shoulder brace to protect your surgical repair. Pendulum exercises and unrestricted range of motion to the elbow, wrist, and fingers are allowed within the first three to seven days as the pain begins to subside.

One month after surgery, you can begin shoulder range of motion with up to 90° of elevation and external rotation as tolerated. Depending on the results of the x-rays, you can begin full active motion at six weeks. Strengthening movements begin three months after surgery, and you can expect to return to unrestricted activities within six months of the surgery.

"Full recovery generally means a return to activities without restrictions by six to nine months after surgery."

Results

The results of this surgery are typically excellent: Most people will have a much more stable joint and few complications. Studies show that when proper care and technique are used to place the bone graft, the injured shoulder joint incorporates the bone graft into the patient's own bone. This creates a much more stable and functional shoulder.

Recent studies in biomechanics have shown that using a cadaveric bone graft can heal the shoulder joint almost back to its pre-injury state.

FAQs

I'm an athlete. Will I get my full range of motion back after surgery?

Like most instability surgeries, it is common to lose a few degrees of motion with the distal tibia allograft. But for most sports, this procedure is well-tolerated and does not affect the shoulder function of recreational and high-level athletes. One exception is that this slight loss of motion may limit the throwing arm of a baseball player.

Why don't more doctors recommend this surgery when my unstable shoulder also has significant bone loss?

While many doctors have some experience in arthroscopic repairs of the shoulder, fewer surgeons have experience with bone grafting and therefore they tend to not recommend the operation.

Want to learn more? Find relevant videos, animations, and research material related to this procedure at **anthonyromeomd.com**. ➔

For more information about the distal tibia allograft procedure, please request an appointment with experienced Chicago orthopaedic surgeon Dr. Anthony Romeo.

Please visit our website to find out how to schedule your appointment.