

Athletes undergoing tissue transplant surgery for knee damage have bright future

July 19 2010

Athletes with bone and cartilage knee damage who are treated with transplanted tissue can return to sports after surgery, according to a study reported at the annual meeting of the American Orthopaedic Society for Sports Medicine, held July 15-18 in Providence, R.I. The study (abstract 8970) overturns the widely held belief that patients who undergo this surgery do not return to athletics.

"This is the first study to show that people who undergo osteochondral allograft transplantation can return to sports," said Riley Williams, III, M.D., director of the Institute for Cartilage Repair at Hospital for Special Surgery (HSS) who led the study. "Most doctors have thought that by the time you get to this transplant surgery as an option, the expectation is that the patient is just going to be able to walk around and not do sports, and that is how most doctors counsel patients. Based on the data in this study, physicians can expect athletic patients treated with this option to return to sports." According to the study, 84% of patients undergoing the surgery can return to some level of athletic activity and 60% can return to high level sports.

Osteochondral defects, damaged chunks of bone or cartilage in the knee, can be caused by a traumatic sports injury, such as a direct blow to the knee, or by a congenital [bone disease](#) called Osteochondritis Dissecans which can cause the bone to crumble. People with the congenital condition have abnormal bone in the knee and after a couple of decades of running on this injury, the cartilage that overlies the abnormal bone collapses. The chunks of bone and cartilage damaged can be as big as 15

to 30 millimeters in size, according to Dr. Williams. People with these defects experience pain and their knee may lock.

Surgeons can treat patients with this knee damage by transplanting fresh bone and cartilage into the injured area. They create a circular hole, take the damaged bone and cartilage out, and insert the transplanted tissue. "It's just like a broken bone. It heals," said Dr. Williams, a full-time member of the [Sports Medicine](#) & Shoulder Service at HSS. Doctors obtain the fresh tissue from tissue banks at places such as the Musculoskeletal Transplant Foundation. The surgery is done as an outpatient procedure, the patient goes home on crutches, and recovery takes about three to six months.

Prior to this study, doctors knew the surgery was often successful, but did not think that athletes would be able to return to sports. To find out if this was true, investigators mined data from a registry of patients with the condition at HSS. They included patients seen between 2000 and 2008 who had at least one year of followup. Patients had to be younger than 50 and participate in athletics three days per week prior to their injury. They could not have any concurrent procedures such as an ACL reconstruction or meniscal repair.

Questionnaires that evaluated physical activity were administered prior to surgery and at followup intervals. Twenty-five patients met the eligibility criteria and were available for followup evaluation. With an average followup of a little over four years, 15 patients (60%) said they had returned to athletics and 6 (24%) reported limited athletic participation. The average Tegner questionnaire score at followup was 4.6, which is equivalent to the ability to do cycling and light jogging.

"Of the 25 patients, only three could do sports immediately before surgery," Dr. Williams said. "By the end of the study, all those patients could do at least light jogging and cycling according to the Tegner score

and could do things including tennis, squash and golf."

The new study disproves the notion that the [transplant surgery](#) is only a salvage procedure. "Doctors typically did not expect that patients would get back to sports or high level activity after this surgery," Dr. Williams said. "If patients have had a reasonable experience with sports prior to having this surgery, then the overwhelming majority of the patients can get back to sports."

Provided by Hospital for Special Surgery

Citation: Athletes undergoing tissue transplant surgery for knee damage have bright future (2010, July 19) retrieved 24 April 2024 from <https://medicalxpress.com/news/2010-07-athletes-tissue-transplant-surgery-knee.html>

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