Device and method for tibial plateau allografting with or without attached meniscus

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Technology description

Device and Technique for Tibial Plateau Allografting with or without Attached Meniscus This invention developed by researchers at the University of Missouri is a unique surgical instrumentation system that allows for standardized preparation of a tibial allograft from donor tissue with precisely matched preparation of the patient’ s proximal tibia to receive a meniscal-tibial plateau allograft. This technology has the potential to revolutionize knee surgery by allowing for biological joint replacement of this difficult-to-treat region of the knee, increasing the use of organ donor tissue, and improving outcomes for patients with this common knee problem. Currently, patients with extensive damage to their tibial articular cartilage and/or meniscus in the knee have few treatment options that allow them to return to highly functional activities. Current standard-of-care allograft cartilage and meniscus transplantation techniques do not address these types of extensive injuries due to limitations in surgical site access, effective instrumentation, and stabilization of viable and functional tissues. Complications arising from graft functionality, placement, and fixation to the tibia as well as functionality of the underlying tibial cartilage also inhibit success of current methods. Total and partial joint replacements using synthetic materials also do not allow return to these activities and have a limited functional lifespan. Younger, active patients want better options as surgeons search for biological treatments that consistently provide these patients with more optimal outcomes. This University of Missouri technological advancement has the potential to address all of these limitations.

Application area

-Human orthopaedic surgery
-Veterinary medicine
-orthopaedic surgery

Advantages

-Patient-specific alignment and placement of meniscal
-tibial plateau allografts (with or without an attached meniscus)

-Return to high degree of knee functionality
-Long functional lifespan -potentially for lifespan of patient
-Less invasive than total knee replacement

Institution

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