Docket #: S25-569

Orthopedic Surgical Instrumentation for Joint Replacement

Over 1.3 million hip and knee replacements are performed in the US annually. Current jigs and workflow used in joint replacement surgery require completion of a bone cut, removal of the cut piece of bone before using that cut, and ligament tension to guide the cut on the opposite side of the joint. Completing the cut and removing the bone can be difficult to achieve, particularly if the joint is very arthritic.

Dr. Nicholas Giori at Stanford has developed a tool that makes ligament-directed bone cuts easier to achieve during joint replacement surgery. First, a partial cut in the bone with an orthopedic saw is made. Then, the invention is inserted into the partial cut to act as an anchor to guide a bone cut on the opposite side of the joint. The method allows the joint and supporting ligaments to remain intact, as cuts on both sides of the joint are planned and eventually completed. The native joint anatomy and ligaments help to align the cuts so that when the cuts are completed and the joint is removed, the prosthetic joint replacement fits perfectly into the gap between the bones with desired soft tissue and ligament tension. The invention is a simple tool to improve the surgical workflow for joint replacements.

Stage of Development
Lab prototype

Applications

- Knee replacement surgery
- Orthopedic surgery
- Joint replacement surgery
- Bone implants

Advantages

- Workflow improvement for joint replacement
- Increased surgical safety and efficiency

Innovators

- Nicholas Giori

Licensing Contact

Seth Rodgers

Licensing Manager, Life Sciences

Email