Novel Technique For Suturing Tissue-Engineered Collagen Graft Improves Tendon Repair

The repair of ruptured tendons often requires the use of a graft to bridge gaps between the torn tendon and bone. A tissue-engineered collagen graft can reduce the complications associated with other types of tendon grafts, but it may not be able to support full load bearing until integrated into the surrounding tissue. A new suture technique designed to support this tissue-engineered tendon is described in BioResearch Open Access, a peer-reviewed journal from Mary Ann Liebert, Inc., publishers. The article is available free on the BioResearch Open Access website.

The article "Development of a Surgically Optimized Graft Insertion Suture Technique to Accommodate a Tissue-Engineered Tendon In Vivo" presents an innovative interlocking suture technique that distributes suture tension away from the cut end of the injured tendon provides adequate mechanical strength to allow for weight bearing as healing progresses.

Coauthors Prasad Sawadkar et al., University College London and University of Manchester, UK, describe the suture technique and present the results of mechanical stress tests and image analysis of tendons repaired using either standard graft insertion methods or their novel suture technique. "We now have ex vivo proof of concept that this suture technique is suitable for testing in vivo, and this will be the next stage of our research," state the authors.

"Advances in tendon repair and bioengineering are essential for improved management and outcomes of tendon injuries," says BioResearch Open Access Editor Jane Taylor, PhD, MRC Centre for Regenerative Medicine, University of Edinburgh, Scotland. "This article shows exciting 'proof of concept' ex vivo data, which will be useful for improving current tendon repair techniques."

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