Tissue Engineering in the Treatment of Massive Rotator Cuff Tea

Large, full-thickness tears of the rotator cuff can be very challenging for patient and surgeons alike. Loss of motion ar of strength leads to loss of function for the patient. Finding a way to repair the problem without re-tears and surgical f is a goal surgeons strive for.

In this report, the successful use of a regenerative tissue matrix for 24 patients with massive irreparable rotator cuff tea described. You may be wondering what is a regenerative tissue matrix. This is the use of donor tissue used as a scaffo help the repair along. It is used when the torn tendon has retracted (pulled back) so far from the bone that it cannot be stretched back and stitched back down.

By placing graft tissue between the end of the torn tendon and the shoulder bone, the surgeon is able to make a "bridg complete the repair. With this donor tissue in place, collagen fibers and blood vessels form to assist healing at the cell level.

In fact, if the results of these 24 patients are any indication, this technique is safe and effective without infection or tis rejection. Patients who previously would not have been candidates for surgery and therefore unable to regain shoulder motion, strength, and function suddenly have a new opportunity for repair and recovery.

There are some "yes, buts" to consider -- meaning not everyone with an inoperable, irreparable rotator cuff tear can ha this procedure. The patients in this study were selected very carefully for success. They did not have any shoulder arth The tendon tear had not filled in with fat tissue. And for the most part, they still had fairly good active range of motion despite the rotator cuff damage.

The use of human dermal allograft (skin harvested from a donor) in this study is not approved by the Food and Drug Administration (FDA) for use as an augmentation procedure of this type. The surgical technique presented in this stud therefore considered "off label."

Even so, the technique was successful with good results. Three-fourths of the group had a fully intact repair as shown ultrasound studies. The rest of the patients had at least a partially repaired rotator cuff. There was no one in the group ended up with a complete tear after this procedure.

Everyone was satisfied with their results and said they would do it again if given a second chance. They all reported le pain, more motion, and better overall function. Follow-up was extended over a period of time from 29 to 40 months (t three and a quarter years).

The authors concluded that the use of extracellular matrix scaffolds in the repair of massive rotator cuff tears is new a experimental. But this approach offers hope to those who previously had no opportunity for surgical repair. The succe results of this small study may open doors for future studies to expand the number and types of patients who might be from this procedure.

For surgeons, this mini-open technique is less technically challenging and easier to use. It gives the surgeon a clear vie the area while implanting and suturing the graft. And it can be done without cutting the large deltoid muscle, which he patients recover faster. Specific details of the surgery are provided including intraoperative and arthroscopic photos to the placement and suturing of the graft.

Reference: Anil K. Gupta, MD, MBA, et al. Dermal Tissue Allograft for the Repair of Massive Irreparable Rotator Cu Tears. In The American Journal of Sports Medicine. January 2012. Vol. 40. No. 1. Pp. 141-147.