

BroadcastMed | Bolstering the Damaged Rotator Cuff Through Bioinductive Tissue Grafting

The patient that we're discussing today had rotator cuff disease, partial thickness tearing, and tendinopathy, or wear and tear of the rotator cuff tissue.

Had been through non-surgical treatment, including physical therapy, and at some point an injection of anti-inflammatories.

And all that had failed him.

And it turned out his tissue quality was degenerative.

And he had some partial tearing of the tendon.

So we offered him a new technology, which is a spin on old technology, of tissue grafting overlying the rotator cuff tendon with a newer method of delivery and xenograft tissue.

Which is, in this case, bovine or cow Achilles tendon that's been purified and sterilized for this purpose.

So the tissue is meant to augment or thicken the rotator cuff and to promote inside a healing response.

In recent years, there's been data on this particular technique that suggests that you can thicken the rotator cuff tendon by a couple millimeters and reduce their pain and improve their function.

With the procedure that he had completed, we had agreed in advance that we were going to potentially do this technique.

And in the course of surgery as we cleaned up the shoulder, we recognized that the rotator cuff had some inflammation, but otherwise was pretty much as expected.

So it had degenerative quality tissue, partial thickness tearing, and within the substance of the tissue itself the tendon was starting to show degenerative disease, which was consistent with his age.

And so we elected to perform the procedure in using this tissue form that has a insertion device that enables us to actually arthroscopically through a portal, or a small incision, insert the material into the joint after the rotator cuff's been debrided or cleaned up, lie it on top of the tissue, and then anchor it in place.

So the technology actually is coupled with a fixation system made of absorbable materials that are essentially staples that are inserted through the portals to spot weld the tissue in place over the diseased portion of the tendon after it's been treated and cleaned.

And then on the far side, the lateral side of the tissue, there are plastic anchors that actually reinforce the tissue

fixation to bone.

So it gives a very robust fixation to the rotator cuff.

And as the tissue is placed in position with fluid and with bleeding, it actually almost adheres to the surrounding rotator cuff.

So it gets a really nice apposition to the tendon.

And over time, the data would show histologic and follow up data, that you can actually thicken and improve the quality of the rotator cuff with the promise and the theory that over time it's less likely that he's going to degenerate and wear out to a full thickness tear.

Or at least, have a longer lifespan for his native tissue.

So the course of the procedure, the patches come standard in various sizes.

So there's essentially a smaller patch and a larger patch.

So that depends on the size of the patient themselves, but also the degree of tissue that you're trying to cover.

The point is to get the corners and get the tissue secure to native tissue so that with range of motion, both passive and even some active range of motion it's stable.

And it's really a temporary fixation until the body starts to adhere the graft tissue to their native rotator cuff.

And so I try to get as many as I can comfortably do without too many staples in the tissue, where you could potentially tear it.

But essentially, you want the edges and the corners.

And then on the lateral side of the graft, where the graft overlies bone is where you get the bone staple fixation.

So in the course of implantation, it's secured with absorbable staples, which are deployed with a handheld device.

And then the bone fixation has to be a stronger implant.

So that's a peak, or a plastic staple that it's inserted actually into bone with a prepared channel placed.

And that, essentially, welds the graft to the surrounding tissue.

And then it's a biologic process of healing and remodeling of tissue.

So essentially, it becomes a scaffold for native tissue to fill in and heal.

Much of it's probably scar tissue, but it actually enhances and strengthens the native rotator cuff.

So some of the data and some of the surgeons are very rapidly restoring patients to motion and activity with their shoulders.

For me, I'm waiting to see how they do.

And so in his case, I'm treating him essentially as a rotator cuff tear.

So he'll be in a sling with limited motion, passive motion, for a couple of weeks.

And then we'll initiate a more active range of motion protocol with him.