

Rotator Cuff Repair

A case study by Charles DePaolo, MD, PA and John Burton, SA, Asheville, NC

CASE STUDY: CHRONIC FULL THICKNESS ROTATOR CUFF REPAIR WITH ORTHADAPT® BIOIMPLANT INFORCEMENT

The OrthADAPT® Bioimplant from Synovis Orthopedic & Woundcare, Inc. is a highly organized collagen scaffold that can be used for implantation to reinforce the repair or reconstruction of soft tissues. The collagen scaffold is flexibly crosslinked and sterilized* using proprietary technologies that make it resistant to premature enzyme degradation, biocompatible and safe. The OrthADAPT® Bioimplant allows for a stronger repair over time and the potential for minimal pain and swelling.

ABSTRACT

A 68 year old male with a chronic full thickness rotator cuff tear underwent corrective surgery. After completion of the primary repair using suture anchors, the repair was reinforced using a 3cm x 3cm OrthADAPT® Bioimplant. The bioimplant was trimmed to an oval shape and secured over the repair site under circumferential tension. The patient experienced an early return to function and at 18 months post-op is very satisfied and continues to do well.

PATIENT HISTORY

A right hand dominant male patient presented with extensive right shoulder pain and dysfunction. Conservative measures (non-steroidal anti-inflammatory medication and physical therapy) failed to relieve pain. An MRI revealed a full thickness tear of the supraspinatus tendon. Fluid was noted in the subacromial/subdeltoid bursa. No significant muscle atrophy was noted. The pre-operative Constant Shoulder Score (CSS) for this patient was 50 with a functional score of 15 and pain score of 5. The patient elected to proceed with rotator cuff repair surgery.

PROCEDURE

The patient was placed in the beach chair position and given general anesthesia along with a continuous scalene block. Preoperative antibiotics were administered and the shoulder was prepped using standard sterile technique. Using an anterolateral approach a dissection was performed down to the deltoid muscle. The deltoid was resected and elevated off the acromion using electrocautery. A bursectomy, acromioplasty, and clavicle resection were performed revealing a full thickness rotator cuff tear involving the supraspinatus tendon.

An elevator was used to mobilize the rotator cuff and a traction stitch placed in the supraspinatus was used to approximate the tendon past the articular margin to the insertion site. The tear was debrided of necrotic tissue and the insertion site (footprint) was lightly decorticated. Primary repair was performed using two Corkscrew™ 6.5mm Suture Anchors loaded with #2

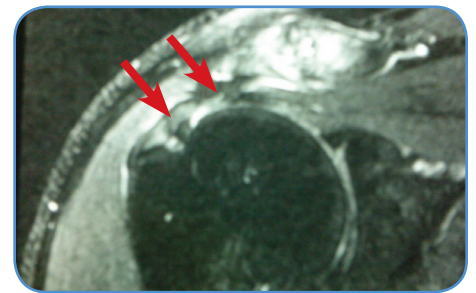


Figure 1. Pre-op MRI of full thickness rotator cuff tear.

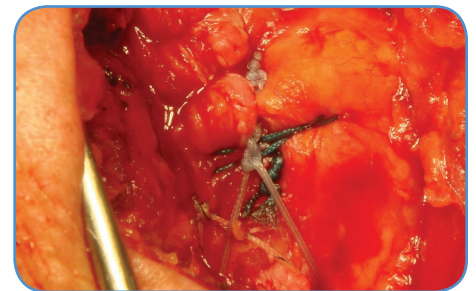


Figure 2. Completed primary repair of the rotator cuff.

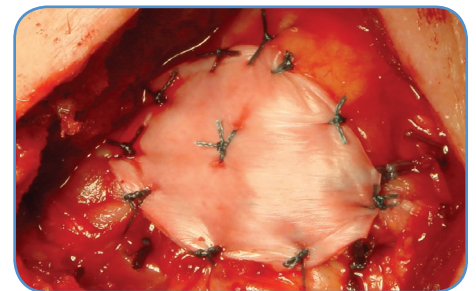


Figure 3. Rotator cuff repair augmented with the OrthADAPT® Bioimplant.

FiberWire® sutures (Arthrex). The suture anchors were placed into the medial aspect of the greater tuberosity and the sutures were passed through the tendon in a figure of 8 configuration. With the arm slightly abducted the rotator cuff was secured back to the insertion site of the greater tuberosity.

A 3cm x 3m OrthADAPT® Bioimplant was then used to reinforce the primary repair in an overlay fashion. The bioimplant was prepared in the prescribed manner, trimmed into an oval shape and centrally positioned over the repair site. The bioimplant was then secured to the rotator cuff repair using #3-0 Ethibond® non-absorbable suture (taper needle) achieving a Circumferentially Tensioned Repair™ (CTR™). Care was taken to apply maximum tension at each stitch around the periphery of the bioimplant as it was sutured in place. Finally, a simple dome stitch was placed at the center of the OrthADAPT® Bioimplant to increase intimate contact with the underlying repaired tendon. The wound was irrigated with normal saline and closed without complications. An abduction pillow was placed under the arm and the patient was taken to the recovery room in good condition.

RESULTS

A rotator cuff repair reinforced with the OrthADAPT® Bioimplant was successfully achieved.

3 months: The patient completed post-op physical therapy and experienced an earlier return to function with a Constant Shoulder Score of 89.

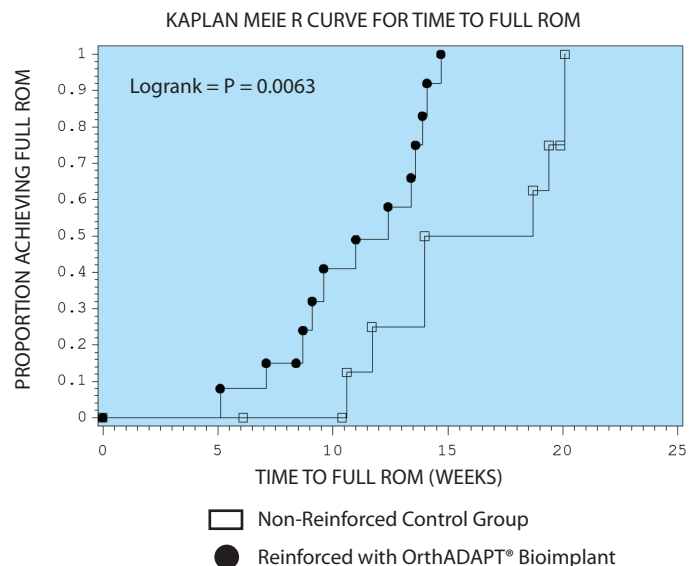
1 year: The patient CSS improved to 98.

18 months: The patient is very satisfied and continues to do well.

DISCUSSION

This patient is part of an ongoing comparative study. Early analysis of 23 patients (13 with OrthADAPT® Bioimplant reinforcement versus 10 with rotator cuff repair alone) shows that patients with rotator cuff repairs reinforced with the OrthADAPT® Bioimplant achieved earlier ROM (see graph) in comparison to the control group and returned to full activities approximately four weeks earlier (see chart).

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TIME TO RETURN TO WORK/FULL ACTIVITIES

GROUP	MEAN (WEEKS)	MEDIAN (WEEKS)
ORTHADAPT®	12.5	12.6
CONTROL	16.9	16.8

Synovis®

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*Passes USP Sterility Testing. Data on file: Synovis Orthopedic & Woundcare, Inc. Refer to the Synovis Orthopedic & Woundcare, Inc. Instructions for Use for the proper use, precautions, warnings, approved indications and labeling of the OrthADAPT® Bioimplant. CAUTION: Federal law restricts this product to sale by or on the order of a physician. OrthADAPT® Bioimplant is a registered trademark of Synovis Orthopedic & Woundcare, Inc. Fiberwire® is a registered trademark of Arthrex. Corkscrew™ is a trademark of Arthrex. Ethibond® is a registered of Ethicon, a Johnson & Johnson Company.

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