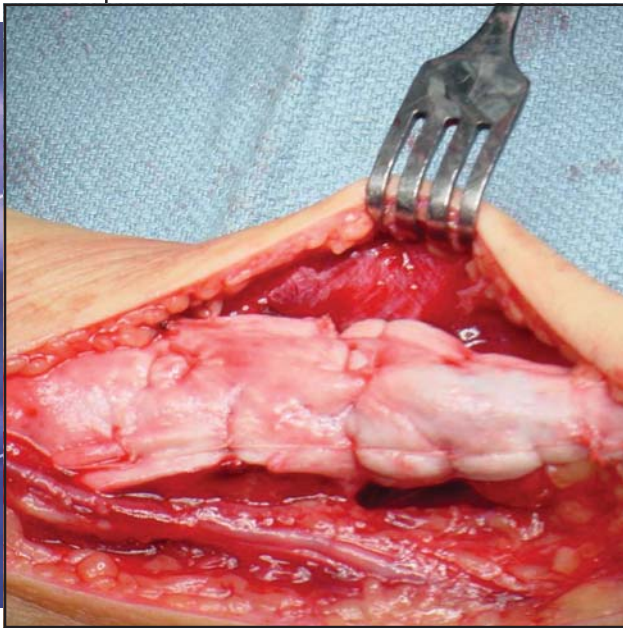


GRAFTJACKET® Regenerative Tissue Matrix Augmentation of the Achilles Tendon with an Acellular Regenerative Tissue Matrix

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INTRA-OP | reinforcing main suture repair



POST-OP | 4 months, symmetric double heel rise



INTRODUCTION

The Achilles tendon is one of the strongest tendons in the human body. It is capable of withstanding loads over 60N, yet is one of the most common major tendon injuries. Acute ruptures may go undiagnosed or misdiagnosed resulting in a chronic situation. Acute and chronic Achilles tendon ruptures present unique challenges for repair and may often require augmentation for successful outcome.

The GRAFTJACKET® Regenerative Tissue Matrix is a human acellular tissue graft that has demonstrated excellent tensile strength and suture retention properties. This graft also has exhibited excellent biocompatibility in soft tissue repair. The combination of biocompatibility and strength makes the GRAFTJACKET® Matrix an ideal augmentation for Achilles tendon ruptures.

PATIENT PROFILE

The patient is a 29 year-old male, weighing approximately 94kg. The patient experienced a “pop” and pain behind his left ankle while playing basketball.

SURGICAL METHOD

The patient is placed in a prone position and the leg and foot are prepped and draped. A longitudinal incision is made along either the medial or lateral border of the Achilles tendon centered over the defect.

The skin and subcutaneous tissue are opened, and the paratenon incised to expose the Achilles tendon and the rupture. Care is taken throughout the procedure to protect the skin and the overlying vascular supply, as well as the sural nerve running along the lateral border of the Achilles tendon. The paratenon is reflected as part of a full thickness flap with skin and

subcutaneous tissue.

The tendon rupture ends are exposed and hematoma evacuated. A light debridement of the mop ends of the rupture is carried out. Heavy non-absorbable suture such as #5 Ethibond is placed using a Kessler or Krakow type suture to secure the proximal and distal tendon/muscle tissue. The foot is plantar flexed and the suture then runs circumferentially about that tendon at the rupture site.

A 5x10 cm of GRAFTJACKET® Matrix is prepared and cut to contour to the tendon tapering distally. Interrupted #1 absorbable sutures are placed along the medial and lateral margins, as well as at the proximal and distal margins and centrally, incorporating the underlying tendon both proximal and distal to the rupture site. In cases of a proximal rupture, the suture would be placed primarily in muscular tissue, but an attempt is made to incorporate central tendinous fibers in this suture.

Additional augmentation can be obtained by using the portion of graft that was trimmed during the contouring process by placing anterior to the tendon rupture.

Following the repair, an absorbable suture is used to approximate the paratenon and close the subcutaneous tissue. Staples are used to close the skin. A bulky dressing is applied and a short-leg cast with the Achilles tendon under slight tension.

POST-OP | 4 months, the patient exhibits excellent flexion & extension.



The patient demonstrated mild weakness and fullness, but walked without a limp and admitted to jogging.

POST-OPERATIVE COURSE

The cast is taken off at 10 to 14 days and the skin clips removed. The degree of protection and length of immobilization is individualized. A walking cast or walking boot is generally applied with crutches, but weight bearing is tolerated with a walking boot. When using a walking boot, it can be removed for range of motion exercises. This is continued for 4 weeks. The patient is then given a heel lift and rehab is progressed. Normal activities are allowed when motor strength is similar to the uninvolved extremity. Stretching and rehab exercises are continued for at least one year postoperatively. The patient in this case is 10 months post-op, comfortable with excellent strength in his left leg and a full range of motion. He has returned to running and sporting activities (although his wife has banned him from basketball).

DISCUSSION

The GRAFTJACKET® Regenerative Tissue Matrix is a processed acellular dermal matrix which demonstrates exceptional tensile strength and suture retention properties. A lack of specific or non-specific inflammatory response is due to the intact nature of the extracellular matrix. Due to the fact that the matrix is free of cells or cell remnants, the material has demonstrated excellent biocompatibility in soft tissue repair. The combination of biocompatibility and strength makes the GRAFTJACKET® Matrix a suitable material for the augmentation of Achilles tendon repairs.



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GRAFTJACKET™ is processed by LifeCell Corporation for Wright Medical Technology, Inc.

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Covered by one or more of the following patents. US Patents 4,865,871, 5,024,830, 5,336,616.

SK 255-1003 Rev. 09/04