Endoscopic Gluteus Medius Repair With Allograft Augmentation For Recurrent Abductor Tear- A Case Report And Novel Technique

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Conflicts of Interest

- Consultant for Conmed Linvatec
  - Teaching and Product Development
- Consultant for Smith and Nephew
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- Minority shareholder in Crystal Clinic Orthopedic Center
- Associate Master Instructor of Arthroscopy for the Arthroscopy Association of North America
Introduction

- Endoscopic abductor repair has gained popularity as a minimally invasive technique to repair abductor tears.

- Recently, a systematic review demonstrated excellent outcomes—consistent with open repair with fewer overall complications.

- The literature is beginning to elucidate outcomes for endoscopic repair of the abductors and has compared it to open repair.

- Therefore, there is scant data in the literature to guide us regarding options for the failed endoscopic abductor repair or the abductor tear with tendon insufficiency.
Introduction

- Allograft augmentation with acellular dermis has been described in an open technique with good short term results.

- In the shoulder literature, arthroscopic allograft augmentation of rotator cuff tears has shown success in both primary and revision rotator cuff repair.

- To the author’s knowledge, this is the first description of an endoscopic abductor repair with allograft augmentation.

- This endoscopic allograft technique has potential to help augment the difficult primary repair with poor tendon quality, as well as the revision abductor repair with deficient tendon quality.
Case Presentation

- We present the case of a thirty-nine year old female who underwent a total hip arthroplasty, developed a severe Trendelenberg Gait, and underwent 2 years of non-operative care with no improvement.

- History and physical exam demonstrated abductor insufficiency, and it was confirmed under dynamic musculoskeletal ultrasound. All options were discussed, and the patient decided to undergo endoscopic gluteus medius repair.

- Postoperatively, the patient remained touchdown weight bearing for six weeks, discontinued all ambulatory assistive devices at eight weeks, and regained full abduction strength at 18 weeks post operatively.

- Nine months post-operatively, the patient sustained a fall and presented at the senior author's clinic. The patient had severe lateral pain and a pronounced Trendelenberg Gait with 3/5 abductor strength. Ultrasound evaluation noted massive re-tear of the abductors with retraction. Conservative care, with eight weeks of physical therapy, was attempted with no gain in strength, function, or pain relief. A musculoskeletal ultrasound revealed a massive re-tear of the abductors with retraction.

- After extensive pre-operative consultation, the patient was consented for revision endoscopic gluteus medius repair with possible allograft augmentation. The patient understood all risks, benefits, and alternatives and wished to proceed.
Description of Surgical Technique

- The patient was placed in the supine position on a standard hip arthroscopy table with no traction applied. The leg was placed in extension with internal rotation.

- Three portals were utilized for the repair: Proximal Anterolateral Portal (PALA), Distal Anterolateral Portal (DALA), and a Mid-Anterior portal (MA). We began superficial to the Iliotibial Band (ITB) and performed a diamond shaped resection of the ITB. The trochanteric bursa and underlying scar tissue were removed to gain visualization of the gluteus medius (GMed), gluteus minimus (GMin), vastus lateralis (VL), and the insertion of the gluteus maximus (GMax).

- We then identified the massive re-tear, which was retracted proximally from the tip of the greater trochanter 3 cm. Soft tissue releases were utilized to mobilize the GMed and GMin tendons. The tendons were then repaired proximal to their insertion sites on the greater trochanter using 2 double loaded suture anchors (Qfix, Smith and Nephew).
Description of Surgical Technique

- A 3 cm by 3 cm defect was measured on the greater trochanter, and an allograft patch of acellular dermis was prepped on the back table. 6 sutures were placed circumferentially around the allograft with stick knots, and shuttle sutures were placed through the repaired GMed and GMin tendon. The graft was then shuttled into place through the distal cannula, and the proximal four sutures were sewn into the surrounding abductor tendons. The inferior 2 sutures were then placed into a knotless anchor, (PopLock, Conmed Linvatec) which was placed at the level of the vastus lateralis tubercle.
Post-operative Course

- The patient was placed in a brace post-operatively for 6 weeks and was touchdown weight bearing for 6 weeks. The patient was slowly weaned off crutches and advanced to a cane at 8 weeks post-operatively. The patient discontinued her ambulatory assistive devices at 12 weeks. 5/5 strength was regained at the 18 weeks post-operative point.
Post-Operative Course

mHHS

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mHHS
Post-operative Course

HOS-ADL

- PreOp
- 2 Wk
- 6 Wk
- 12 Wks
- 18 Wks
- 24 Wks
- 36 Wks
- 52 Wks

HOS - ADL
Discussion

- Primary endoscopic gluteus medius and minimus repair can be a technically challenging procedure, but can provide excellent outcomes with decreased complication rates.
- Endoscopic repair combined with allograft reconstruction can potentially provide a solution for tears with insufficient tendon quality and severe retraction that does not allow for anatomic restoration of the footprint, as well as revision repairs.
- The endoscopic allograft technique is technically demanding.
- This procedure can be completed with a learning curve consistent with the allograft rotator cuff literature in the author’s experience.
- Although it has shown positive outcomes in the rotator cuff literature, the allograft technique may or may not be applicable to abductor repairs.
- As the literature evolves regarding endoscopic abductor repair, care must be taken to ensure that short-term, mid-term, and long-term follow-up must be achieved.
- Revision abductor repair with allograft or xenograft augmentation must be closely monitored with specific outcome studies for short-term, mid-term, and long-term outcomes.
References


