

SUMMARY OF CLINICAL STUDIES USING ALLOGRAFT ILIOTIBIAL BAND/FASCIA LATA FOR LABRAL RECONSTRUCTION

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INTRODUCTION

Over the past decade, hip arthroscopy has become a more prevalent procedure to preserve and restore the function of the native acetabular labrum. The acetabular labrum is the circumferentially intact tissue that lines the rim of the hip joint to stabilize the articulation between the femur head and the pelvis. It provides load and distribution support and can act as a pressurized seal to preserve the intra-articular fluid that lubricates the hip joint. Reconstruction procedures have been developed to address damaged labral tissue. These reconstruction procedures can be circumferential or segmental – spanning the majority of the acetabular rim or a smaller portion of it, respectively.¹

As labral reconstruction and augmentation procedures have matured, there has been an increasing interest in the type of graft utilized in these cases. Surgeons have several options for labral reconstruction and augmentation grafts, including autograft and allograft tissue.^{1,2} More recently, lateral thigh fascia lata, the connective tissue that spans the anterior portion of the iliac crest to the anterior lateral portion of the tibia, has been used (**Figure 1**).



Figure 1. Fascia lata allograft, measuring 110 mm in length and 6 mm in diameter, made tubular with No. 2-0 nonabsorbable braided suture.³

OBJECTIVE

The purpose of this study is to summarize clinical patient-reported outcome (PRO) scores for labral reconstruction procedures utilizing iliotibial band/fascia lata allograft tissue.

METHODS

Four peer-reviewed articles reporting PRO scores for 203 labral reconstruction procedures using fascia lata allograft were identified and reviewed.

RESULTS

The first study assessed two-year outcomes for 104 patients who underwent labral reconstruction at an average age of 42.3. Fifty-three of the 104 had segmental procedures and 48 of these 53 received iliotibial band allograft (the other 5 received hamstring graft or an alternative unspecified graft). The remaining 51 of the 104 had circumferential procedures, all utilizing iliotibial band allograft. Average PRO scores documented improvements for patients in both the segmental and circumferential groups as measured by VAS for pain (-28.1 ± 25.6 and -28.1 ± 26.5 , respectively); mHHS (22.9 ± 20.0 and 17.0 ± 18.8 , respectively); Hip Outcome Score – ADL (HOS-ADL) (24.8 ± 24.4 and 19.0 ± 17.7 , respectively); Hip Outcome Score – Sports Scale (HOS-SS) (32.6 ± 28.8 and 36.6 ± 25.3 , respectively); and International Hip Outcome Tool-12 (iHOT-12) (35.7 ± 30.3 and 33.8 ± 27.2 , respectively).⁴

In the second analysis, 10 patients with an average age of 35 underwent segmental labral reconstruction procedures using fascia lata allograft and were evaluated at an average follow-up time of 23 months. The authors reported a mean improvement in mHHS of 37 points and a mean post-operative patient satisfaction score of 9.5 out of 10, with a range of 8–10. The authors concluded that, “Arthroscopic labral reconstruction using a fascia lata tendon allograft is an effective and safe procedure that not only provides excellent clinical outcomes in short term but also potentially prevent[s] continued cartilage degeneration by restoring acetabular labral seal in patients with deficient or resected labrums.”⁵

A third published study followed 31 patients at an average age of 43.7 underwent segmental labral reconstruction using fascia lata allograft and were evaluated at an average of 28 months (minimum two years) post-procedure. Four of the patients converted to total hip arthroplasty, but the remaining 27 experienced average score improvements for mHHS of 20.6 ($P=0.0015$), iHOT-12 of 31.7 ($P=0.0017$), HOS-ADL of 19.0 ($P=0.0032$), and HOS-SS of 32.8 ($P=<0.0001$). Short-form patient survey scores (SF-12 Physical) improved by 10.1 to 49.0 ($P=0.0004$). The lead surgeon and author stated that, “Arthroscopic acetabular labral reconstruction using fascia lata allograft and a shuttle technique appears to be an effective procedure for the treatment of labral pathology through minimum two-year follow-up.”⁶

The final published study followed 62 patients who underwent circumferential labral reconstruction procedures at an average age of 38.3 utilizing fascia lata allograft from AlloSource® (Centennial, CO). At a five-year minimum follow-up, average mHHS improved by 27.43 ± 15.7 , average iHOT-12 improved by 46.68 ± 17.4 , and average VAS for pain was reduced by 21.6 ± 14.2 . Satisfaction VAS scores were 85.14 ± 17.4 .⁷

DISCUSSION

The successful use of fascia lata allograft for labral reconstruction is well-documented (**Figure 2, as described in this document**). These representative studies consistently document PRO score improvements for acetabular labral reconstruction procedures using fascia lata allograft from tissue banks, such as AlloSource.⁷



Figure 2. Image of a fascia lata allograft used in a complete circumferential labral reconstruction (courtesy of Dr. Winston Gwathmey M.D., University of Virginia).

Further, many describe the advantages of allograft fascia lata over autograft fascia lata in these procedures, noting the avoidance of donor site morbidity, decreased surgical time, and the ability to work with allografts with the ideal size and composition.^{6,8}

CONCLUSION

There is a growing body of clinical evidence documenting that iliotibial band/fascia lata allograft are well suited for use in a variety of labral reconstruction procedures. **Table 1** summarizes reported mHHS score improvements in the four studies outlined in this paper.

These allograft products currently require suturing by the surgeon or a physician assistant in advance of placement in the joint. The adoption of a pre-sutured allograft may simplify labral reconstruction or augmentation procedures by reducing procedure time and providing a more consistent allograft source.

Table 1. Summary of Improvements in Mean Modified Harris Hip Scores (mHHS) Following Labral Reconstruction Using Fascia Lata Allograft and Iliotibial Band Allograft as Reported in Four Patient Studies

	Mean Preoperative mHHS Score	Mean Outcome mHHS Score	Mean Change	Sample size (N)	Mean Follow-up
Bodendorfer BM, et al. Multicenter Outcomes after Primary Hip Arthroscopy. ⁴					
Group 1 - Segmental Procedure	59.3 ± 15.8	81.8 ± 16.7	22.9 ± 20.0	53	Minimum 2 years
Group 2 - Circumferential Procedure	65.4 ± 14.2	83.6 ± 14.6	17.0 ± 18.8	51	
Rathi R, et al. Arthroscopic Acetabular Reconstruction with Fascia Lata Allograft ⁵	58 (55-60)	95 (range 91-98)	36 (range 31-41)	10	23 months (range 16-36 months)
Carreira DS, et al. Arthroscopic Labral Reconstruction Using Fascia Lata Allograft. ⁶	64.0 ± 20.2	84.6 ± 19.5	20.6* (p-value 0.0015)	27	Minimum 2 years
Scanalito JP, et al. Labral Repair and Complete Reconstruction. ⁷	58.85 ± 17.4	86.28 ± 16.2	27.43 ± 15.7	62	Minimum 2 years

*Standard deviation not reported

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