Patients with shoulder instability often require labral repair. Modern techniques utilize suture anchors to reapproximate the labrum to the glenoid. See Figure 3.

Knotless anchors do not require arthroscopic knot tying. Standard anchors require a knot to be tied. A novel technique described by Dr. Timothy Johnson and colleagues (2014) utilizes the strengths of the knotless anchor and recycles suture to minimize knots in the joint space and decrease mechanical problems associated with anchor placement on the glenoid rim. Redislocation rates remain high despite advancing arthroscopic techniques. The purpose of this study is to report early clinical outcomes at two years status post arthroscopic stabilization with use of a novel labral repair technique. 1. Johnson T.S., et al. “Recycling suture limbs from knotless suture anchors for arthroscopic shoulder stabilization.” Arthroscopy Techniques 3 (2014): 361-365.

SUTURE RECYCLING TECHNIQUE FOR LABRAL REPAIR

IMPROVES SHOULDER STABILITY

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INTRODUCTION

• Patients with shoulder instability often require labral repair.  
• Modern techniques utilize suture anchors to reapproximate the labrum to the glenoid. See Figure 3.  
• Knotless anchors do not require arthroscopic knot tying.  
• Standard anchors require a knot to be tied.  
• A novel technique described by Dr. Timothy Johnson and colleagues (2014) utilizes the strengths of the knotless anchor and recycles suture to minimize knots in the joint space and decrease mechanical problems associated with anchor placement on the glenoid rim.  
• Redislocation rates remain high despite advancing arthroscopic techniques.  
• The purpose of this study is to report early clinical outcomes at two years status post arthroscopic stabilization with use of a novel labral repair technique.  

METHODS

• Thirteen patients underwent arthroscopic shoulder stabilization and labral repair with the novel technique. See Figure 2.  
• Patient reported outcomes measures included –  
  o American Shoulder and Elbow Surgeons Shoulder score (ASES)  
  o Western Ontario Shoulder Instability score (WOSI)  
  o Veterans Rand 12 Item Health Study (VR-12)  
• Outcomes were assessed at five time points – preoperatively and postoperatively at three months, six months, one year and two years status post index surgery.

RESULTS

• ASES and WOSI were used to assess patient shoulder function and stability.  
• See Figure 4 and Figure 5.  
• There was significant improvement in shoulder function and stability based on ASES scores. ASES Total Score of 100 indicates best shoulder stability and function.  
• WOSI Scores showed an increase in physical, lifestyle sports/recreation/work, and emotional domains. WOSI Total Score of 0 indicates best shoulder stability and function.  
• We did not see significant improvement in pain based on ASES scores. However this could be due to anterior instability patients often not complaining of severe pain.  
• Two patients suffered dislocation postoperatively.  
• No patient in the study had iatrogenic glenoid fracture at two years status post arthroscopy.

CONCLUSIONS

• Patients report a significant increase in shoulder stability after labral repair with the recycling suture technique.  
• These early outcome measures show that the recycling technique provides a viable option for stabilization.  
• Further research will need to be conducted to determine whether or not this technique provides patients with stabilization that is superior to other techniques.  
• Fewer anchors theoretically decrease risk of iatrogenic glenoid fracture, but to show a significant advantage over standard techniques a cohort of patients with standard arthroscopic stabilization techniques must be added.

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Figure 1

Images above are of a left shoulder arthroscopy being viewed from the lateral portal with the patient in the beach chair position.

A: A knotless suture anchor is inserted into the glenoid after suture has been shuttled around torn labrum.  
B: A suture retriever is used to bring one recycled suture limb into the anterior cannula.  
C: One recycled limb in the anterior cannula and one is in the posterior cannula.  
D: A suture lasso is used to shuttle the recycled suture from the anterior cannula.  
E: Recycled limb shuttled around more torn labrum and into the posterior cannula.  
F: Knotless anchors are tied using alternating half-hitches.

Images courtesy of Dr. Timothy S. Johnson.

Figure 2

Images courtesy of Dr. Timothy S. Johnson.