

ANTERIOR CABLE RECONSTRUCTION: IN-SITU TENODESIS STILL HAS A RISK OF POPEYE DEFORMITY

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CONFLICT OF INTEREST

- Disclosures for Dr. Amini are available on the AAOS website.
- The other authors have no disclosures to report.

INTRODUCTION

- Anterior cable reconstruction: maintaining the long head of biceps (LHB) intact with labrum for augmentation of rotator cuff repair
- The goal of ACR is to offload the rotator cuff repair, which has been shown to decrease rotator cuff re-tears
- To our knowledge, no current studies describe the structural failure of ACR resulting in Popeye deformity

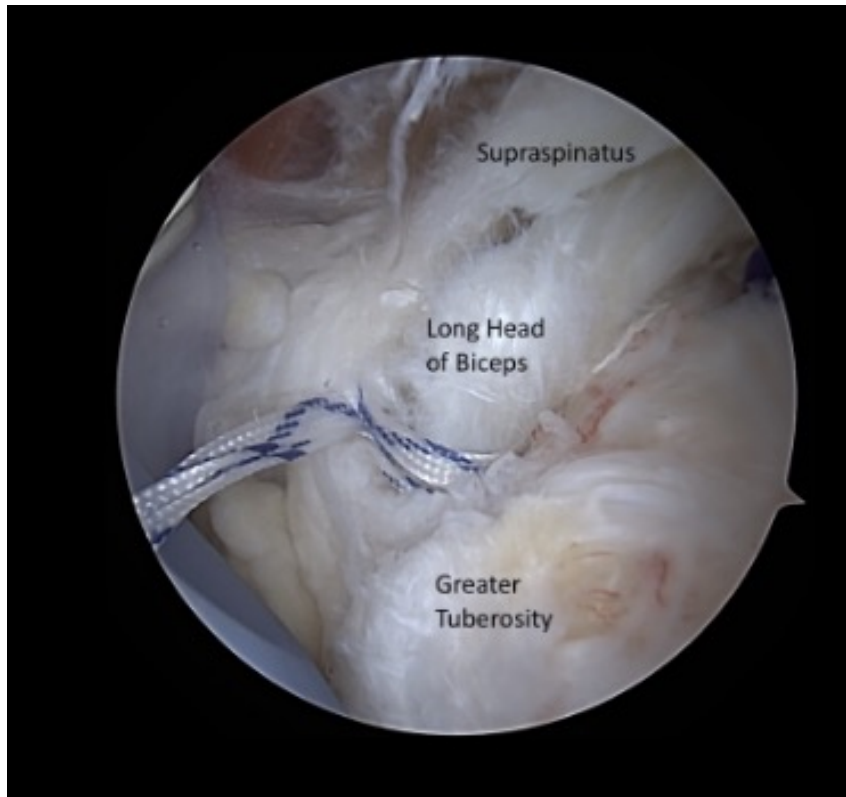
OBJECTIVES

- Describe a series of early failures of ACR leading to Popeye deformities
- Compare the rate of failure in ACR to that of traditional bicep tenodesis

MATERIALS AND METHODS

- Retrospective cohort study of patients who underwent ACR (2022-2023) and patients who underwent conventional biceps tenodesis (2018-2023)
- Case series of patients who underwent ACR with clinical failure

SURGICAL TECHNIQUE



- ACR technique: loop suture tape luggage tagged around the LHB and pulled into lateral row of double row RCR

RESULTS

ACR group: 81 patients

- 6/81 (7.2%) developed a Popeye deformity

Control group: 336 patients

- 6/336 (1.8%) developed a Popeye deformity

Odds Ratio: 4.5 (1.4-14), $p = 0.012$

RESULTS

- 10/12 (83.3%) of Popeye deformities occurred in male patients
- Failures in the ACR group occurred at a mean of 5.5 months (range: 2 – 8 months)
- Only 1 failure in the ACR group occurred before 3 months
- Failures in the control group occurred at a mean of 1.9 months (range: 1.5 – 4 months)
- Only 1 failure in the control group occurred after 3 months

RESULTS

| | ACR Tenodesis (n=81) | Control Tenodesis (n=336) | p-value |
|------------------------------------|---------------------------------|--------------------------------------|----------------|
| Postop Popeye deformity | 7.3% | 1.8% | 0.015 |
| Time to failure (mean) | 5.5 months | 1.9 months | 0.011 |
| Time to failure (range) | 2-8 months | 1.5-4 months | NA |
| Failures after 3 months | 5/6 | 1/6 | 0.08 |

CONCLUSION

- Despite maintaining the LHB with the labrum, ACR has a risk of tenodesis failure leading to Popeye deformity
- In this short-term study, the rate of Popeye deformity was higher than conventional tenodesis failure
- Further research is needed to determine the mechanism of failure and the long-term outcomes after ACR

THANK YOU!

References:

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