ISAKOS CONGRESS 2025 | MUNICH GERMANY June 8–11

Combination of Arthroscopic Biologic Tuberoplasty(ABT) and **Bursal Acromial Reconstruction(BAR)**

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Faculty Disclosure Information

- Nothing to disclosure

Introduction

- Various methods for irreparable Massive Rotator Cuff Tear(MRCT) proposed, but **still challenging** condition to treat
  - ✓ Tendon transfer(LD, PM, LT)
  - ✓ Superior Capsular Reconstruction(SCR)
  - ✓ Partial repair, patch augmentation

- Use of allodermis graft in SCR have been preferred and widely used.

Mihata et al. AJSM, 2012

Mirzayan et al. ICL, 2023

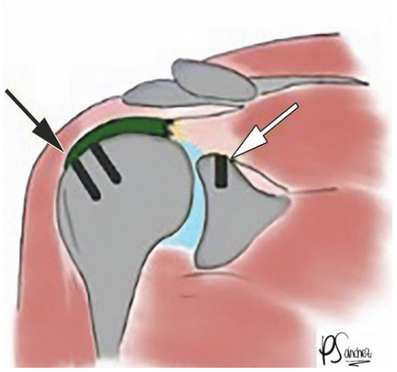
Introduction

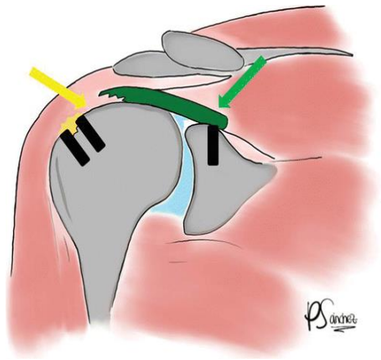
- However, tension on allodermis graft(connecting from glenoid to humerus) after SCR may cause retear.

- Graft failure on glenoid side showed similar satisfactory outcomes in intact group, but humeral side failure showed unfavorable results.

Mirzayan R et al. Arthrosc Tech, 2021

Mirzayan R, Orthop J Sports Med, 2019





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Introduction

- **Recently, Arthroscopic Biologic Tuberoplasty**(ABT) technique has been developed with satisfactory outcomes
  - allodermis graft fixed only to the greater tuberosity
  - without tension
  - prevent contact and irritation between humerus and acromion

Mirzayan et al. ICL, 2023

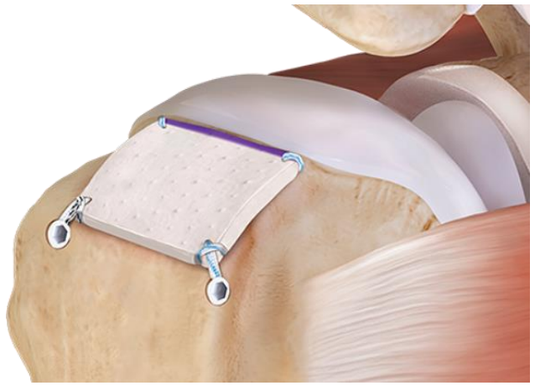
Mirzayan R et al. Arthrosc Tech, 2021

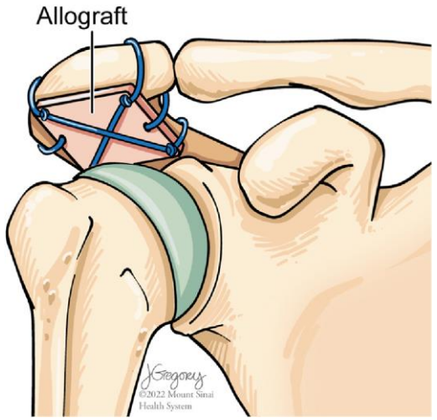
Suri M et al. Arthrosc Tech, 2021

- **Bursal Acromial Reconstruction**(BAR) has also been developed
  - allodermis graft is fixed to the undersurface of acromion
  - also prevent contact and irritation

Ravenscroft M et al. Arthrosc Tech, 2021

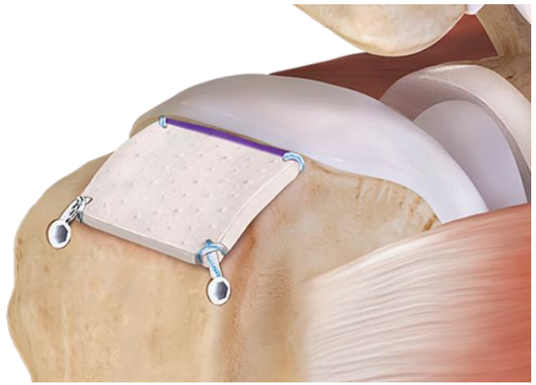
Berthold DP et al. Arthroscopy, 2022

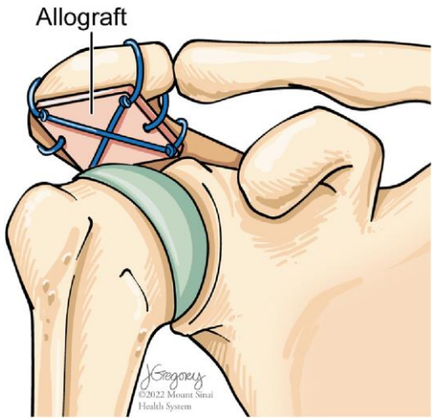




Purpose

- No reported clinical outcomes of the combination of ABT and BAR technique
- **Purpose** : to analyze the clinical results of combination technique
- **Hypothesis** : reduce the Graft failure rate and increase in acromiohumeral distance(AHD)





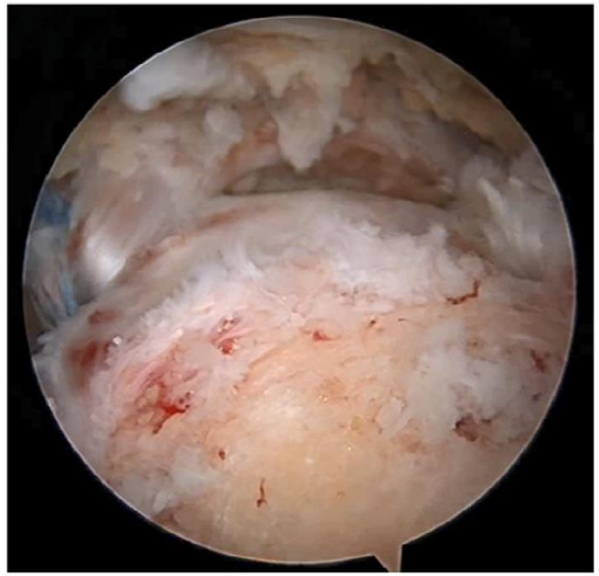
Method

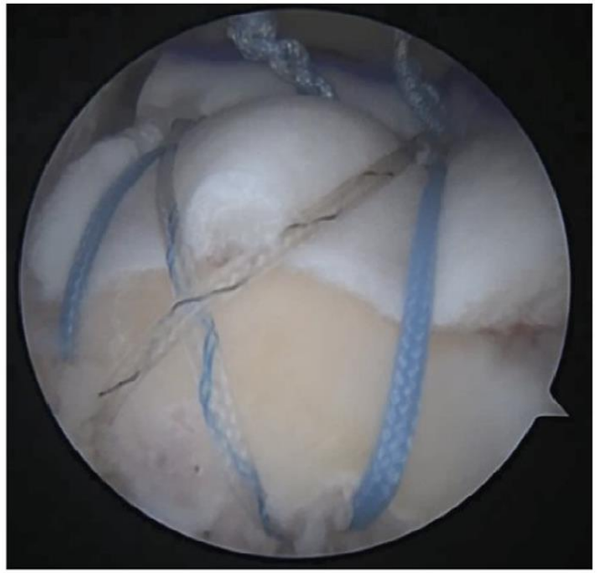
- Total of 18 cases who underwent ABT and BAR procedure
- Retrospectively recruited(July 2020- August 2022)
- Inclusion criteria
  - Massive irreparable tear
  - with normal or reparable subscapularis
- Exclusion criteria
  - Irreparable subscapularis
  - History of infection
  - Joint arthritis (Hamada stage 3 or Higher)

Surgical Technique

- **Biologic Tuberoplasty**

1. Graft fixation with double row suture bridge technique
2. Tension free repair of cuff tendons with remaining medial suture

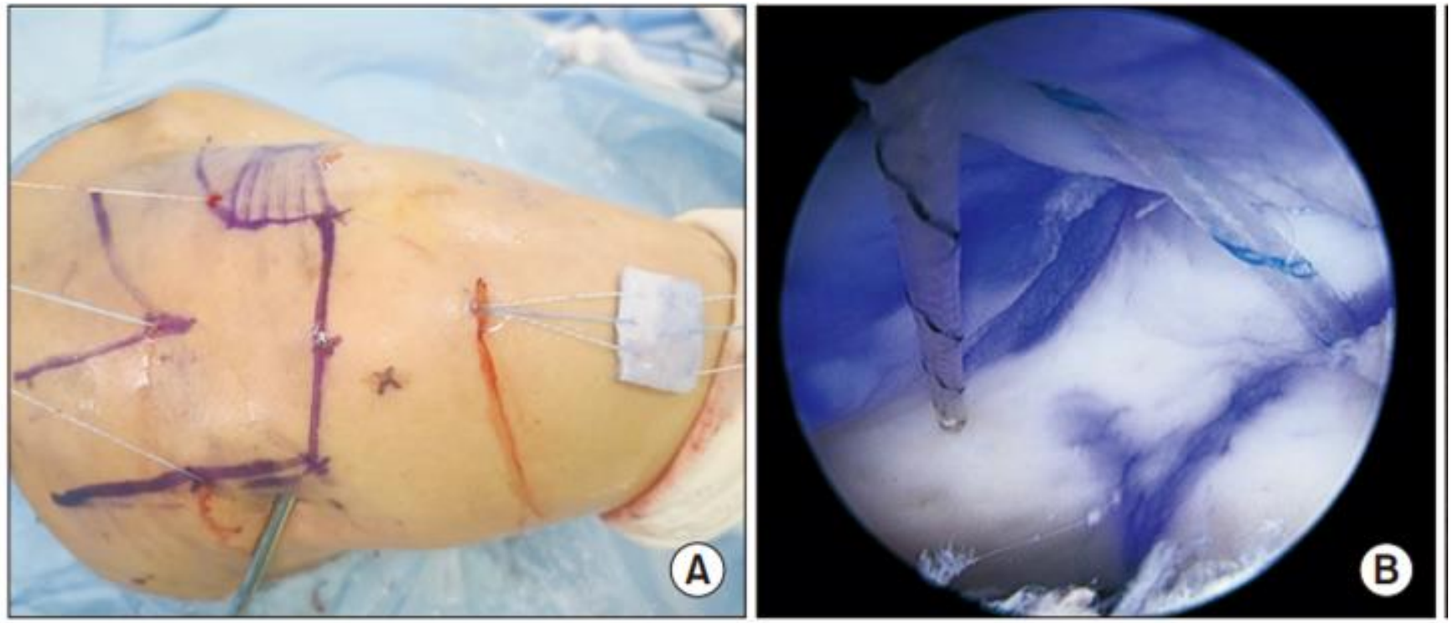




Surgical Technique

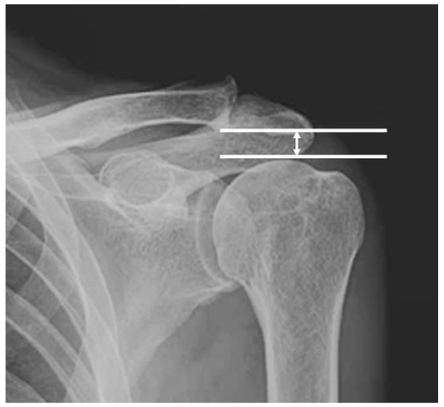
- **BAR(bursal acromial recontruction)**

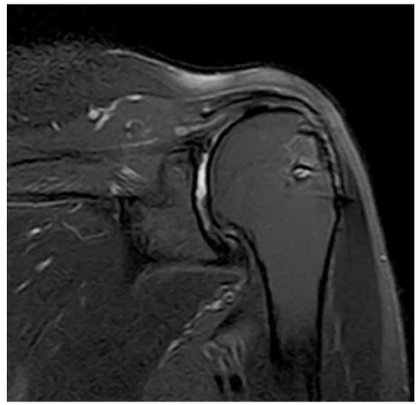
1. Flat acromioplasty.
2. Expected size of the acromion graft was measure.
3. Create three medial shuttle portal by spinal needle and passed the graft to the undersurface of the acromion

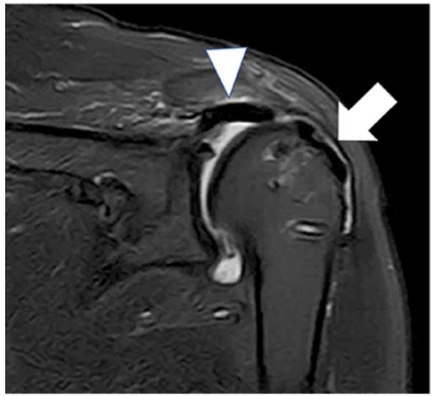


Measurements

- **Clinical measurements** : before surgery and one year after surgery
  - VAS pain scores
  - ASES scores
  - ROM (Range of Motion)
- **Radiological measurements** : before surgery and one year after surgery
  - Plain radiography : Acromiohumeral distance(AHD)
  - MRI & Sonography : integrity of repaired structures





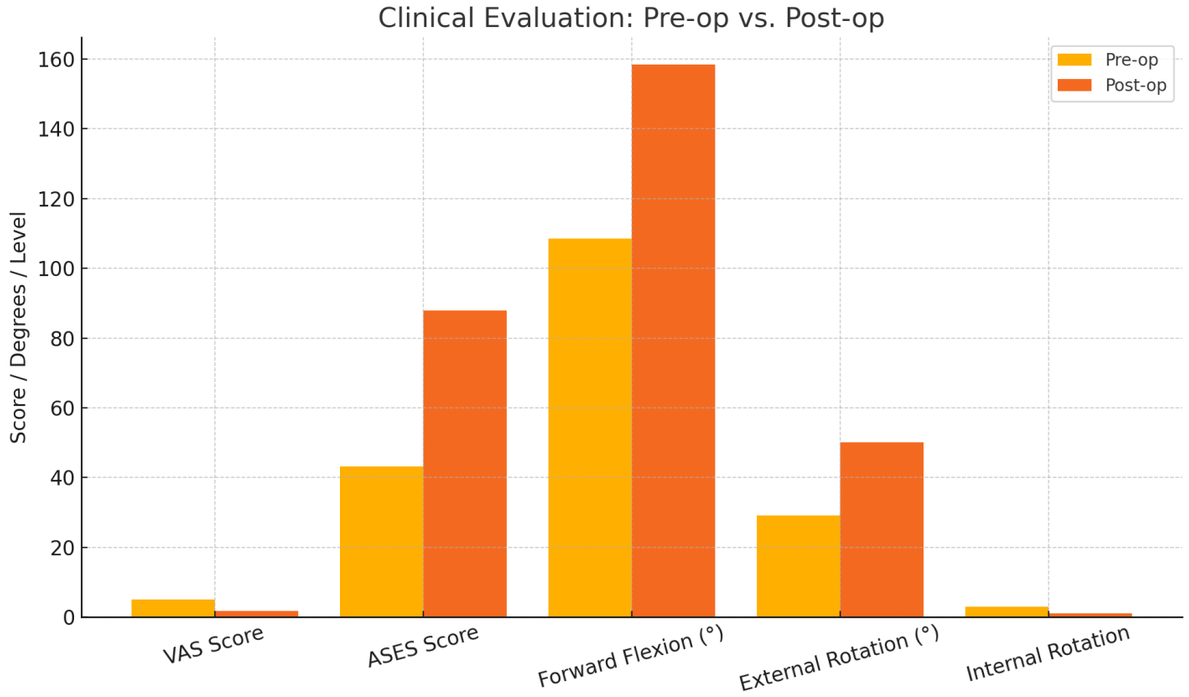


Results

Clinical and Radiologic outcomes.

Variable	Preoperative	Final follow-up	p-value
VAS pain score	5.1 ± 2.4	1.7 ± 1.6	<0.001
ASES score	43.2 ± 21.6	87.9 ± 7.5	<0.001
Active forward elevation	108.6 ± 48.1	158.4 ± 27.4	0.03
Active external rotation	29.1 ± 32.1	50.1 ± 17.5	0.02
Active internal rotation	L3	L1	<0.001
Acromiohumeral distance, mm	4.3 ± 4.1	9.2 ± 1.9	<0.001
Retear, %	–	0 (0 %)	–

VAS: Visual Analog Scales, ASES: American Shoulder and Elbow Surgeons.



Limitations

1. Non-randomized retrospective level IV case study

1. Small sample size : only 18 cases may affect the statistical power

1. Short follow up period : Follow up period is limited to one year

→ Sufficient sample numbers and longer follow-up will be needed in future research.

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