

ePoster Number (#): 14

Arthroscopic **pectoralis minor** tendon transfer
for irreparable **Lafosse type 4** subscapularis tear

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COI Disclosure Information

Presenter : Kotaro Yamakado

I have the following financial relationships to disclose.

Consultant: ConMed, Exactech, Zimmer-Biomet

Background:

Tendon transfer options for irreparable anterosuperior massive cuff tears



- Limited and highly challenging

- , especially with complete subscapularis tears with tendon retraction (Lafosse type 4).

- Latissimus dorsi transfer (LDT) , Pectoralis major are the major choices

- **Pectoralis minor** transfer is considered to be indicated limited to less severe cases (Lafosse type 3)

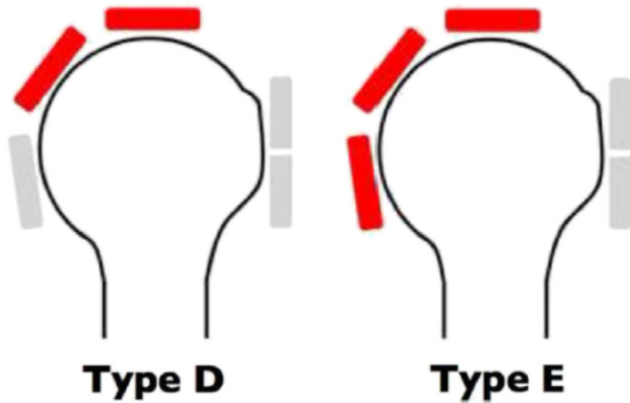
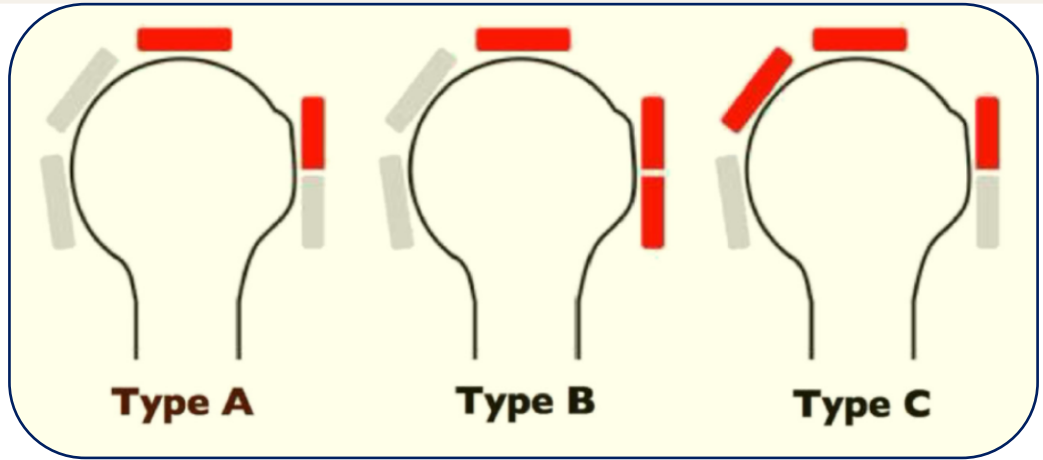
Object of the study

- to evaluate the results of an arthroscopic pectoralis minor tendon transfer for anterosuperior massive cuff tears with **Lafosse type 4 subscapularis tear**.

Materials

- Retrospective chart review
- Twenty-six case
 - 23, male; 3, female
 - Mean age of 68.6 yo (56 to 80 yo)
 - Follow-up: > 24 months
- Anterosuperior massive tears (Collin type B)

Indication/contraindication of pec minor transfer



Indication

- Irreparable SSc tear
- Severe fatty infiltration of SSc

Contraindication

- Advanced CTA (Seebauer 2B)
- Static anterior subluxation
- (severe pseudoparesis < 30)

Evaluation items

- **UCLA score**
 - Patient satisfaction
- **ROM (active)**
 - Forward flexion
 - External rotation
- **VAS scale measuring pain (0 – 100 mm)**

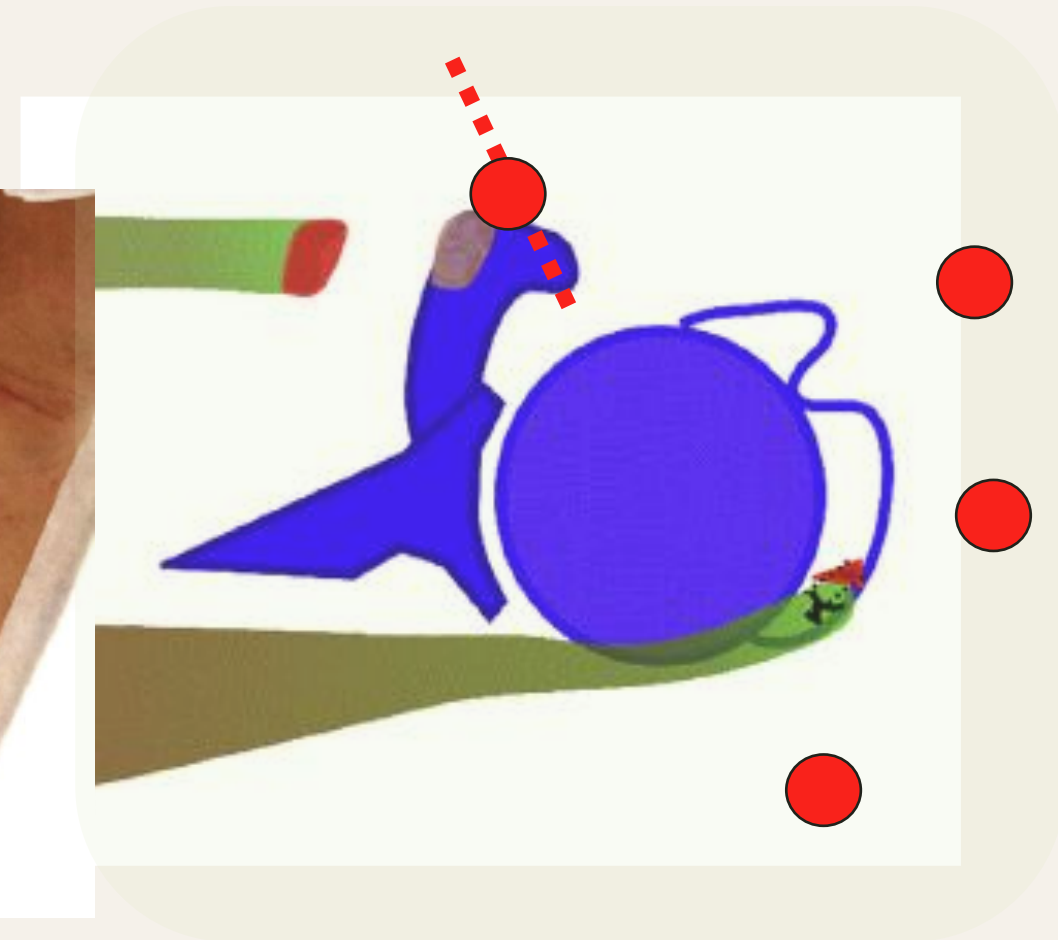
Statistics

- Paired t-test: ASES, UCLA, ROM
- Wilcoxon signed-rank test: VAS

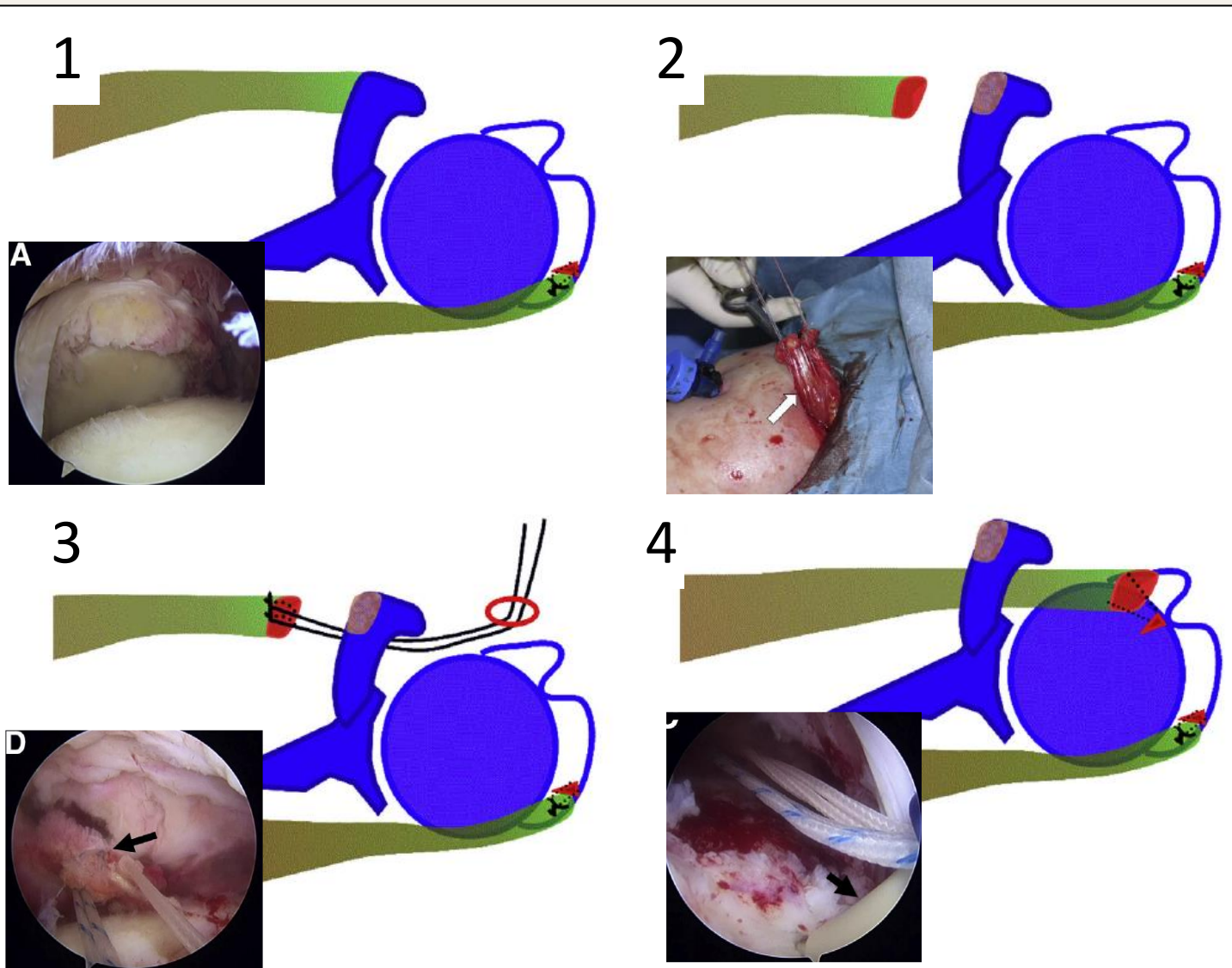
Materials and methods

Setting

- GA/ISB
- Beach-chair position



Surgical steps



1. Posterior cuff repair (partial/complete)
2. Harvesting pec minor **with bone tip**
3. Introducing the tendon under a/s vision
4. Fix the tendon with a **knotless anchor**

Results

Clinical outcomes at final follow up

	Preoperative	At a mean of 37.2 months (range, 24 to 92 months)	P value
UCLA	14.8 (5.9)	30.9 (5.2)	< .0001 ***
Active ROM(°)			
Flexion	104 (51)	146 (29)	< .0001 ***
External rotation at side	46 (17)	59 (19)	0.00026 ***
Pain-VAS (mm)	62	10	< .0001 ***

mean (SD)

- No OA progression
- One revised to reverse shoulder arthroplasty at 15 months

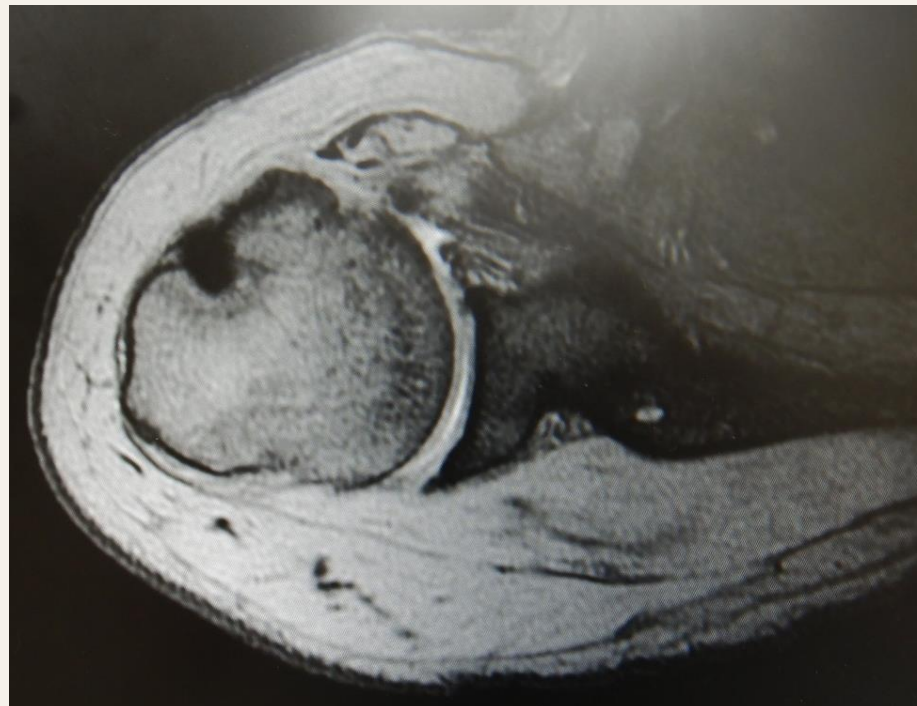
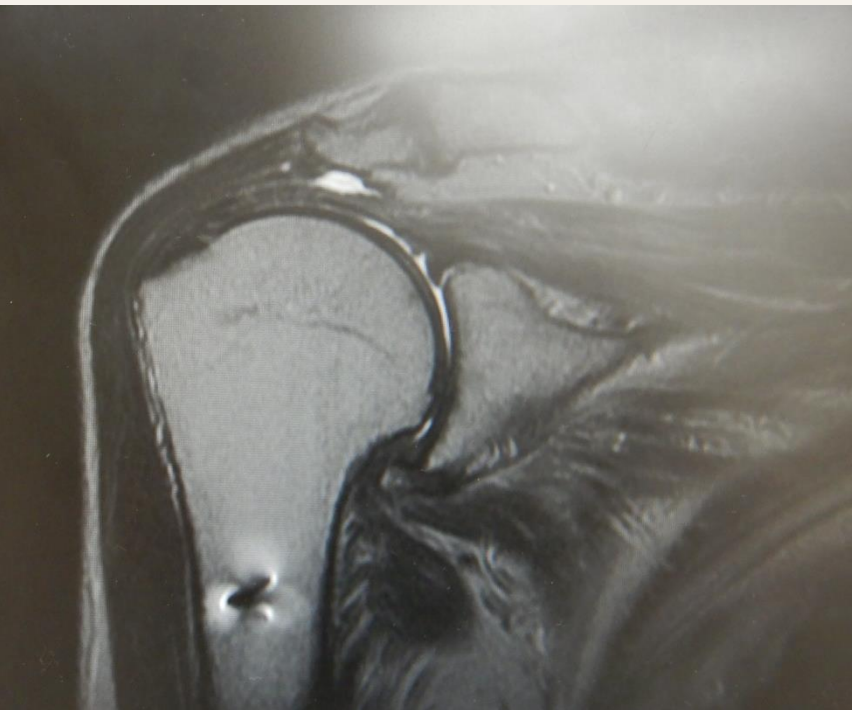
CASE: 72 yo, male

- Lafosse type 4
 - SSP, ISP torn
- ISP to repaired to middle facet
- SSP, no repair
- Pec minor tendon to LT



Postoperative outcomes

- UCLA, 34
- ASES, 100
- Flexion, 135
- Ext Rot, 80



Greater tuberosity is covered with T2 low structure (“neo tendon”)

Graft continuity is observed

Discussion

The main action of the transferred pec tendon

How the tendon transfer surgery work

- Re-balance the “force couples”
- Soft tissue interposition (“spacer effect”)
- Lowering and re-stabilizing the humeral head (“tenodesis effect”)

Yamakado, Arthroscopy (2017)

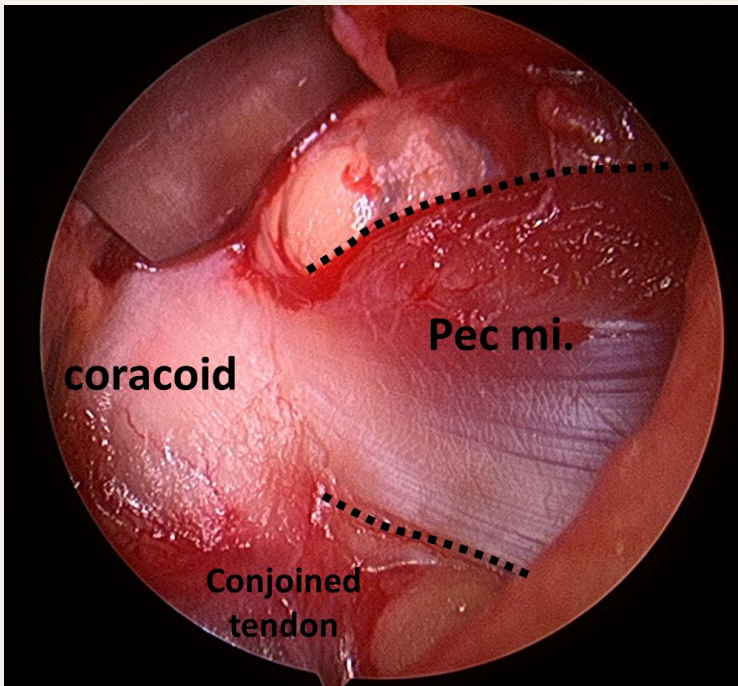


- Soft tissue interposition?
 - No external rotation restriction at the final follow-up

Limitation

- No control group
- Short term outcome
- Selection bias
 - Male gender, 88%
 - Relatively good preoperative ROM

Conclusions



● Arthroscopic pectoralis minor tendon transfer

- ✓ showed significant improvements in overall shoulder pain and **function with Lafosse type 4** subscapularis tear.
- ✓ appeared to be an **effective** alternative to pectoralis major tendon transfer, even in more **severe cases**.



Significance of the findings

- There were many arguments that...
 - the pectoralis minor tendon transfer is limited to relatively mild cases of Lafosse type 3 or less
 - , based on the amount of pectoralis minor muscle in the transfer
- The present study suggests that
 - pectoralis minor tendon transfer may be indicated even for Lafosse type 4.