

Return to sports after medial patellofemoral ligament reconstruction using FiberTape and knotless SwiveLock Anchors

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COI Disclosure

**Yuka Kimura, , Eiji Sasaki, Daisuke Chiba,
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Yasuyuki Ishibashi**

There are no COI with regard to this presentation.

Return to sports (RTS) after MPFLR



Return to Play After Medial Patellofemoral Ligament Reconstruction

➤ Manjunath AK. AJSM 2021

■ Systematic review

- ◆ Inclusion criteria: **20** papers (-Sep, 2019)
- ◆ F/U: 39.3 months
- ◆ Rate of RTS: **85.1** (50-100)%
- ◆ Rate of RTS at same/higher level: **68.3** (18-84)%
- ◆ Average time to RTS: 7 (5.8-8.2) months

Purpose

- **To investigate the return to pre-injury sports after MPFLR using FiberTape and knotless SwiveLock Anchors technique for patellar instability.**

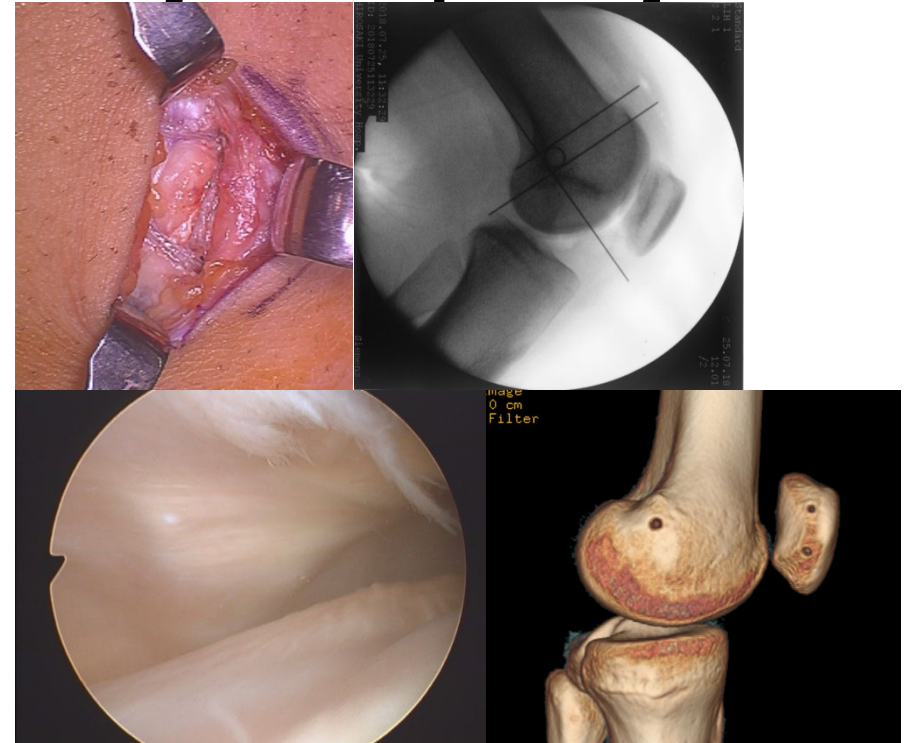
Patients

- 94 knees of 65 patients with (recurrent) patellar dislocation who underwent MPFLR between 2016-20
- Pre-operative activity level

	Competitive	Rec/PE class	No sports	P value
Case n	28	20	17	
Bilaterally n (%)	16 (57.1%)	4 (20%)	12 (70.6%)	0.004
Age y	15.9±4.3	15.9±5.3	31.2±11.7	<0.001
Gender	M11, F17	M3, F17	M2, F15	0.010
BMI	23.9±4.1	24.7±4.3	24.9±5.5	0.727
Tegner score	7.2±1.1	3.9±0.6	2.6±0.7	<0.001

MPFLR using FiberTape and SwiveLock

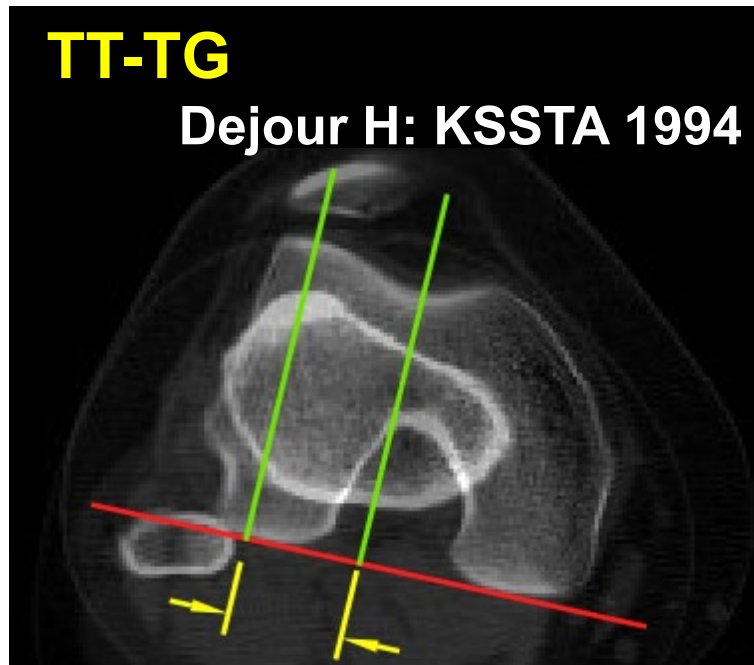
- **Graft: FiberTape[®] (Arthrex)**
 - Passed the graft in layer 2 of the medial joint capsule just below the fascia.
- **Fixation: SwiveLock[®] (Arthrex)**
 - Patellar insertion site
 - Femoral side: Schöttle' point
 - Fixed at 90 degree of knee flexion
- **After protocol**
 - **POD 1**
 - Range of motion ex.
 - Full weight bearing
 - Quadriceps and hip strengthening ex.
 - **3M**
 - Return to sports



- Sakamoto Y. Arthroscopy 2020
- Ishibashi Y. Arthrosc Tech. 2020
- Sasaki E. Knee. 2022

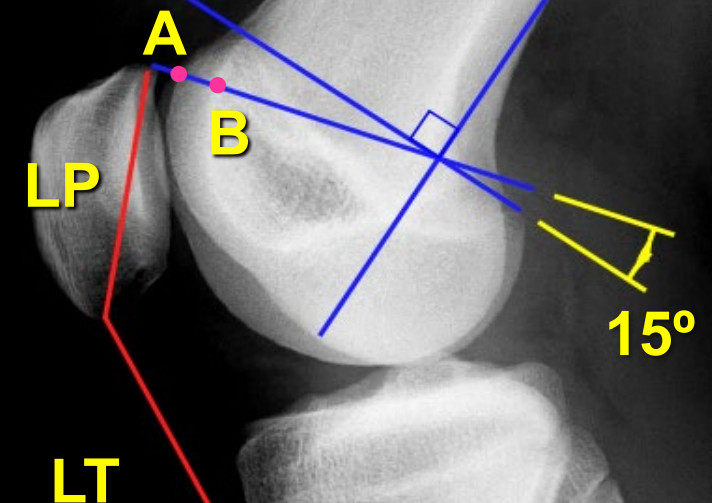
Image evaluation of anatomical factor

- Trochlear dysplasia
- Patellar height
- Lateral position of the tibial tubercle related to trochlea groove



Trochlear depth (TD)
 $= A - B$

Dejour H: KSSTA 1994

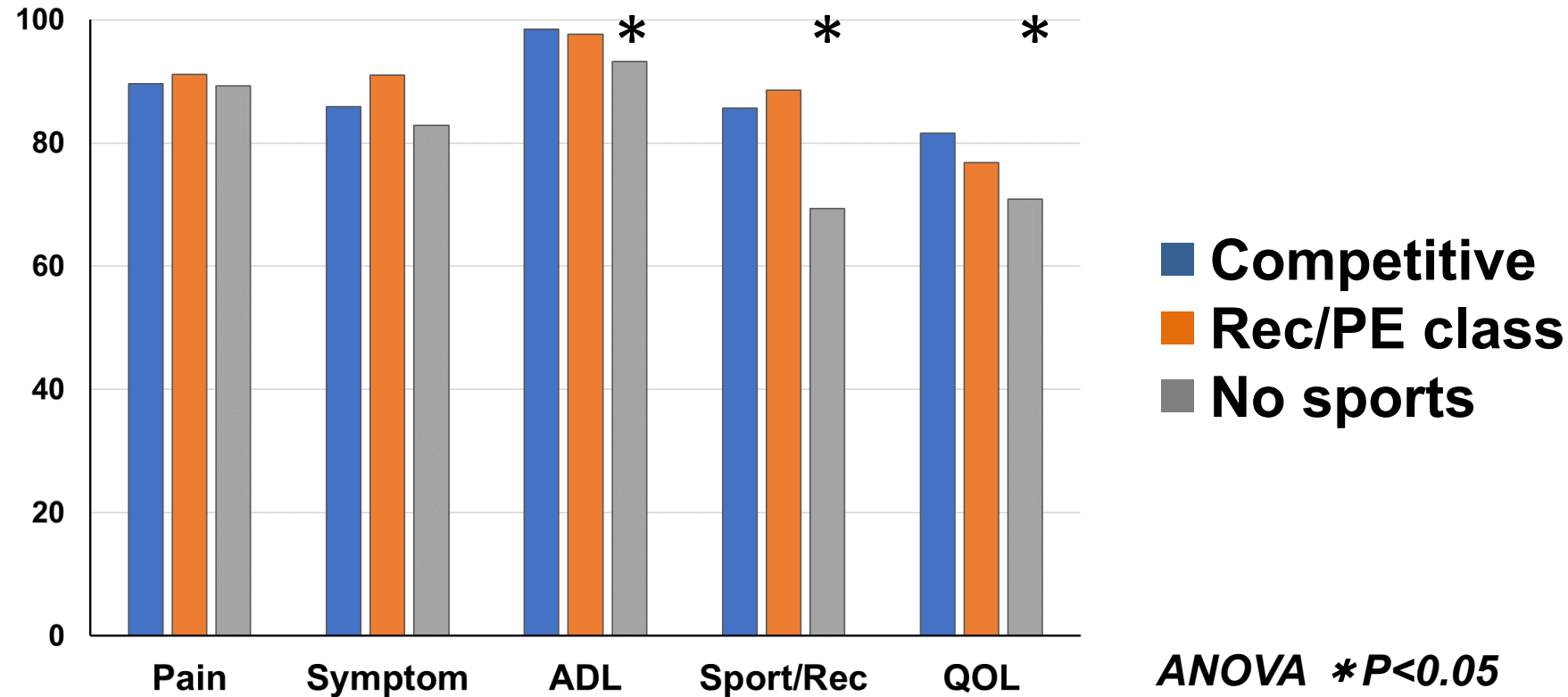


Insall-Salvati ratio (ISR)
 $= LT / LP$

Insall J: Radiology 1971

Results: Clinical outcomes at min 2-year f/u

- Re-dislocation: none
- Positive apprehension sign: 3.2% (3/94 knees)
- KOOS at final f/u



Results: Rate of RTS

■ Competitive level

- ◆ Return to pre-injury sports: **92.9%** (26/28 patients)
 - Return to different sports: 1 patient
 - Other lifestyle factors: 1 patient
- ◆ Mean times: **6.0** ± 2.8 (3-12) months

■ Recreation sports or PE class

- ◆ Return to pre-injury sports: **100%**
- ◆ Mean times: **5.6** ± 2.3 (2-11) months

Factors affecting KOOS sports/rec score in athletes

■ Competitive athletes (n=28)

	B	β	P	95%CI		
Age	0.79	0.27	0.06	-0.03	-	1.60
Gender (M:0, F:1)	4.14	0.14	0.31	-4.11	-	12.38
BMI	-2.49	-0.45	0.00	-3.99	-	-0.99
Bilaterally (Uni: 0, Bil:1)	-11.06	-0.34	0.01	-18.71	-	-3.41
TT-TG	-0.39	-0.08	0.52	-1.62	-	0.84
TD	-0.46	-0.05	0.70	-2.90	-	1.97
ISR	-40.08	-0.43	0.00	-63.46	-	-16.69

Liner regression analysis, independent: KOOS sports/rec

Our current concept for MPFLR

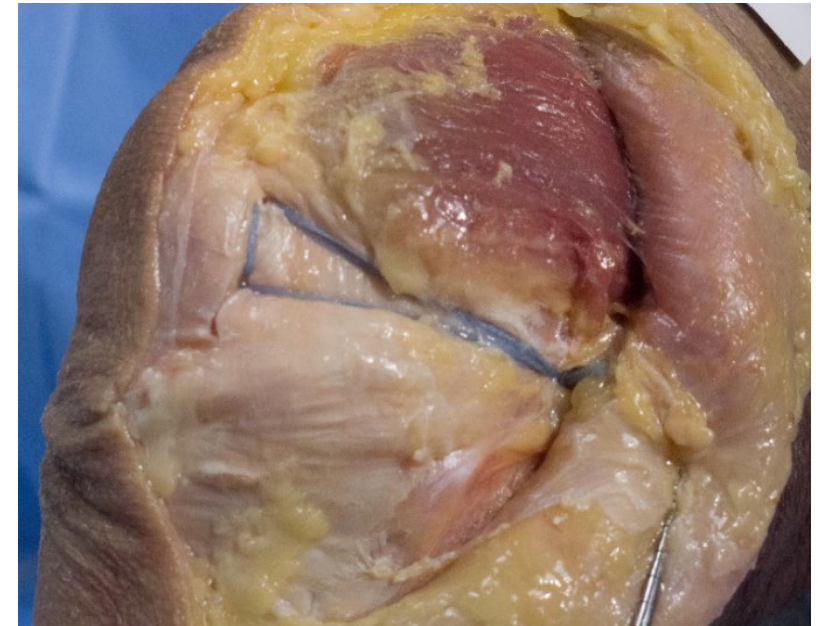
■ MPFLR using FiberTape and SwiveLock

- ◆ Minimally invasive
 - Avoidance of autograft harvest
- ◆ Strong initial fixation
- ◆ Few complications
 - Patella fracture

**Advantages for athletes
who returning to sports**

- ✓ Contraindication
 - Immature patients

➤ Tsushima T. JOS. 2019



Conclusions

- **The overall rate of RTS was 92.9%.**
- **The MPFLR using FiberTape and SwiveLock anchors was safe and effective for ability to RTS.**
- **Higher BMI, bilateral cases and patella alta resulted in lower KOOS sports activities scores in competitive athletes.**

References

- 1. Manjunath AK, Hurley ET, et al. AJSM 2021**
- 2. Ishibashi Y, Kimura Y, et al. Arthrosc Tech. 2020**
- 3. Sasaki E, Kimura Y, et al. Knee. 2022**
- 4. Tsushima T, Tsukada H, et al. JOS. 2019**
- 5. Sakamoto Y, Sasaki S, et al. Arthroscopy 2020**