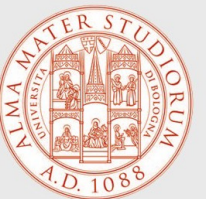


ACL + MCL INJURY MCL EVALUATION AND MANAGEMENT

PROF. STEFANO ZAFFAGNINI



II ORTHOPAEDIC & TRAUMA UNIT
RIZZOLI ORTHOPAEDIC INSTITUTE
UNIVERSITY OF BOLOGNA
BOLOGNA ITALY



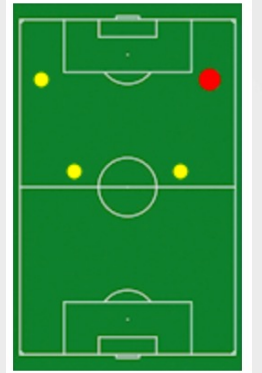
CASE 1

- 28 YEARS, SERIE A LEFT WING
- VALGUS/ER NON-CONTACT INJURY



CASE 1

- 28 YEARS, SERIE A LEFT WING
- VALGUS/ER NON-CONTACT INJURY



ACL

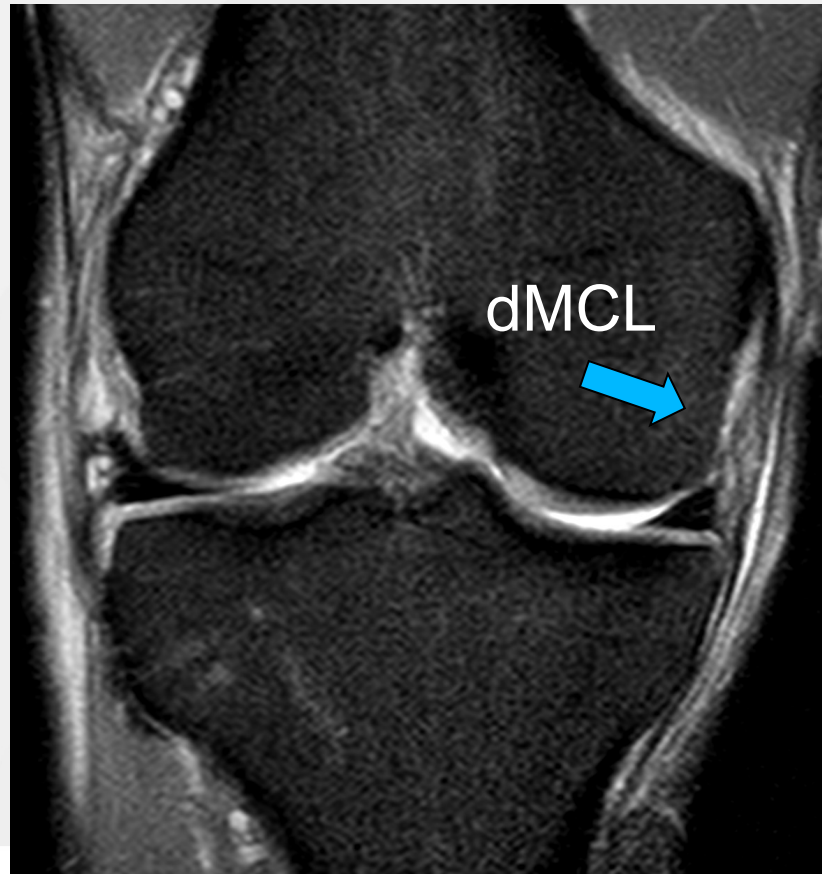


CASE 1

- 28 YEARS, SERIE A LEFT WING
- VALGUS/ER NON-CONTACT INJURY

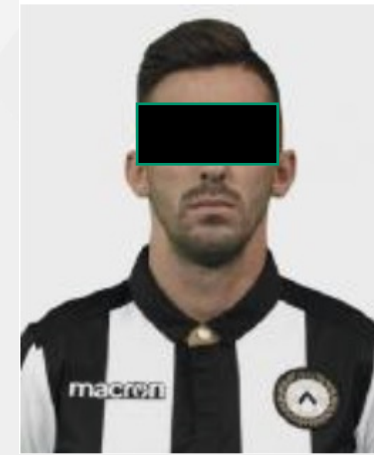


ACL
dMCL

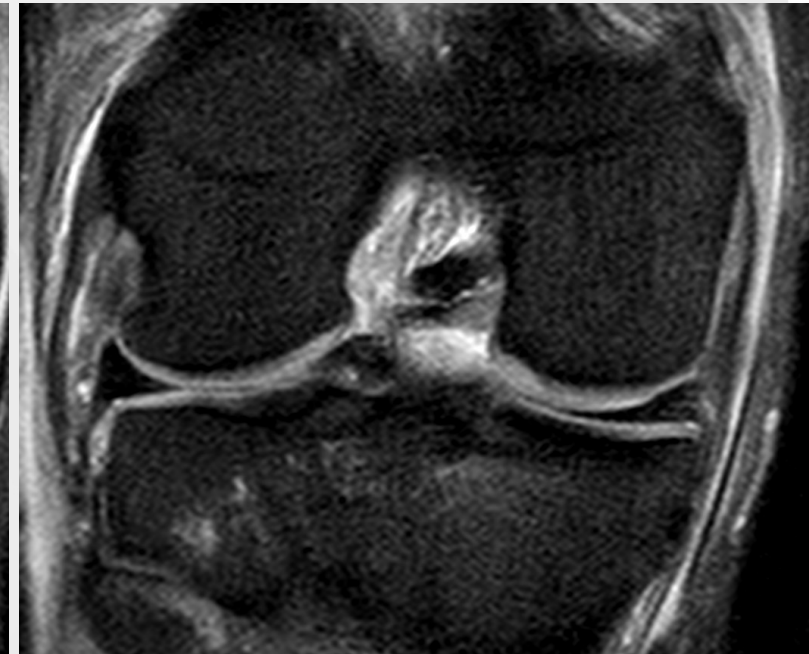
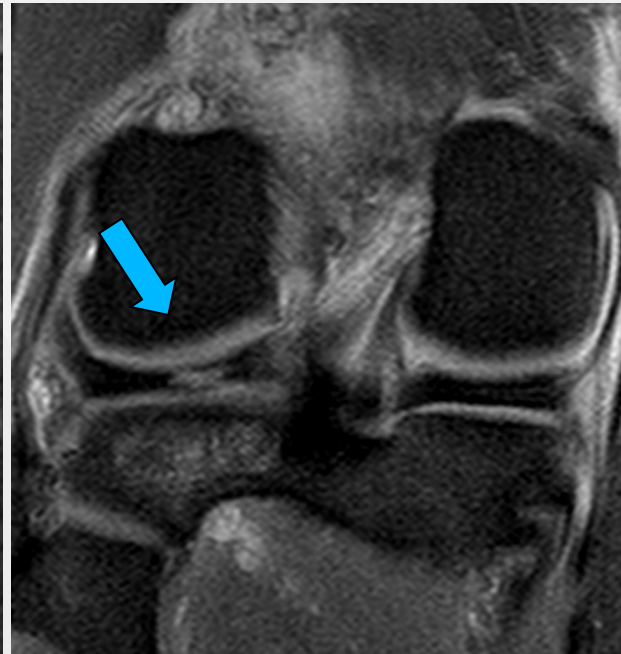


CASE 1

- 28 YEARS, SERIE A LEFT WING
- VALGUS/ER NON-CONTACT INJURY



ACL
dMCL
LM ROOT



CASE 1

WHAT WOULD YOU DO?

ACL

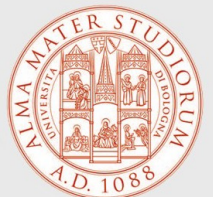
- BPTB
- HS
- QT
- LET
- No LET

LM ROOT

- REPAIR (HOW?)
- REMOVE
- LEAVE IT ALONE

dMCL

- REPAIR/ HUGHSTON
- RECONSTRUCT
INTERNAL BRACE
ALLOGRAFT
- NON-OP

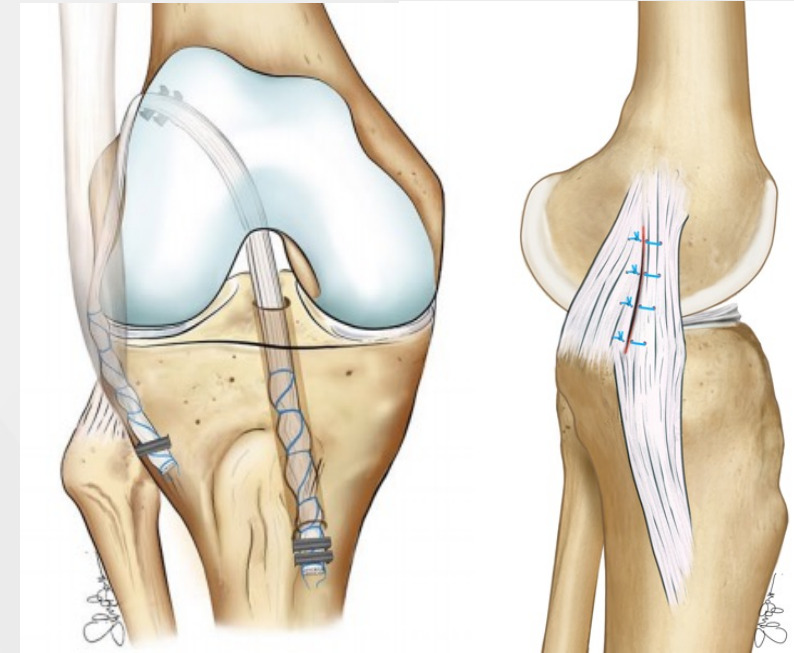


MY CHOICE

OVER THE TOP ACL + LATERAL TENODESIS (HS)

LATERAL MENISCUS ROOT SUTURE (ALL INSIDE)

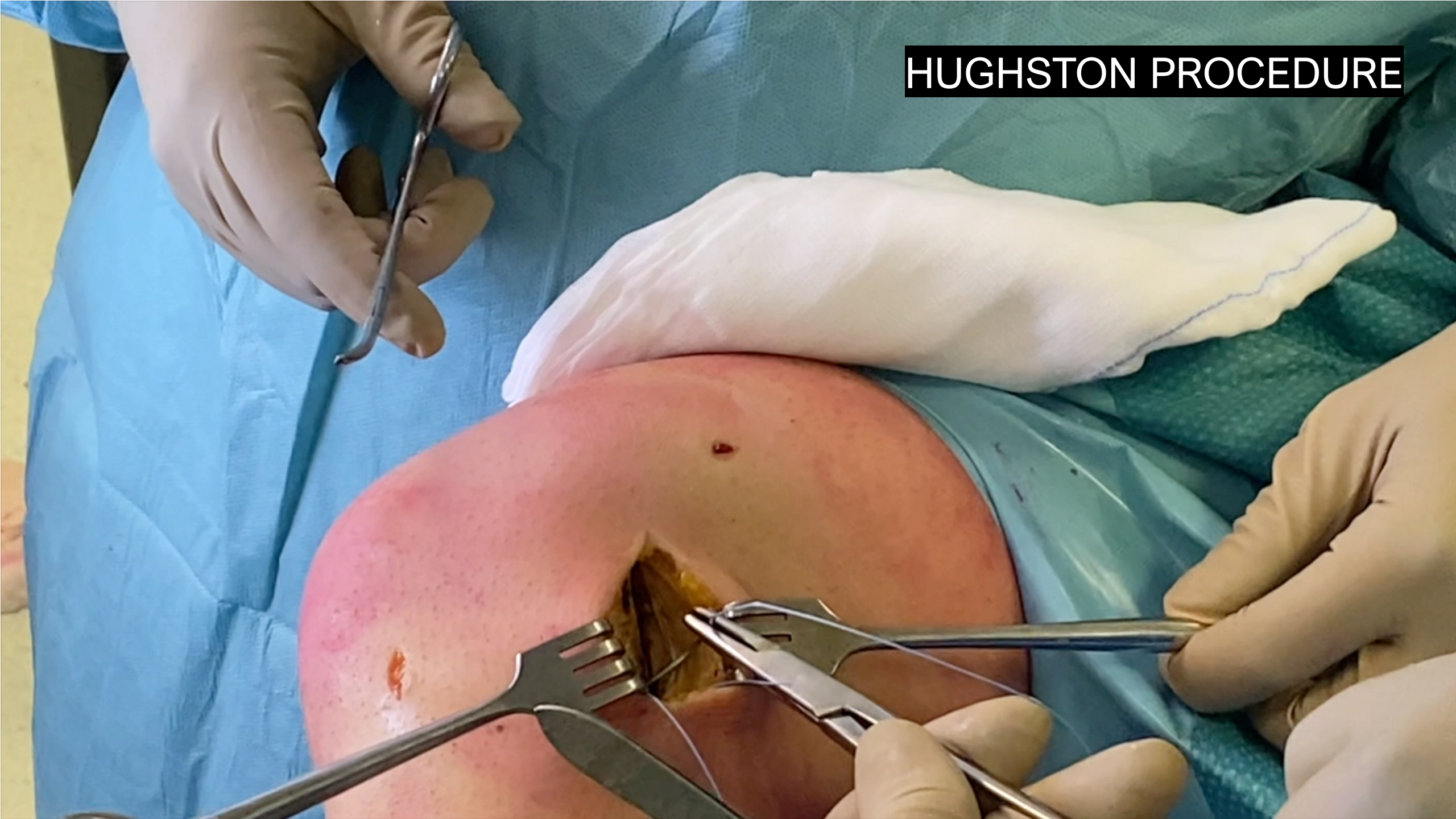
dMCL DISTAL REPAIR / HUGHSTON (SUTURE)





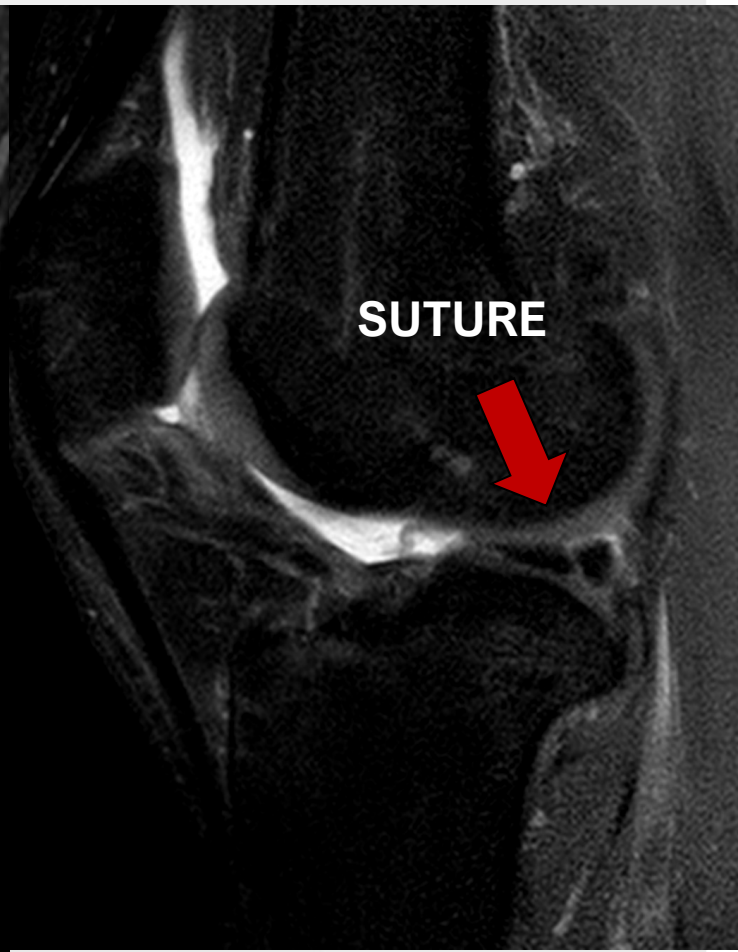
AFTER ACL-REC + LET

HUGHSTON PROCEDURE



MY CHOICE

3 MONTHS MRI



CASE 1

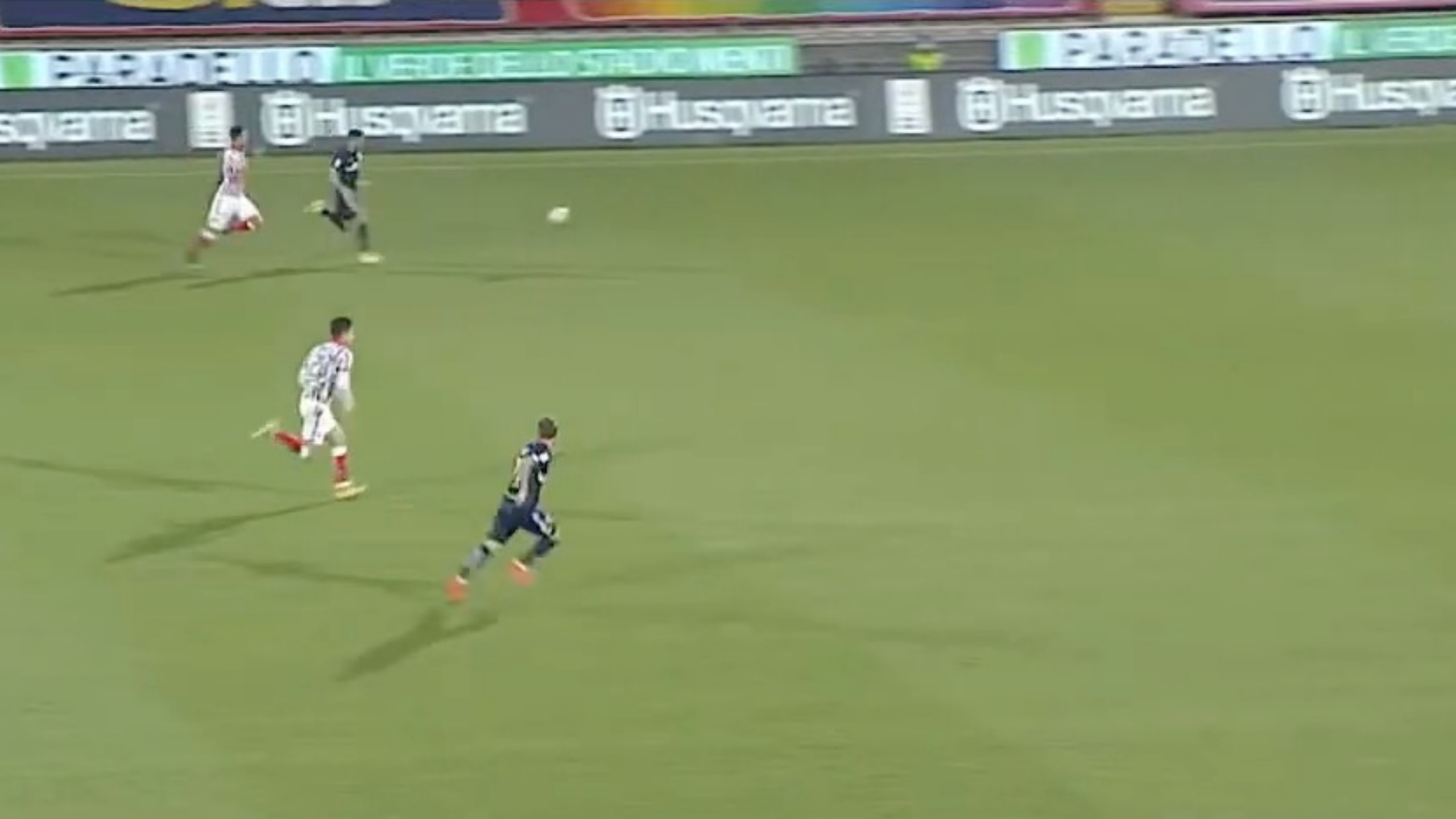
RETURN TO TRAIN:
5 MONTHS

FIRST OFFICIAL MATCH:
9 MONTHS

PROFESSIONAL LEVEL

Stagione	Squadra	Campionato			Coppe nazionali		
		Comp	Pres	Reti	Comp	Pres	Reti
2008-2009	 Roma	A	3	0	CI	0	0
2009-2010	 Grosseto	B	29	1	CI	1	0
2010-gen. 2011	 Bari	A	11	0	CI	2	1
gen.-giu. 2011	 Livorno	B	13	0	CI	-	-
2011-2012	 Verona	B	27+1 ^[30]	1	CI	2	2
2012-2013	 Cesena	B	32	2	CI	2	1
2013-2014		B	39+3 ^[30]	3	CI	2	0
Totale Cesena			71+3	5		4	1
2014-2015	 Atalanta	A	25	0	CI	2	0
2015-2016		A	23	3	CI	2	0
2016-2017		A	23	1	CI	3	0
2017-2018	 Benevento	A	16	1	CI	1	0
ago. 2018	 Atalanta	A	-	-	CI	-	-
Totale Atalanta			71	4		7	0
2018-2019	 Udinese	A	24	0	CI	0	0
2019-2020	 SPAL	A	15	2	CI	1	0
2020-gen. 2021		B	12	1	CI	1	0
Totale SPAL			27	3		2	0
gen.-giu. 2021	 Monza	B	16+2 ^[30]	1+1 ^[30]	CI	-	-
2021-2022		B	31+4 ^[32]	2+1 ^[32]	CI	1	0
2022-2023		A	8	0	CI	3	0
Totale Monza			55+6	3+2		4	0
2023-2024	 Pisa	B	6	0	CI	1	0
Totale carriera			353+10	18+2		24	4





CASE 2

26 YEARS OLD, SERIE A LEFT WING

VALGUS/ER LANDING



CASE 2

26 YEARS OLD, SERIE A LEFT WING

VALGUS/ER LANDING

ACL

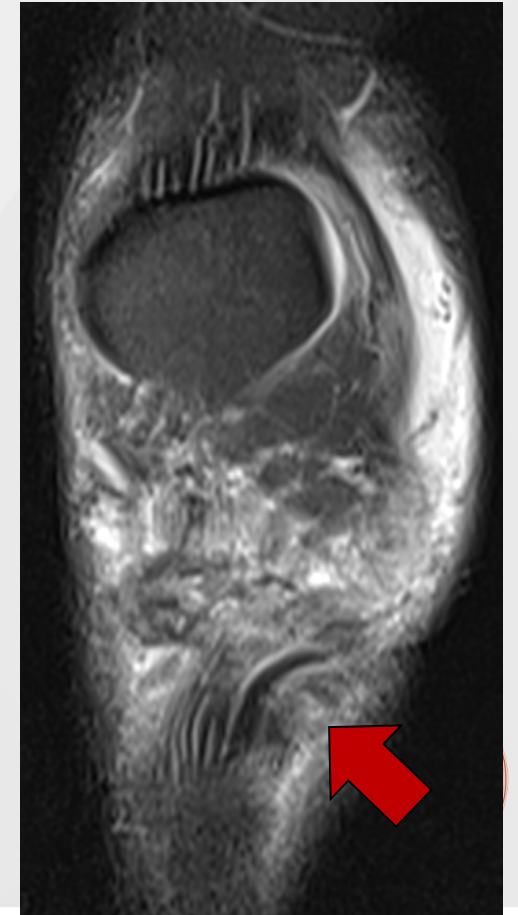
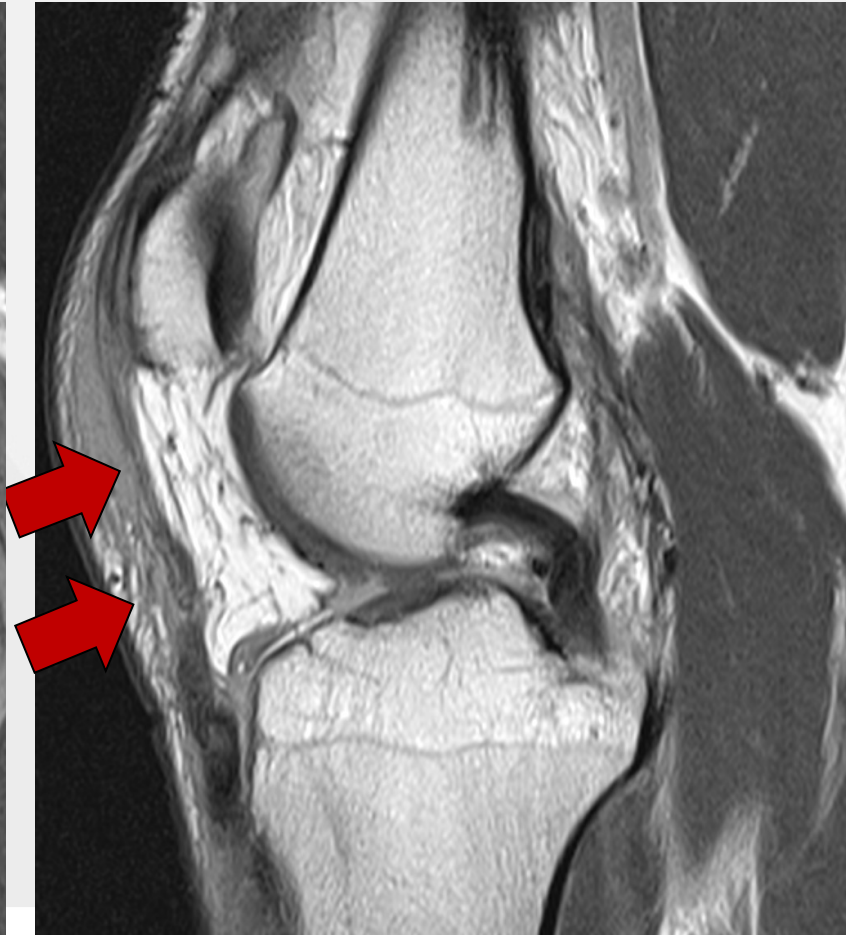


CASE 2

26 YEARS OLD, SERIE A LEFT WING

VALGUS/ER LANDING

ACL
PT



CASE 2

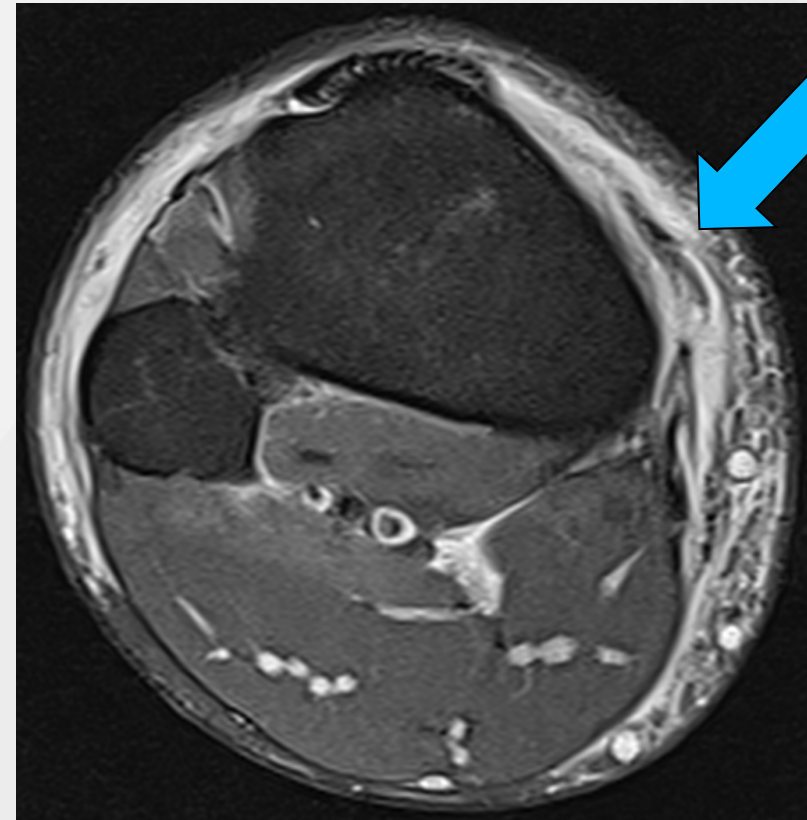
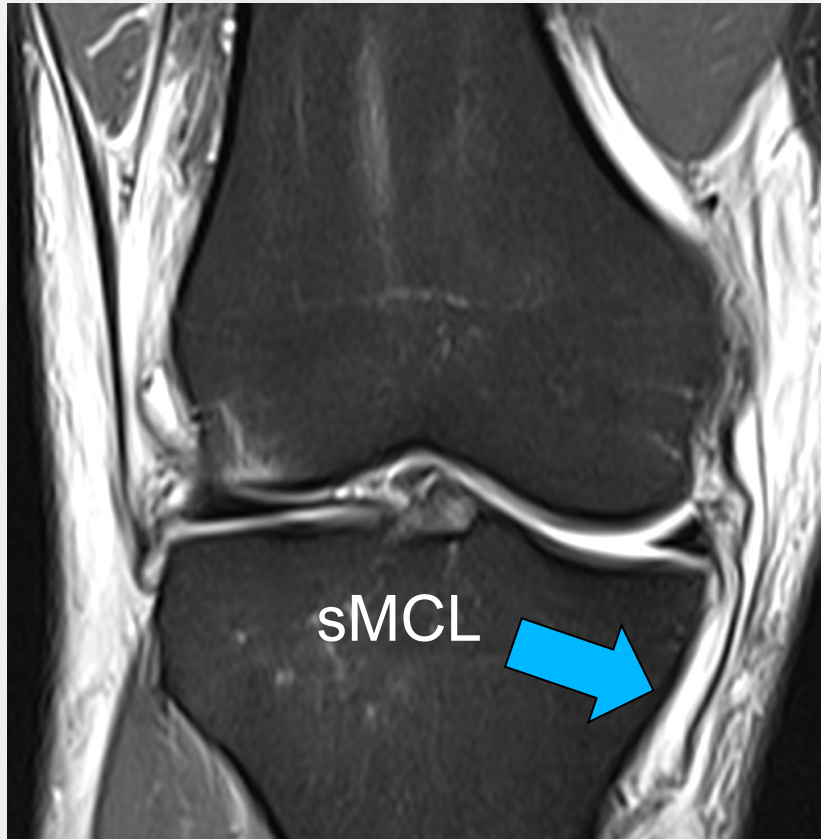
26 YEARS OLD, SERIE A LEFT WING

VALGUS/ER LANDING

ACL

PT

sMCL



CASE 2

26 YEARS OLD, SERIE A LEFT WING

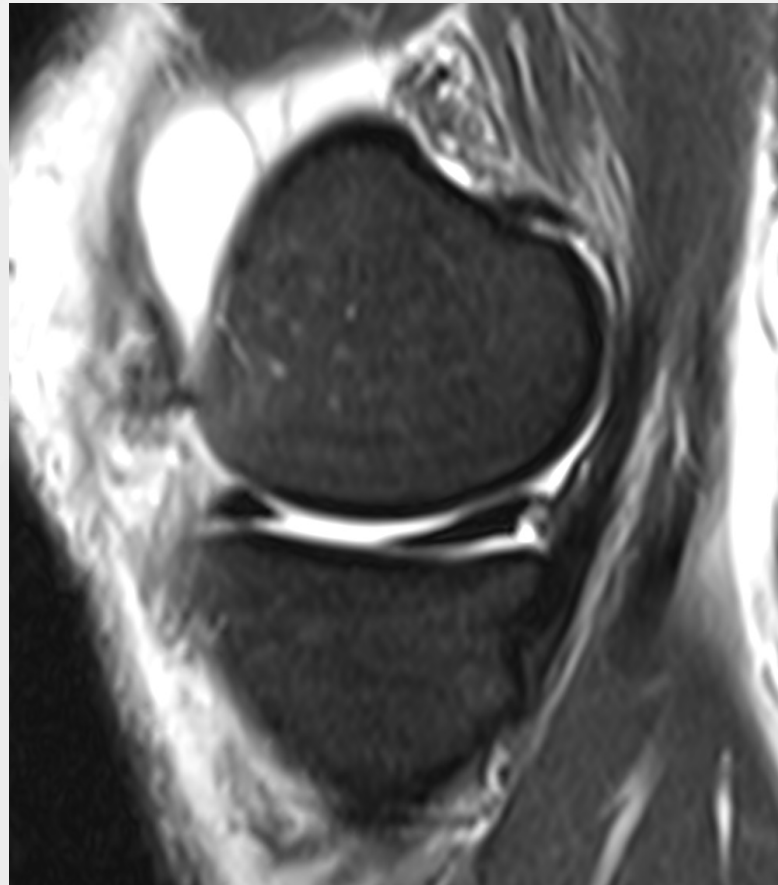
VALGUS/ER LANDING

ACL

PT

sMCL

MM RAMP





CASE 2

WHAT WOULD YOU DO?

- 1) ONE STAGE
- 2) TWO STAGES (PT + ??)

ACL

- HS
- QT
- LET
- No LET

PATELLAR TENDON

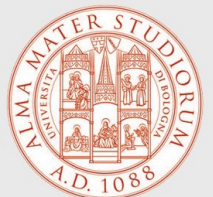
- REPAIR
- REPAIR + AUGMENT
- REPAIR + CERCALAGE

sMCL

- REPAIR (HOW?)
- REPAIR + AUGMENT
- RECONSTRUCT
- CONSERVATIVE

MM RAMP

- REPAIR (HOW?)
- LEAVE IT ALONE



MY CHOICE

END TO END PT REPAIR (HIGH RESISTANCE SUTURE)

OVER THE TOP ACL + LATERAL TENODESIS (HS)

MEDIAL MENISCUS RAMP SUTURE (ALL INSIDE)

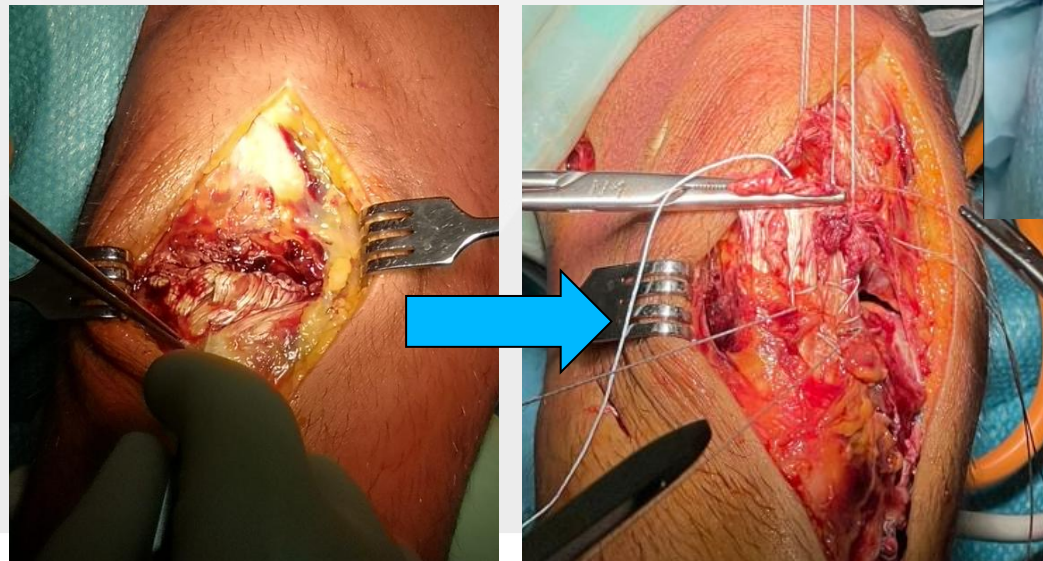
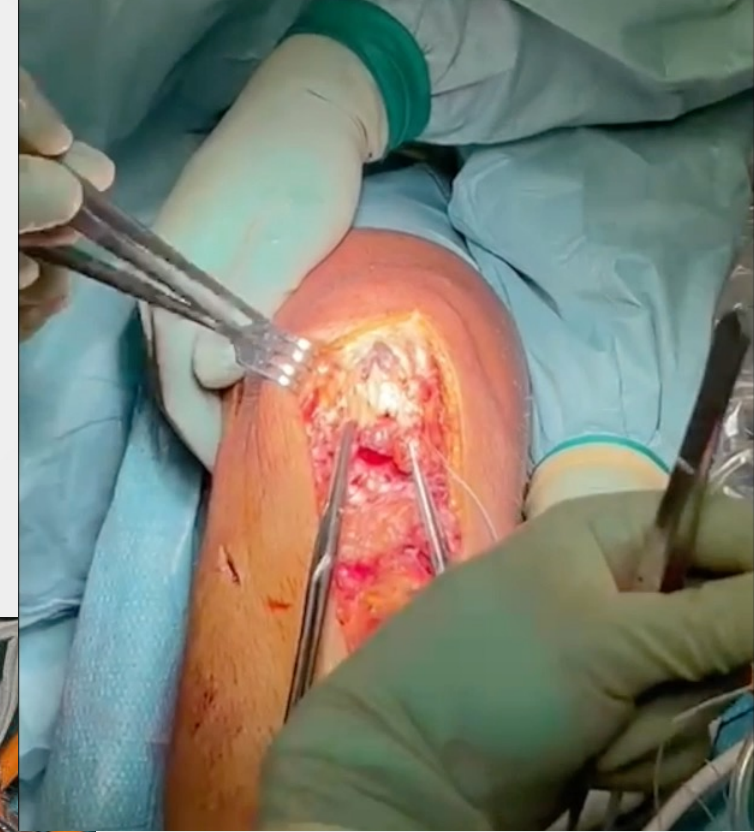
sMCL DISTAL REPAIR (ANCHOR + STAPLE)



MY CHOICE

END TO END PT REPAIR

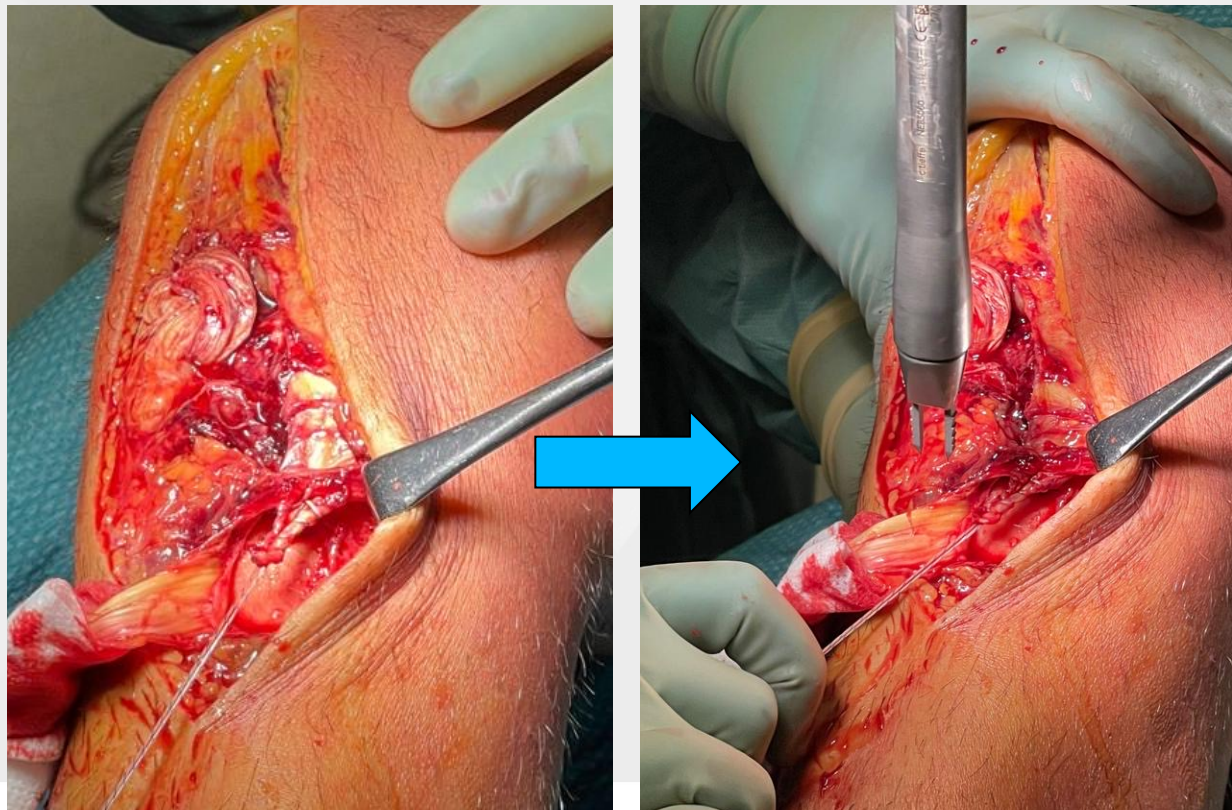
- HIGH RESISTANCE SUTURE
- NO SYNTETIC/BIOLOGICAL AUGMENTATION
- NO CERCALAGE



MY CHOICE

sMCL DISTAL REPAIR

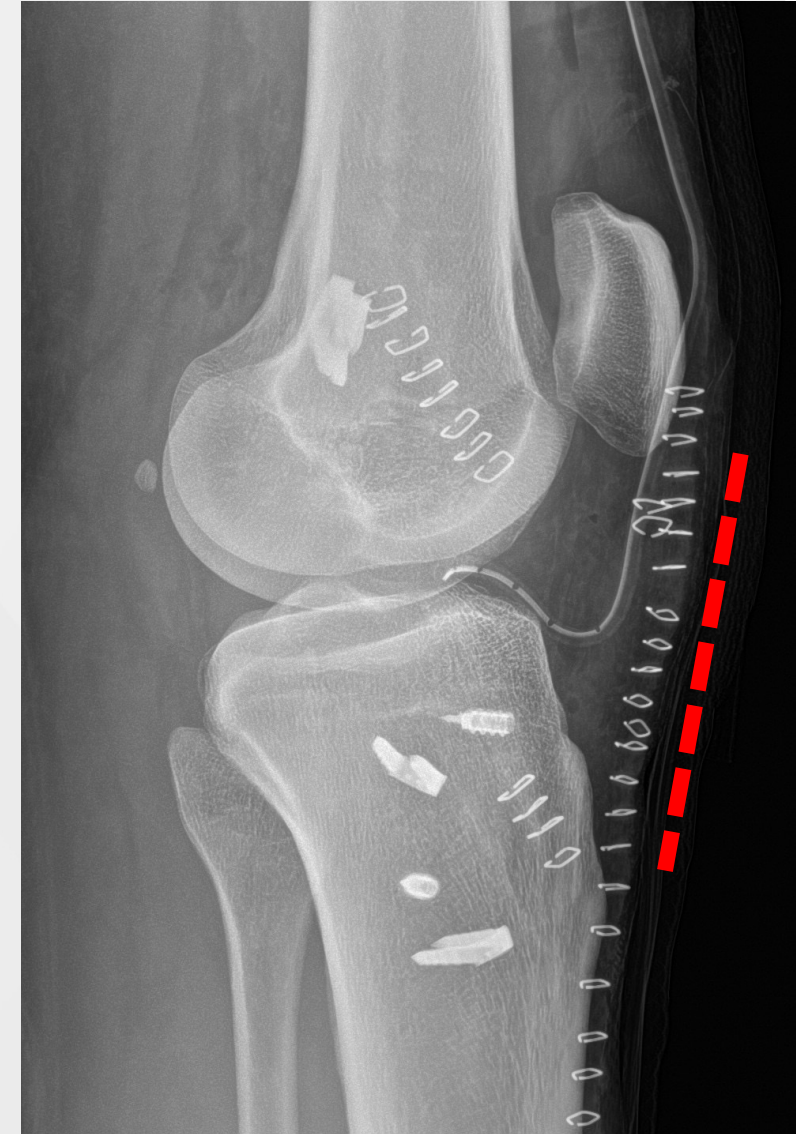
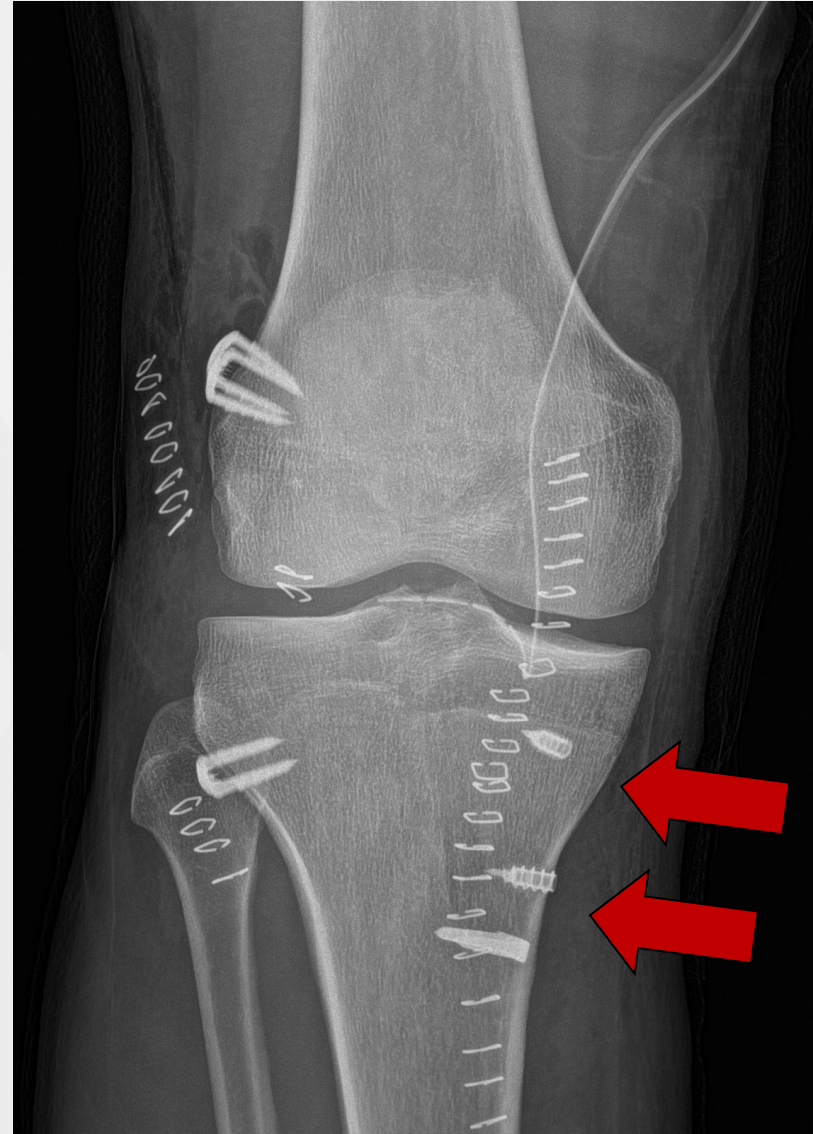
- ANCHORS
- STAPLE



MY CHOICE

sMCL DISTAL REPAIR

- ANCHORS
- STAPLE



MY CHOICE

7.5 MONTHS MRI



MY CHOICE

PREOP



7.5 MONTHS



CASE 2

Stagione	Squadra	Campionato			Coppe nazionali		
		Comp	Pres	Reti	Comp	Pres	Reti
2015-2016	 Torino	A	2	0	CI	0	0
2016-gen. 2017	 Venezia	LP	6	0	CI-LP	2	0
gen.-giu. 2017	 Parma	LP	2+6 ^[30]	0+1 ^[30]	CI-LP	-	-
2017-2018	 Torino	A	14	1	CI	3	1
2018-gen. 2019		A	3	0	CI	1	1
gen.-giu. 2019	 Bologna	A	4	0	CI	0	0
2019-2020	 Torino	A	13	1	CI	0	0
2020-gen. 2021		A	2	0	CI	2	0
gen.-giu. 2021	 Reggina	B	16	2	CI	0	0
2021-2022	 Torino	A	0	0	CI	0	0
2022-gen. 2023		A	0	0	CI	0	0
Totale Torino			34	2		6	2
gen.-giu. 2023	 Pordenone	C	10	1	CI-C	-	-
Totale carriera			78	6		8	2

RETURN TO TRAIN:
9 MONTHS

RETURN TO PLAY:
11 MONTHS

PROFESSIONAL LEVEL

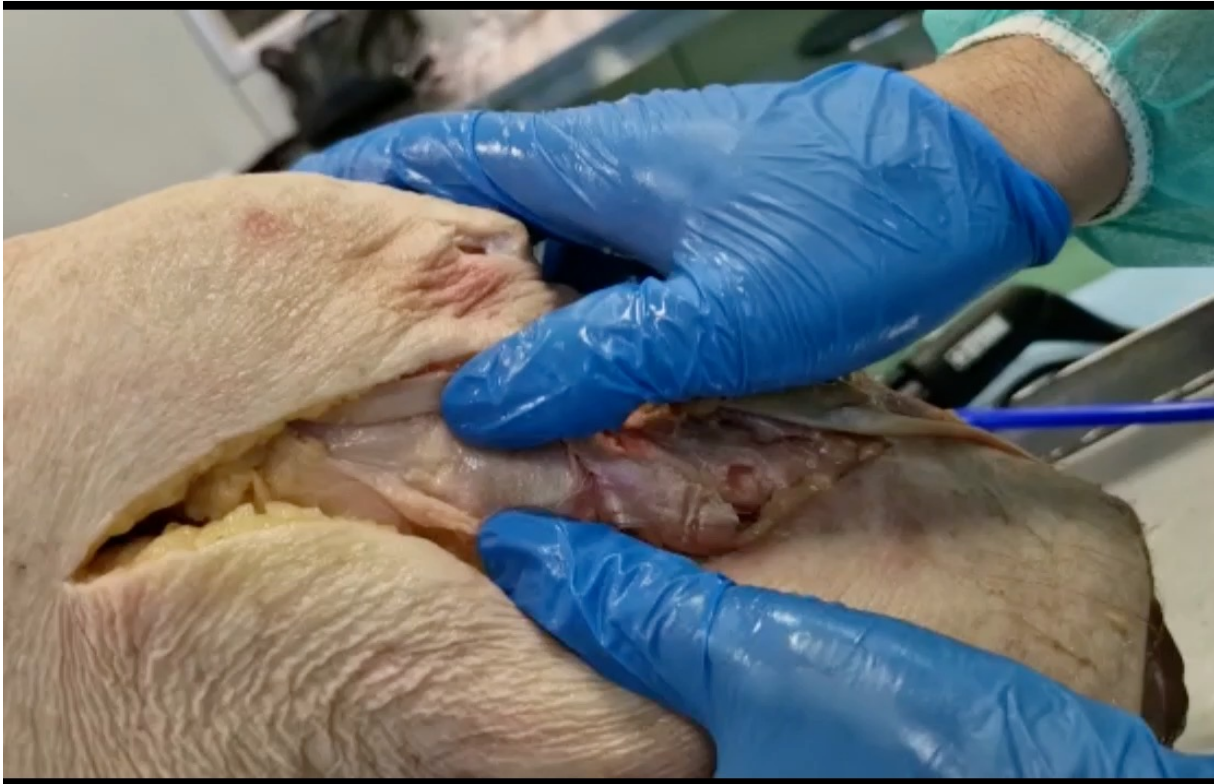


ANATOMY

POL NOT TENSIONED



ANATOMY



INTACT dMCL



SECTIONED dMCL



THE ROLE OF **EXTERNAL ROTATION** IN ACL INJURY MECHANISM

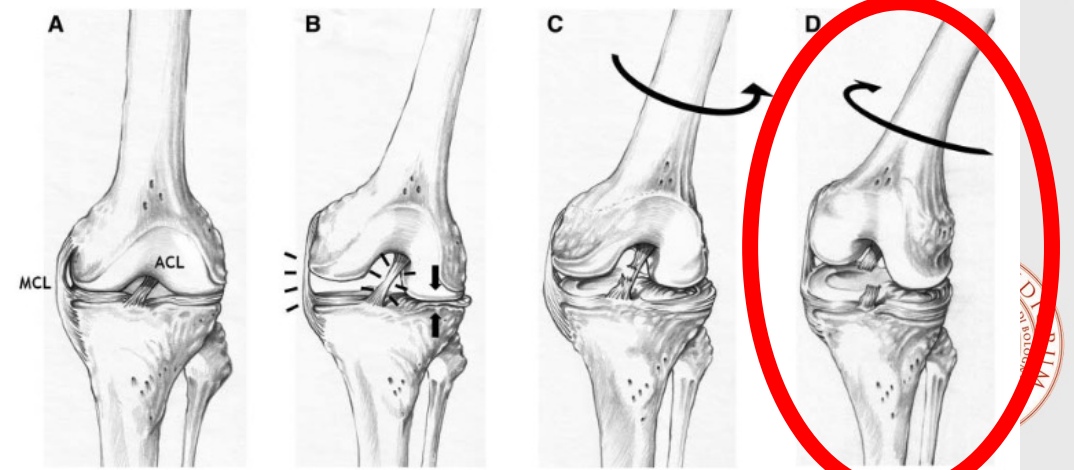
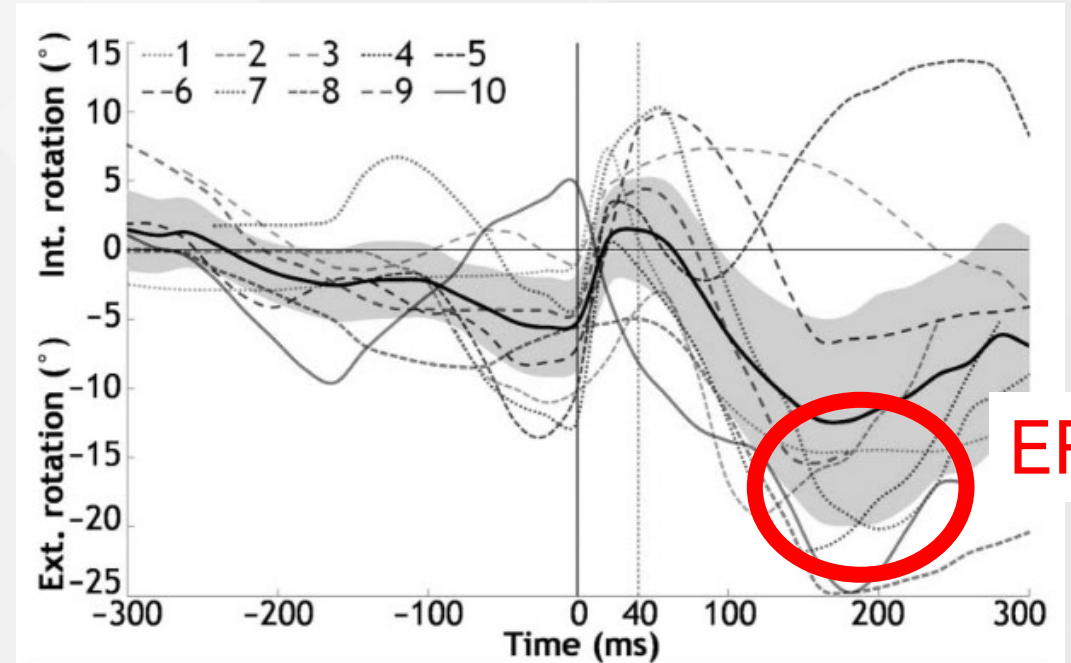
LATE PHASE ACL INJURY



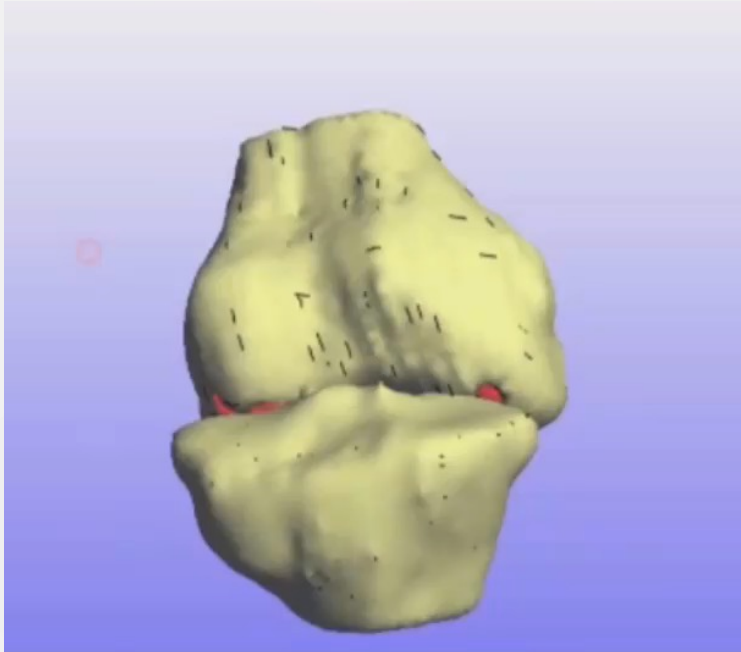
ABRUPT EXTERNAL ROTATION + ANTERIOR TRANSLATION

VALGUS STRESS LESS REPRESENTED

KOGA, AJSM 2010
KOGA, CLIN S MED 2016



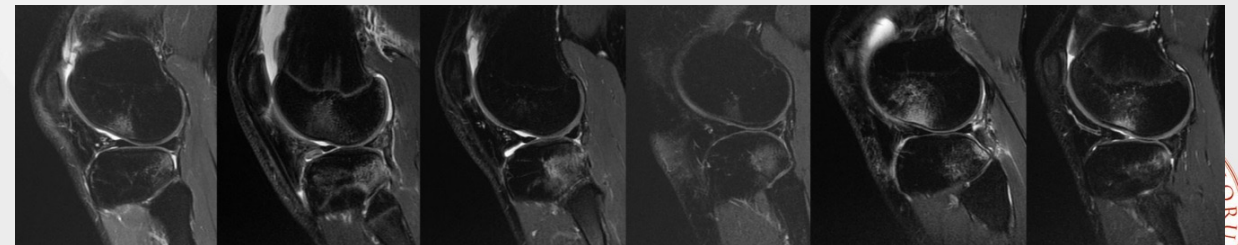
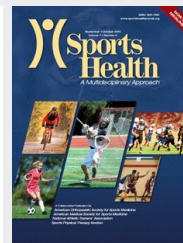
THE ROLE OF EXTERNAL ROTATION IN ACL INJURY MECHANISM



TIBIAL SUBLUXATION
BONE CONTUSION
MENISCAL INJURY

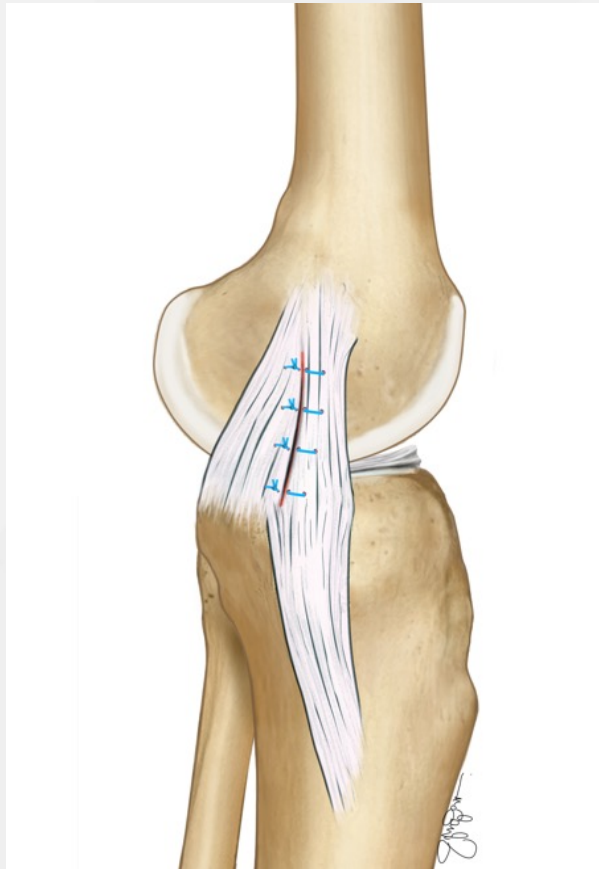
Rapid Posterior Tibial Reduction
After Noncontact Anterior Cruciate
Ligament Rupture: Mechanism
Description From a Video Analysis

Alberto Grassi, MD,[†] Filippo Tosarelli, MD,[‡] Piero Agostinone, MD,[†] Luca Macchiarola, MD,^{*†}
Stefano Zaffagnini, Prof,[†] and Francesco Della Villa, MD[‡]

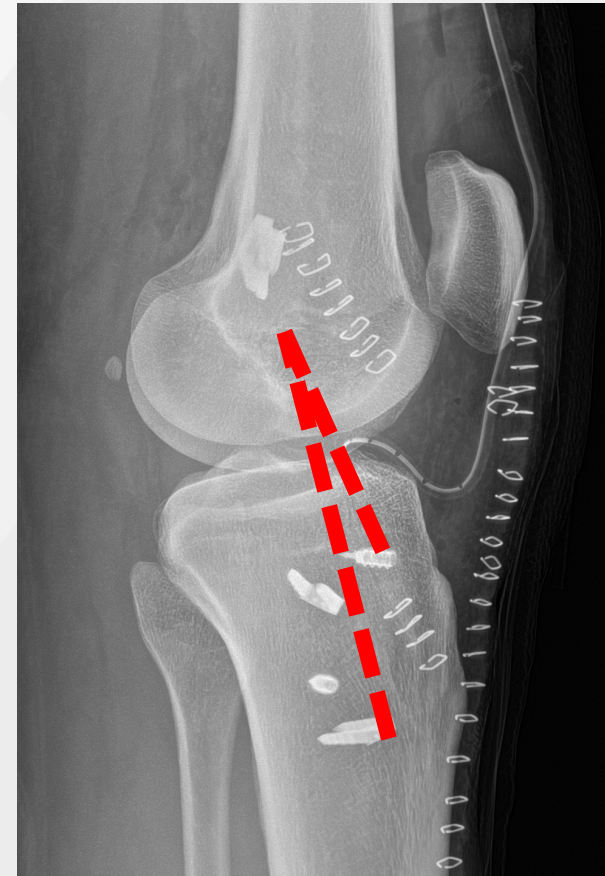


THE ROLE OF EXTERNAL ROTATION IN ACL INJURY MECHANISM

SURGICAL APPROACH



**POSTERO-ANTERIOR
REINFORCEMENT**



**POSTERO-ANTERIOR
DIRECTION**

MY EXPERIENCE WITH HUGHSTON TECHNIQUE

CASE-CONTROL STUDY

35 ACL + MCL grade II → OTT+LET & HUGHSTON

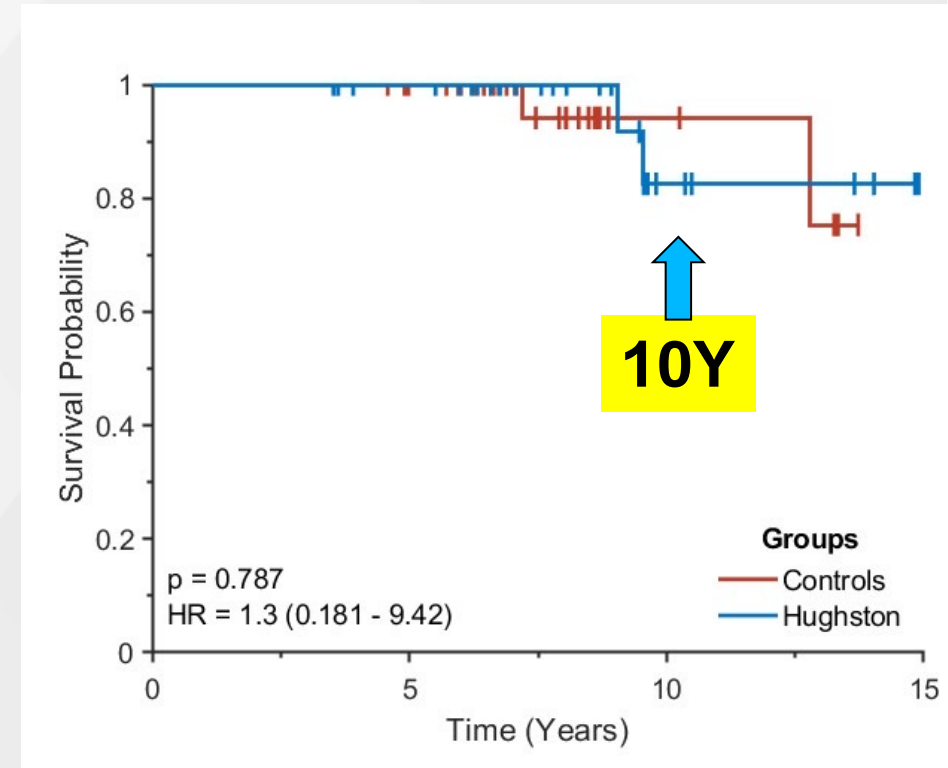
35 ACL → OTT + LET

8 +/- 2,7 Y MEAN FOLLOW-UP

SAME GOOD PROMs

SAME FAILURE RATE (5,7%)

1 REOPERATION FOR STIFFNESS (HUGHSTON GROUP)



ZAFFAGNI, GRASSI, LUCIDI PRELIMINARY DATA



CONCLUSIONS

ANATOMY AND BIOMECHANICS FIRST

ADDRESS EVERY LESIONS PROPERLY

HUGHSTON TECHNIQUE IS EASY AND SAFE

GOOD RESULTS ARE POSSIBLE





Thank you