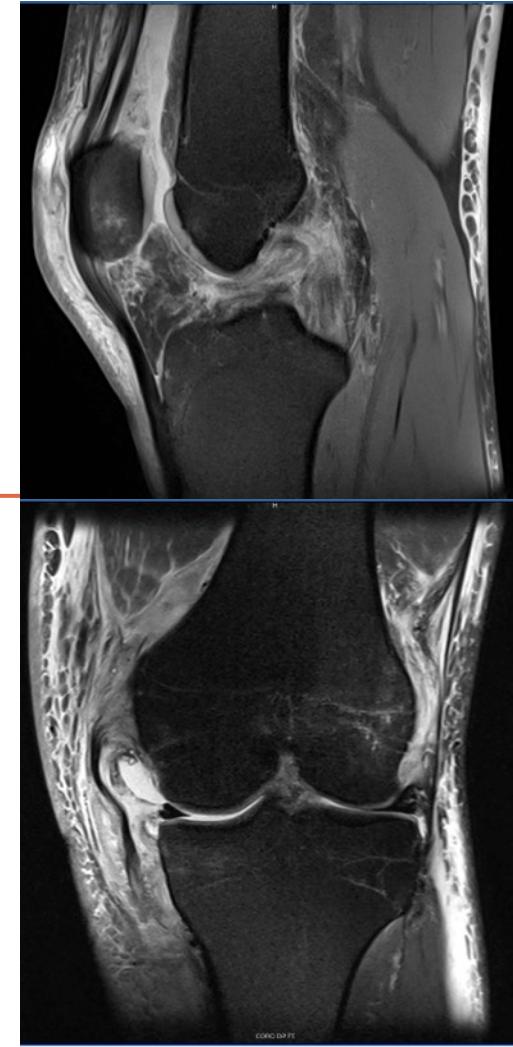


Associated lesions and multiligament knee injury

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Why associated Intraarticular lesions?

- Incidence 0,02 to 0,2%
- Definition:
 - $\geq 2 / 4$ Torn ligaments
 - Bicruciate + collateral = Dislocation
 - ~ 30% Neurovascular lesions
 - ~ Other lesions ???
 - (Meniscus/ Cartilage)

Anatomic Classification of Knee Dislocations		
Schenck 1992		
I	single cruciate + collateral	ACL + collateral
		PCL + collateral
II	ACL / PCL	collaterals intact
III M	ACL / PCL / MCL	LCL+PLC intact
III L	ACL / PCL / LCL+PLC	MCL intact
IV	ACL / PCL / MCL / LCL+PLC	
V	fracture dislocation	
C	arterial injury	
N	nerve injury	



Major associated injuries

- Skin
- Peroneal nerve
- Vessels



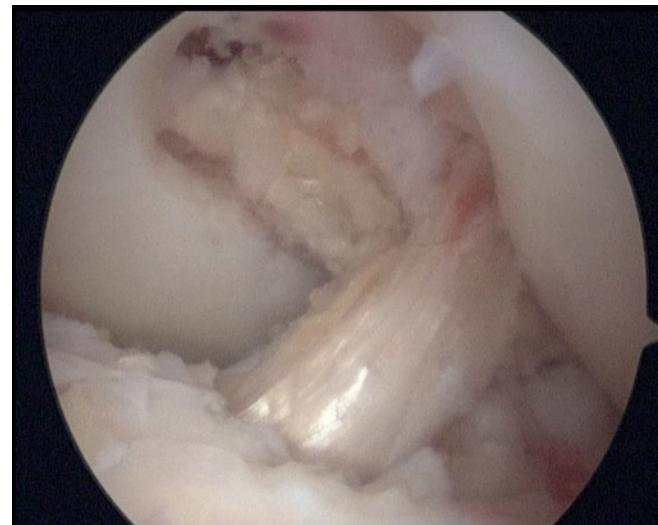
Strategy

- Clinical examination
- MRI
- Angio MRI or CT



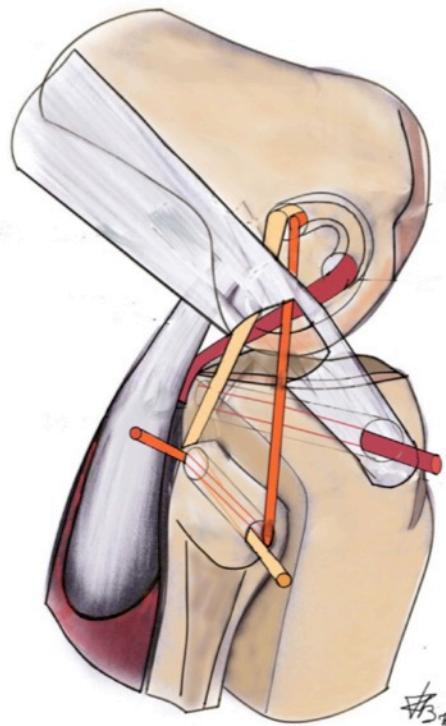
Strategy

- Arthroscopy
- **Treatment of All chondral and meniscal lesions+++**
- Anatomic reconstruction of ACL/PCL, Allograft or Autograft, Independent tunnels



Collateral ligament reconstruction

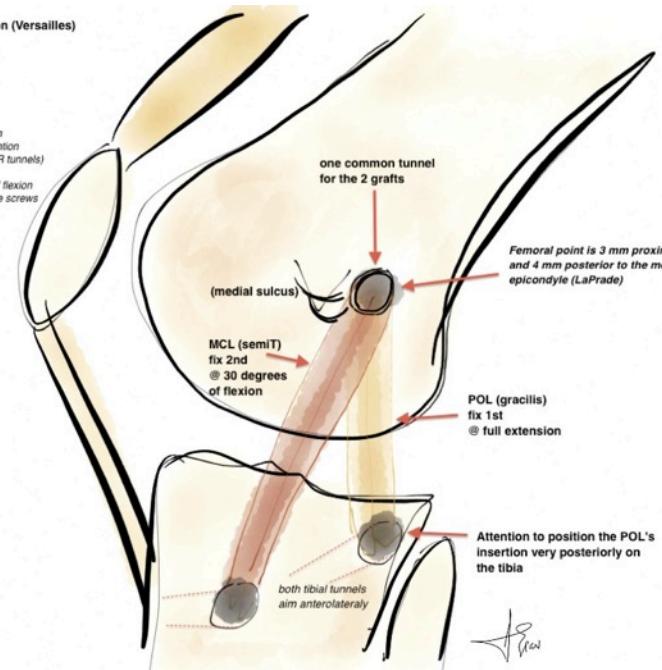
- Acute: repair + augmentation
- Chronic: reconstruction



Chronic MCL reconstruction (Versailles)

with hamstrings autograft

1. Graft harvesting
 - BPTB for ACLR
 - Hamstrings for MCLR
2. Arthroscopic ACL reconstruction
3. Open MCL reconstruction (attention not to interfere with previous ACLR tunnels)
4. Fix POL first at full extension and MCL second at 30 degrees of flexion with accordingly-sized interference screws



Murgier J, Boisrenoult P, Steltzlen C, Beaufils P, Pujol N. Anatomical knee postero-lateral corner reconstruction: The “Versailles” technique. OTSR. 2017



Epidemiology



ACL



KD 1 to 4

Meniscus 20 to 50 %

37,3% to 56%

Cartilage 20 to 45 %

28,3% to 40%

Beynnon JBJS Am 2009
Pinczewski J Bone joint 2013

Engebretsen OJSM 2017
Levy KSSTA 2015



Epidemiology

Demographics and Injuries Associated With Knee Dislocation

A Prospective Review of 303 Patients

Gilbert Moatshe,^{*†‡§} MD, Grant J. Dornan,[†] MSc, Sverre Løken,^{||} MD, PhD, Tom C. Ludvigsen,^{||} MD, Robert F. LaPrade,^{†¶} MD, PhD, and Lars Engebretsen,[‡] MD, PhD

The Orthopaedic Journal of Sports Medicine, 5(5), 2325967117706521

DOI: 10.1177/2325967117706521

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- Meniscus injuries:
- No difference if High energy trauma
- No difference if Acute Vs Chronic
- Bimenisical lesions: 5% (ACL=5%)



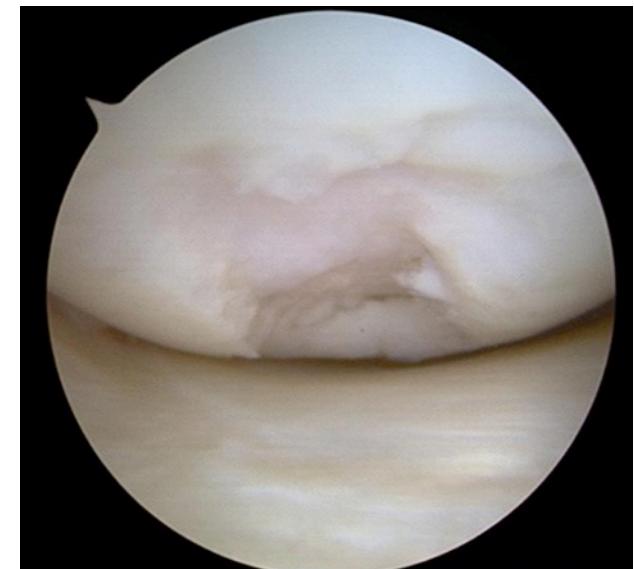
Epidemiology

Diagnosis and treatment of multiligament knee injury: state of the art

Gilbert Moatshe,^{1,2,3} Jorge Chahla,^{2,4} Robert F LaPrade,^{2,5} Lars Engebretsen^{1,3}

Moatshe G, et al. *JISAKOS* 2017;0:1–10. doi:10.1136/jisakos-2016-000072. Copyright © 2017 ISAKOS

- Chondral injuries:
- More if High energy trauma
- More if chronic lesions (40% Vs 20%)
- Association meniscus/Cartilage++





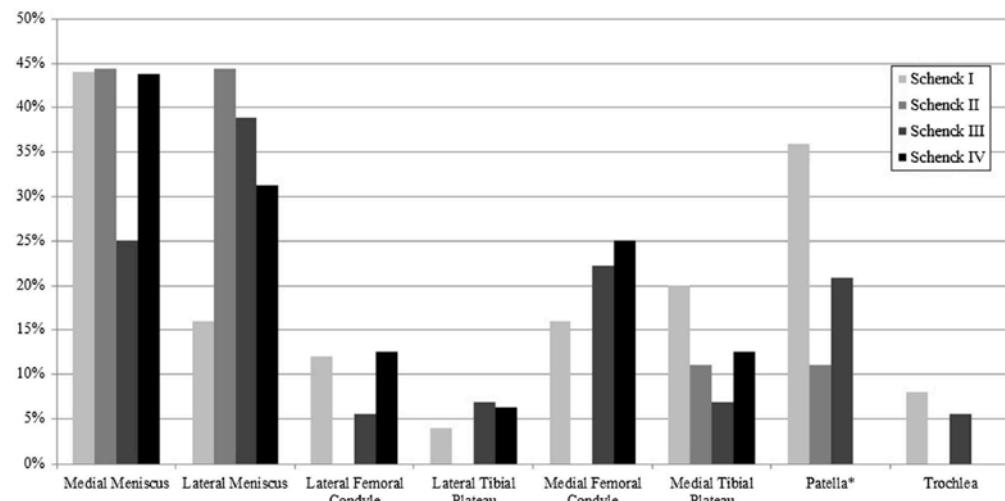
KNEE

Meniscal tears and articular cartilage damage in the dislocated knee

Aaron J. Krych · Paul L. Sousa · Alexander H. King ·
William M. Engasser · Michael J. Stuart ·
Bruce A. Levv

Epidemiology

- Depending on the type of KD?
- No difference



Are meniscal tears and articular cartilage injury predictive of inferior patient outcome after surgical reconstruction for the dislocated knee?

Alexander H. King¹ · Aaron J. Krych¹ · Matthew R. Prince¹ · Paul L. Sousa¹ · Michael J. Stuart¹ · Bruce A. Levy¹

Results: literature

Structure	N	IKDC score
Cartilage		
Lesion	38	64 (15–99)
No lesion	57	74 (12–100)
Meniscus		
Tear	53	69 (12–100)
No tear	42	71 (19–100)
Cartilage and meniscus	17	63 (15–99)

Structure	IKDC score	p value
<i>Meniscus</i>		
Medial		n.s.
Lateral		n.s.
Combined		0.02*
<i>Articular cartilage</i>		
Medial		0.03*
Lateral		n.s.
<i>Patellofemoral</i>		
Patella		n.s.
Trochlear		0.03*



Results: our series

- One series with KD3/4 lesions and Reconstruction by autograft
- N= 39
- 14 meniscal lesions
- Suture + Partial meniscectomy 100% cases (MM)
- 2 Root tears (MM)
- One series of KD3/4 lesions and reconstruction by allografts
- N= 23
- 12 meniscal lesions
- 100% suture
- 3 roots MM

Knee Surg Sports Traumatol Arthrosc
DOI 10.1007/s00167-016-4067-4

KNEE

Clinical outcomes after multiligament injured knees: medial versus lateral reconstructions

N. Tardy¹ · P. Boisrenoult¹ · P. Teissier¹ · C. Steltzien¹ · P. Beaufils¹ · N. Pujol¹



J. Billières, N. Pujol
AJSM 2018
In press



Results: our series

- One series with KD3/4 lesions and Reconstruction by autograft
- N= 39
- 14 meniscal lesions
- Suture + Prolene meniscus only 100% cases (MM)
- 2 Root tears (MM)

- One series of KD3/4 lesions by autografts
- 12 meniscal lesions
- 100% suture
- 3 roots MM

J. Billières, N. Pujol
AJSM
In press

Knee Surg Sports Traumatol Arthrosc
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KNEE

Clinical outcomes after multiligament injured knees: medial versus lateral reconstructions

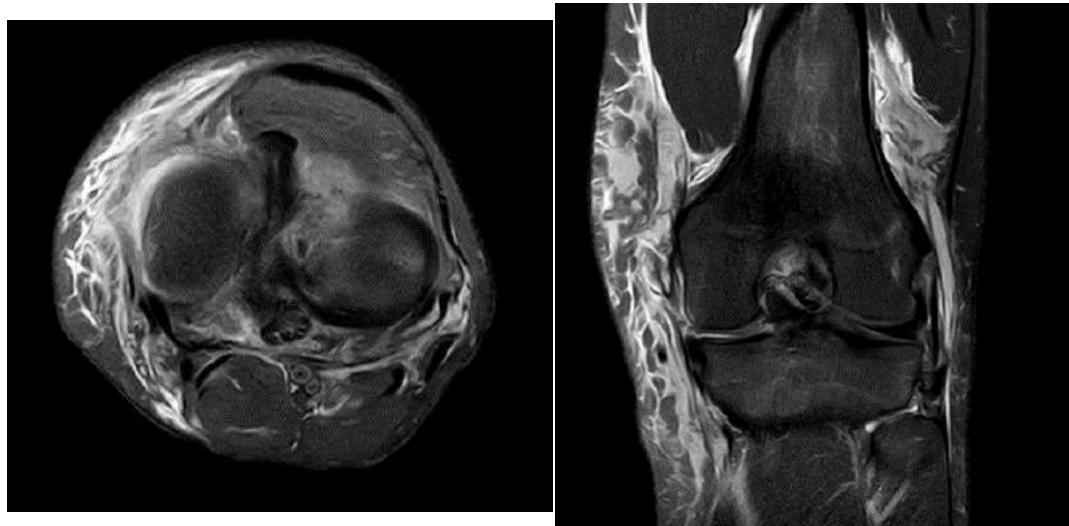
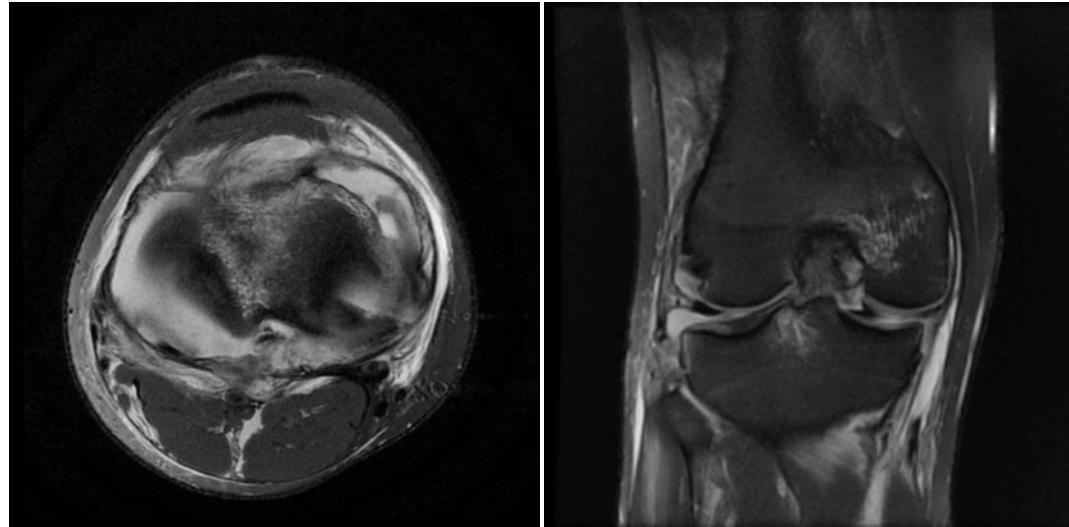
N. Tardy¹ · P. Boisrenoult¹ · P. Teissier¹ · C. Steltzlen¹ · P. Beaufils¹ · N. Pujol¹



Type of lesions

DIFFERENT +++++

- Radial tears
- Medial meniscus
- Complex lesions
- Root tears



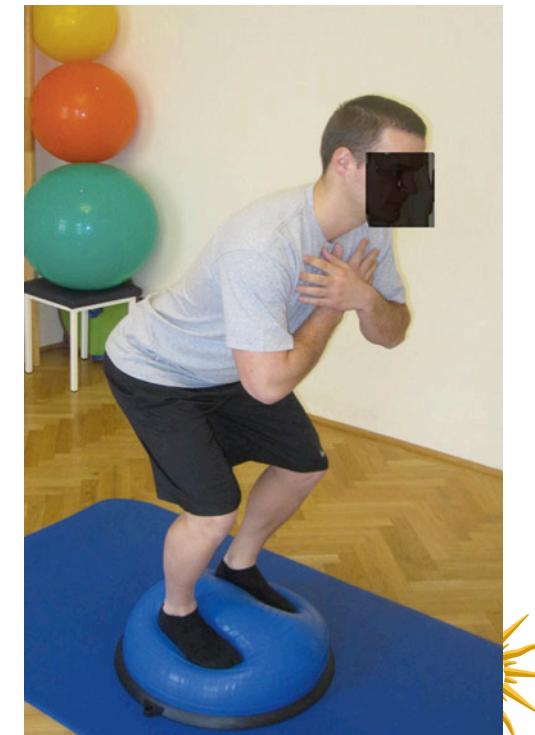
Type of lesions

- Radial tears
- Root tears
- Medial meniscus ++
- 9%



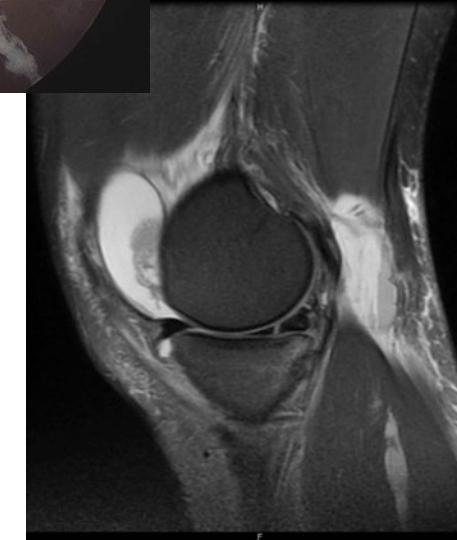
Rehabilitation

- No weightbearing 6 w
 - Hinge brace 3 months
 - Quad, Hamstrings
 - Range of motion++
 - Early rehabilitation
-
- Avoid arthrofibrosis



Conclusion

- Lot of associated lesions++
- Meniscus
- Cartilage
- Treatment: ALL during the same surgery
- Rehabilitation: Same protocol
- No difference at FU



Merci de votre attention





The Meniscus

2019

4th International Meeting

BOLOGNA

31 January to 2 February
Royal Hotel Carlton

