

Multiple Ligament Injuries Symposium



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4th Advanced Course on Knee Surgery
Val d' Isere , France January 24, 2012

Overview of Symposium

- The entire day is dedicated to the treatment of this complex injury
- Our lectures will cover principles of evaluation and a spectrum of operative and non operative treatments

Overview of Symposium

- Twenty-two faculty from Europe, Japan, and the USA
- There will be some conflict of opinions!
- Remember ***“nothing is so bad that it cannot be made worse by surgery”***
- Treatment decisions are based on more than MRI findings!

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Multiple Ligament Knee Injuries Rationale and Classification

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Multiple Ligament Injuries

Overview

- Definition of the injury

It is not just a dislocated knee!

- Principles of initial evaluation
- *Simple* classification scheme
- Case examples



Multiple Ligament Injuries

Definition

Spectrum of Injury

• Single cruciate (ACL or PCL) + Collateral (s) → Bicruciate + Collateral "dislocated"

- Ligaments can be partially injured (G I or II) and can heal (especially MCL and PCL)!

Every knee is different!

Multiple Ligament Injuries

Evaluation


Combined Injuries
↓
Physical Exam



Multiple Ligament Injuries

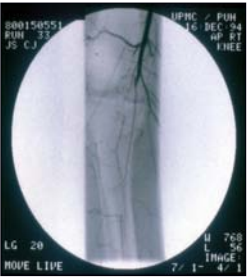
Evaluation Protocol

Combined Injuries
↓
Physical Exam
↓
X-rays




Evaluation Protocol

Combined Injuries
↓
Physical Exam
↓
X-rays
↓
Vascular studies



Evaluation Protocol

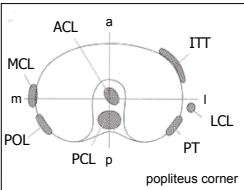

Combined Injuries
↓
Physical Exam
↓
X-rays
↓
Vascular studies
↓
MRI
↓
Classify injury



Multiple Ligament Injuries

Injury Classification

- Timing
 - Acute vs chronic
- Anatomical (Gr I-II)
 - Cruciates
 - Collaterals
 - Meniscus
- Associated injuries
 - Tendon
 - Bone
 - Neurovascular


Multiple Ligament Injuries

CDH Operative Experience 2009-10

37 Cases

1. PCL/PLC (10)
2. ACL/MCL (10)
3. ACL/PCL/PLC (+ LCL)
4. ACL/PCL/MCL
5. ACL/lat corner (5)
6. PCL/MCL (2)

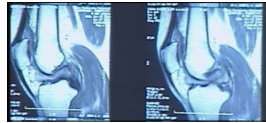
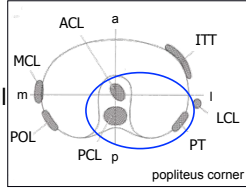
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Dislocated Knee

Case Example

- 25 y/o male
- Hx: anterolateral knee dislocate playing volleyball (6 wks)
- **Dx: Semi acute Gr III ACL/PCL/PLC (LCL ok)**
- Neurovascular intact
- Full ROM



EUA

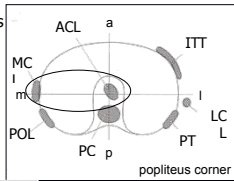


Gr III ACL/PCL/PLC (LCL intact)

ACL/MCL

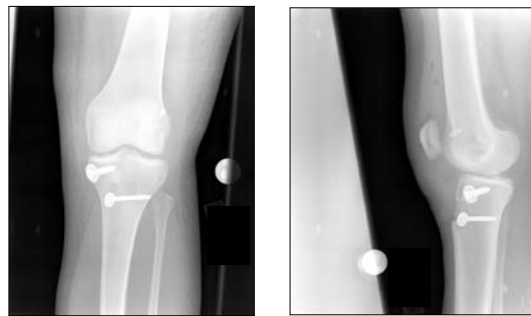
Case Example

- 19 year old college football player 3 days post injury
- **Acute Gr III ACL/MCL (tibial side)**
- Plan: 1. Brace and delay 4-6 weeks
2. ACL recon BTB auto
MCL repair (deep/superficial)



ACL/MCL

Case Example



Post op X-Rays

ACL/MCL

Case Example



3 month post op BTB auto & MCL repair (tibial)

ACL/MCL

Case Example



3 Month post op

ACL/PCL/MCL

Case Example

- 19 y/o college wrestler
- Twisting injury, dislocated knee
- Transferred to hospital → relocated/arteriogram/splinted
- Office visit: One week after injury
NVI/knee reduced
- **Dx: Acute Gr III ACL/MCL/Gr II PCL**

ACL/PCL/MCL

Case Example



ACL/PCL/MCL

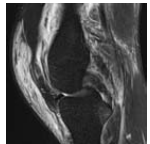
Case Example



Proximal MCL tear



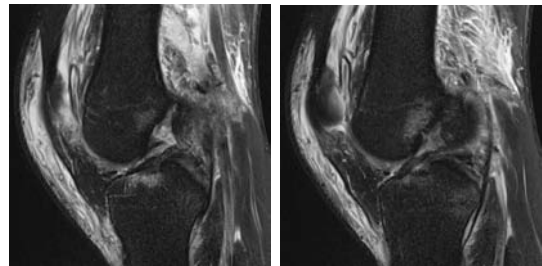
LCL ok



High-grade partial PCL tear

ACL/PCL/MCL

Case Example



Complete ACL Tear

ACL/PCL/MCL

Case Example



One week post injury



ACL/PCL/MCL

Case Example

Brace in full extension for 3-4 weeks

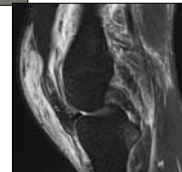


Surgery at 6-8 weeks

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Exam under anesthesia will determine what I do!



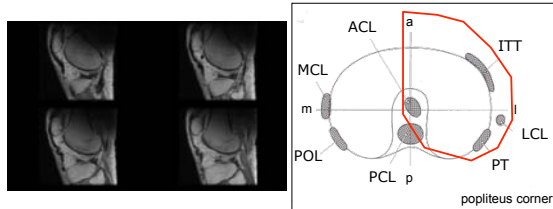
Begin PT at 4 weeks



Case Example

- 32 y/o police officer was struck in the left knee by a miscreant's SUV
- Dx: Acute: - Gr III ACL
 - Gr I PCL
 - Gr III lateral corner
 - LCL midsubstance
 - Popliteus avulsion proximal
 - IT band
 - Gr I bicepsPeroneal neuropraxia

Case Example



Plan: Acute repair of patellar tendon + repair/reconstruction of posterolateral corner.

Wait on ACL!

Multiple ligament injuries

Conclusions

1. Multiple ligament injured knees are a spectrum of injuries

Every knee is different!

2. Be very specific with the classification of the injury: timing, ligaments involved, grade of injury I-III, and associated injuries

This is not just an MRI classification!

Multiple ligament injuries

Conclusions

3. Not all ligaments involved need surgical treatment. Partial injuries (Grade I-II) of certain ligaments (especially PCL and MCL) can heal
4. Remember ***“nothing is so bad that it cannot be made worse with surgery”***

Thank you!



“I never dared be radical when young for fear it would make me conservative when old”



Robert Frost 1874-1963

Hippocratic Oath

“I will apply, for the benefit of the sick, all measures that are required, avoiding these twin traps of overtreatment and therapeutic nihilism”



Hippocrates, late 5th Century BC