Multiple Ligament Injuries

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!

Overview

• Definition of the injury

  It is not just a dislocated knee!

• Principles of initial evaluation

• Simple classification scheme

• Case examples

Definition

Spectrum of Injury

• Single cruciate (ACL or PCL) + Bicruciate
  + Collateral (s) + Collateral “dislocated”

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

  Every knee is different!
Evaluation

Combined Injuries
Physical Exam

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

Injury Classification

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

37 Cases

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

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)

POST OP X-RAYS

Case Example

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

3 Month post op
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

Case Example
LCL ok
Proximal MCL tear
High-grade partial PCL tear

Case Example
Complete ACL Tear

Case Example
Brace in full extension for 3-4 weeks
Surgery at 6-8 weeks
Exam under anesthesia will determine what I do!

Case Example
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 biceps
  Peroneal neuropraxia

Plan: Acute repair of patellar tendon + repair/reconstruction of posterolateral corner.
Wait on ACL!

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!

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