

## Treatment of Chronic MCL Injury



Dept. of Orthop. Surgery  
Kobe University



Masahiro Kurosaka MD

## Incidence of Residual Medial Instability after Acute MCL Injury



- Isolated grade 3 injury  
Grade 2 or more: 0, 17%  
(Indelicato, Reider)
- Combined grade 3 MCL/Cruciate injury  
Grade 2 or more: 35%  
(Nakamura)



## Physical Examination



Valgus stress test

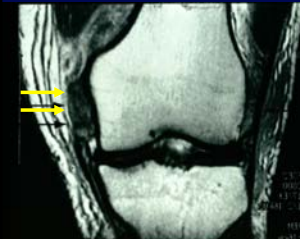


Assessment of AP laxity

## Imaging Studies



## MRI depicts injury site well and healing is different depending upon injury pattern



Typical proximal injury



More severe injury

## Consideration for Treatment





- Degree of instability
- Associated ligamentous injuries  
(isolated or combined)
- Sports activity  
(level, collision sports?)



## Treatment Options

- **Conservative treatment**  
(Training to improve strength and neuromuscular control, bracing)
- **Operative treatment**  
(Surgical restoration of mechanical function)

## Indication for Surgery

- Gross medial instability with no end point on valgus stress
- Patients with functional impairment (mostly combined ligamentous injuries)
- Amount of increased joint opening is not a critical indicator

## Functional Impairment in Chronic Isolated MCL injury


- None with isolated medial instability noted giving way. (Warren)
- MCL injury is not a trivial injury, and persistent symptoms are common. (Reider)

## Significance of Medial Instability in Combined Ligament Injury



- Pronounced functional deficiency (instability)
- Increased stress applied to the (reconstructed) cruciate ligament

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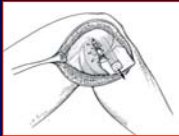
**Concomitant MCL and cruciate ligaments reconstructions**



## Surgical Procedures to Reconstruct the Medial Structures

## Surgical Procedures -Combined procedure-




- Reattachment of the capsular structures
- Transfer or tightening of the pes anserinus
- Advancement of the insertion of the MCL

**Nicholas, O'Donoghue, Slocum (1973, 1974)**

### Our Procedure -Rationale-

- Reconstruction of the superficial MCL (a primary stabilizer)
- Use of a multi-stranded hamstring autograft




### Our Procedure -Skin incision-



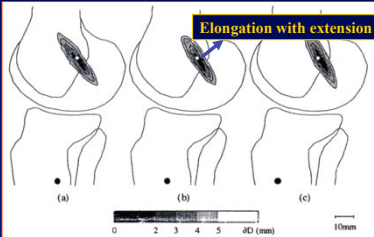
### Our Procedure -Graft Harvest-



### Our Procedure -Selection of Attachment sites-



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(Mizuno 2002)

### Our Procedure -Preparation of the Bone Tunnels-



## Our Procedure -Graft Passage-



## Our Procedure -Femoral Fixation-

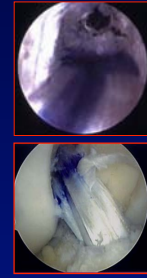


## Our Procedure -Postoperative Rehabilitation-

- Immobilization for 1-2 weeks
- Weight bearing at 2 weeks
- Use of a hinged brace for 2 months
- Return to sports activity at 9-12 months



## Our Procedure -Concomitant Cruciate Reconstruction-



## Our Procedure -Results-

Isolated MCL: 2	ACL/MCL:
12	PCL/MCL:7
PCL/MCL:3	ACL/

### • Medial instability

No instability	: 20/24 (83%)
Grade 1	: 4/24 (16%)
Grade 2 or more:	( 0%)



## Our Procedure -Potential Problem-

Only the anterior longitudinal part of the superficial MCL is reconstructed.

Stability against valgus stress through range of motion, and rotatory stress may not be restored.

