

Overview of the treatment options

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Knee ligament injuries

ACL - Common, very low healing
Serious disability in sports

PCL - Common, some healing potential

MCL - Common, relatively good heal

PLC - Serious disability in varus knee



My previous concept

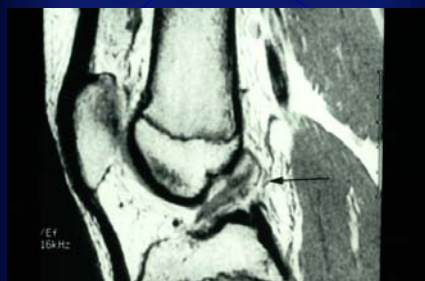
ACL → Reasonable recon

PCL → Conservative → No good recon.
MCL →

LCL (PLS) → Primary repair



In the case of ACL injury



ACL reconstruction can provide predictable results in majority of the cases.



The problem is how are you going to deal with this kind of the knee ?



Often it is difficult to judge how to deal with this kind of terrible problem at an emergency room.



Numerous authors have reported on the management of knee dislocations.

However, there is not unanimous consensus found in the literature concerning the best possible treatment.

Acceptable results have been reported following both operative and non-operative treatment.

Associated injuries

- **Vascular injury**
- **Neural injury**

Vascular injury

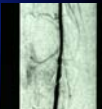
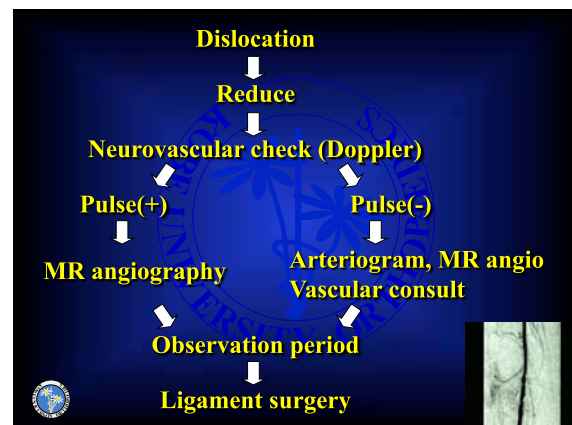
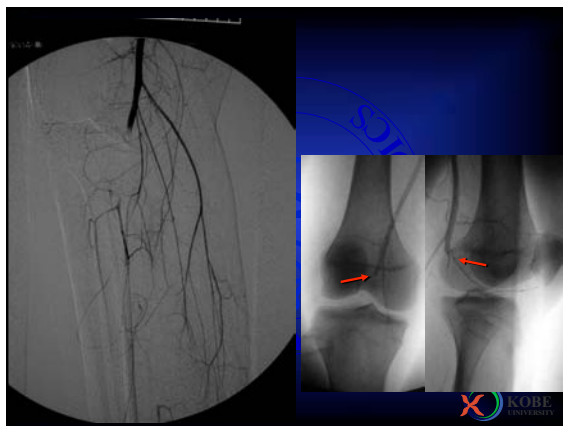
- In low velocity knee injuries seen with sporting activities, the incidence is low (4%).
- Doppler examination is essential. MR angiography provides lots of information but sometimes arteriography is necessary.



The incidence of vascular injury

Low – Low velocity injuries
Sports related injuries

High – High velocity injuries
Traffic accident



Associated injuries

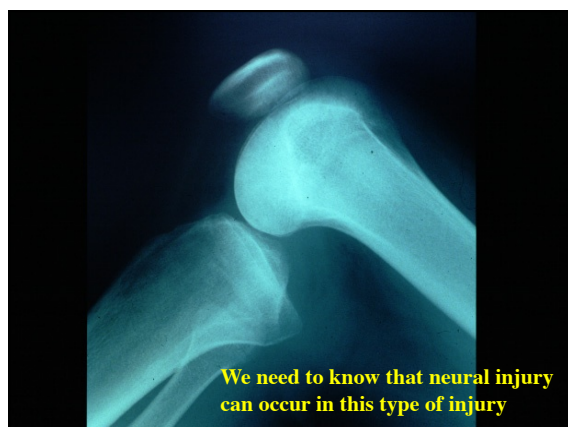
- Vascular injury
- Neural injury



Neural injury

- Occurs less frequently compared to vascular injury
- Mostly peroneal nerve injury associated with ACL/PCL/PLC injuries



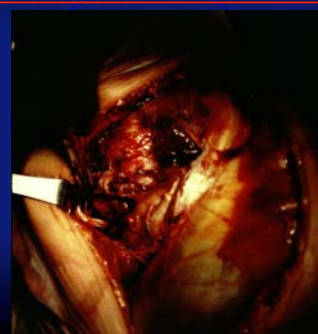


Neural injury

Axonotomesis is rare and no treatment other than exploration and observation is needed in most of the cases.



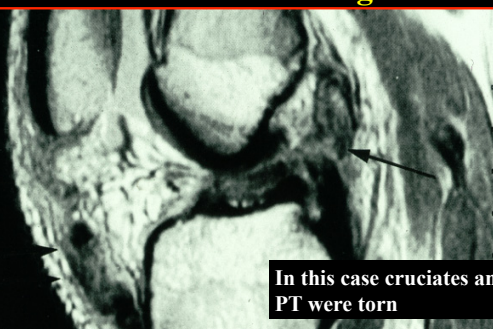
Exploration and confirmation of nerve is needed in some of these cases

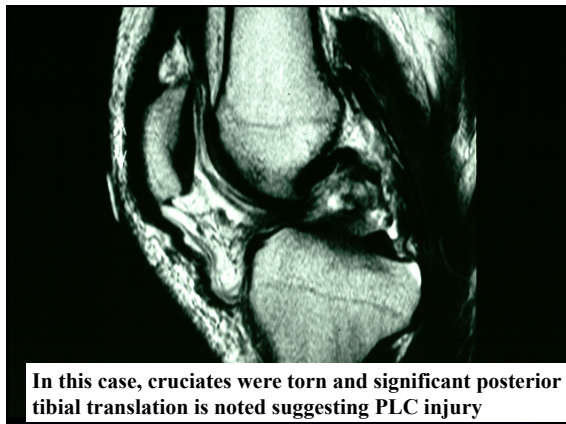


Diagnosis of combined ligament injury



MRI is an important exam to know what structures are damaged

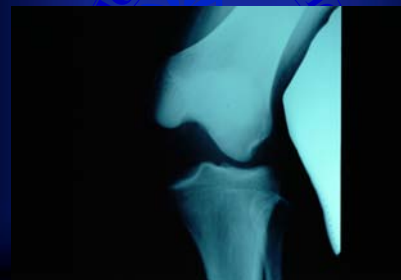




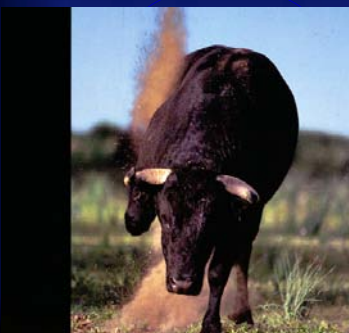
Many surgeons advocated acute surgery in patients with multiple ligament injury but the patients often develop a symptomatic stiff knee problems with functional impairment.



When you see this kind of terrible knee injury..



You do not need to be too hot and hurry.
You just take it easy and you can be cool.

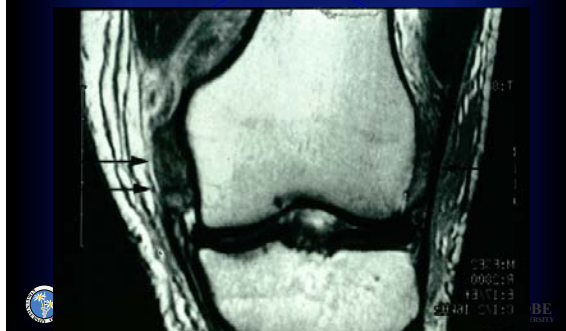


Factors influencing decision making

- Grade II MCL and PCL heal reasonably well.
- PCL and ACL (rarely) are occasionally peeled off from the insertion site thus repairable.



MCL injury after trauma is just very painful and influences the decision making



Correlation between the results of gravity test and existence of endpoint

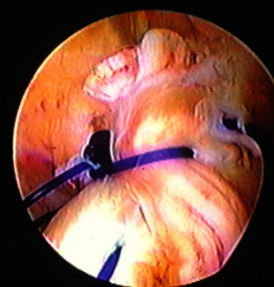
		grade 1	grade 2	grade 3	total
End Point	+	11 cases	16 cases	6 cases	33 cases
	-	0	0	19 cases	19 cases

Akisue T, Kurosaka M, et al, Arthroscopy COOR 2001, 2002

Factors influencing decision making

- Grade II MCL and PCL heal reasonably well.
- PCL and ACL are sometimes peeled off from the insertion site in high energy injury thus repairable.

Very rarely, but ACL can be repairable in acute dislocated knee



Factors influencing decision making

- Results of ACL reconstruction is predictable.
- Anatomic reconstruction of MCL can provide good results.

Factors influencing decision making

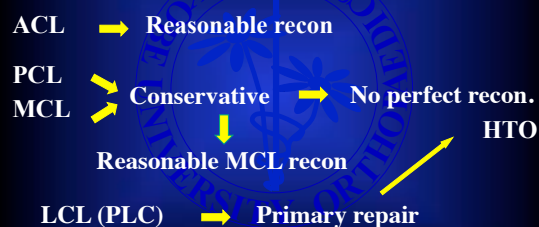
- Results of chronic PCL reconstruction is not as good as ACL and MCL reconstruction.
- Results of lateral reconstruction is worst.

Factors influencing decision making

- Results of chronic PCL reconstruction is not as good as ACL and MCL reconstruction.
- Results of lateral reconstruction is worst.



My Current approach



Summary of The Results

- ACL
Delayed reconstruction yielded satisfactory result.
- PCL
Reconstruction resulted in residual instability.



•MCL

No beneficial effect of primary repair on stability.

•PLS

Both repair and reconstruction failed to restore the stability.
Osteotomy is most reliable

- Poor clinical results were correlated with stiffness rather than instability.



Stiff knee is worse than the knee with some instability



The ideal goal should be to achieve a mobile and stable knee rather than to make a stiff and stable knee.



