

## Types of Meniscal Tears

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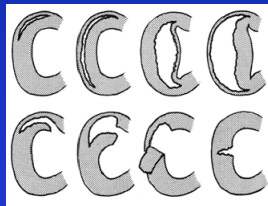
5<sup>th</sup> Advanced Course on Knee Surgery  
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## Classification of meniscal tears

Meniscus tears are classified according to :

- ❖ Location
- ❖ Integrity and damage to meniscal tissue
- ❖ Type of tear



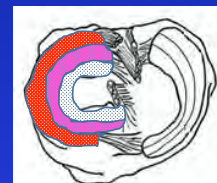
## Meniscus Zones

### Location

Based on the blood supply : 3 Zones

### Red - White Zone

Red Zone  
(well vascularized)



White Zone  
(Avascularized)

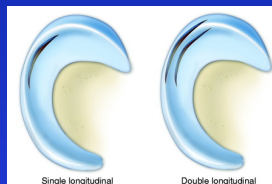
## Integrity and damage to meniscal tissue

### - Single meniscal tears

occur in a single plane, regardless of location  
most commonly found in the posterior horn are  
usually **reparable**

### -Complex meniscal tears

occur in more than one plane or direction.  
**Mostly not reparable**

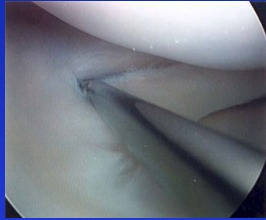


## Types of meniscal tears

- (a) longitudinal or circumferential tears,
- (b) horizontal tears,
- (c) oblique tears,
- (d) radial tears,
- (e) variations, which include :
  - flap tears,
  - complex tears,
  - degenerative meniscal tears.

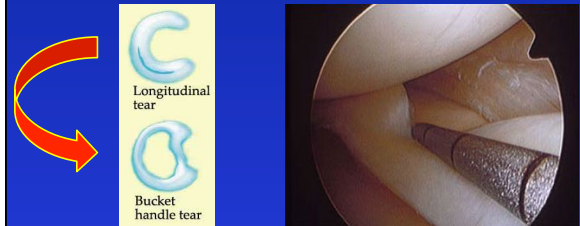
### longitudinal meniscal tear

- most commonly occur as a result of trauma to a normal meniscus.
- usually vertically orientated parallel to the edge of the meniscus



### Bucket Handle tear

When the inner fragment of a longitudinal tear displaces over into the intercondylar notch, it commonly is referred to as a **bucket handle tear**



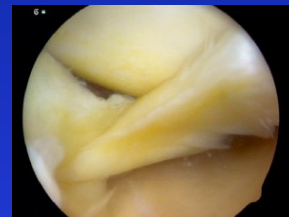
### Horizontal meniscal tear : Cleavage

- common in older patients (shearing type injury)
- divides the superior and inferior surfaces of the meniscus.
- commonly seen in the posterior half of the medial meniscus or the midsegment of the lateral meniscus



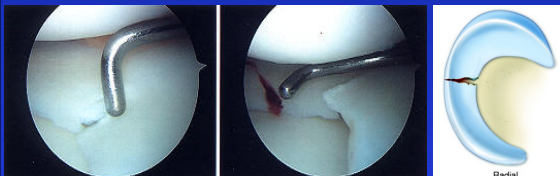
### Oblique tear

full-thickness tears running obliquely from the inner edge of the meniscus into the body of the meniscus.



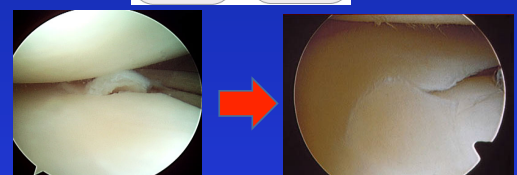
### Radial Tear

- vertically oriented
- extending from the inner edge of the meniscus toward its periphery.
- can be complete or incomplete.



### Parrot's Beak Tear

*A progression of a radial tear*



### Flap Tear

usually have a horizontal cleavage element rather than being purely vertical in orientation

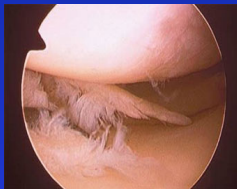


### Complex Tear

- contain elements of all of the above types of tears
- more common in chronic meniscal lesions or in older degenerative menisci.
- generally caused by chronic, long standing, altered mechanics of the abnormal meniscus.

### Degenerative Tear

- Degenerative tears often refer to complex tears.
- Present with marked irregularity and complex tearing within the meniscus
- seen mainly in elder patients



### Assessment of the medial meniscus in ACL deficient knee according to the arthroscopic approach



A. PELTIER  
E. SERVIEN  
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P. NEYRET



Micellaneous from S & N



UNIVERSITY TEACHING CENTER



### PROSPECTIVE STUDY

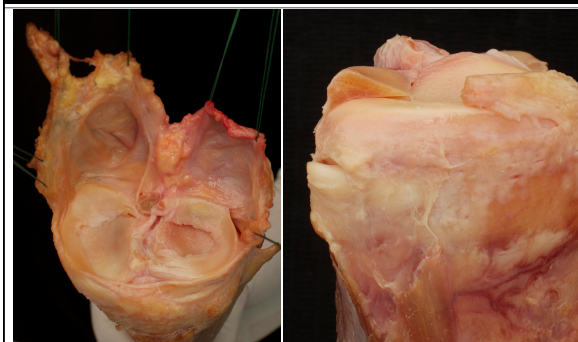
- 41 patients (Nov. 2012 to May 2013)
- At time of ACL reconstruction
- Three approaches
  - Antero lateral
  - Inter condylar
  - Postero medial

30° arthroscope

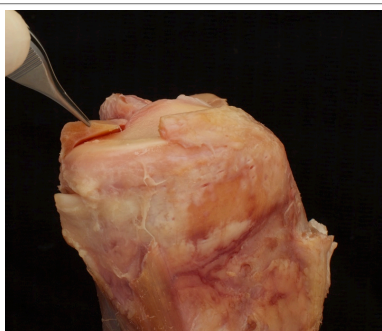
## FINAL RESULTS

Diagnosed	Antero Lat.	Intercondylar	Post. Medial	Total
PHMMT	18	+4	+2	24
6/39				
Underestimated	Antero Lat.	Intercondylar	Post. Medial	Total
PHMMT		3	2	5
5/39				

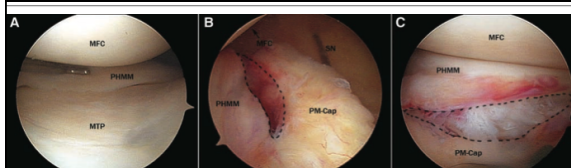
## Courtesy of R Smiegelski



## Courtesy of R Smiegelski



## Prevalence Ramp lesions



Ramp lesion = lesion involving the peripheral attachment of PHMM  
 > 16 % ramp lesion (144/868)

Arthroscopic prevalence of ramp lesion in 868 patients with anterior cruciate ligament injury  
 Xin Liu AJSM, 2011.

# Thank You