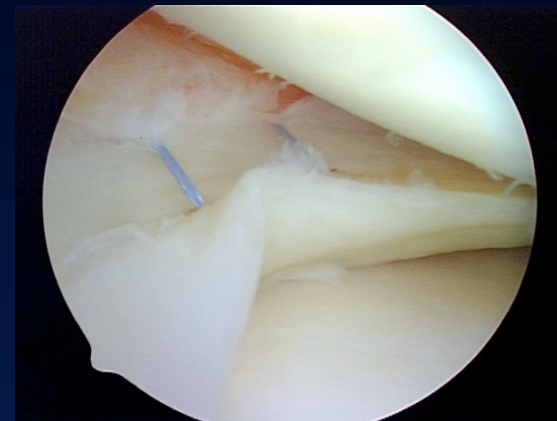
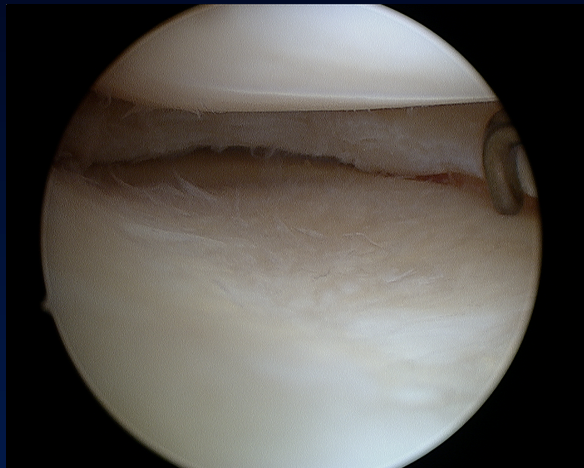




MENISCAL REPAIR : LIMITS



François Kelberine, Jean-Philippe Vivona

Aix en Provence - France

Meniscectomy

One of the most frequent orthopædic operation

Remove the injured part and no more

Meniscal repair

12% in stable knee in France

L'arthroscopie 2015 SFA Ed

Avoid cartilage damages

Protect degeneration

depend on surgeon's skills and experience

Meniscal repair depends on...

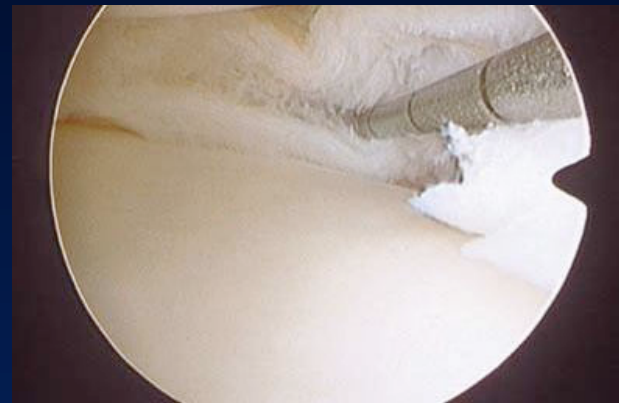
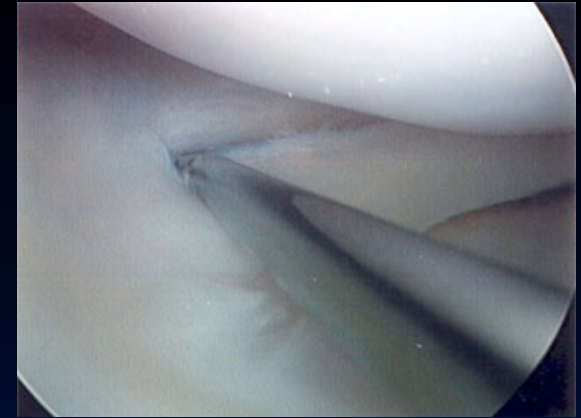
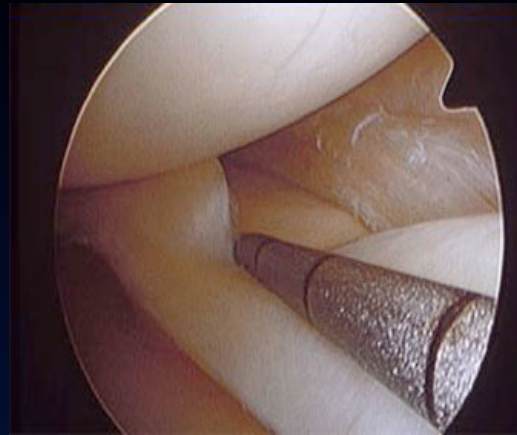
- Do we prevent degeneration?

Rockborn KSSTA 2000
Paxton Arthroscopy 2011

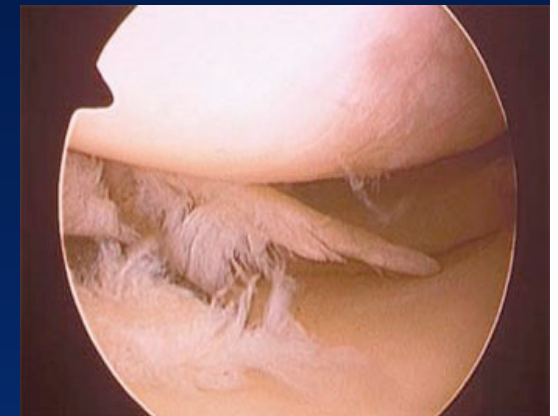
- Tear pattern
- Vascularization
- Combined lesion
- Age of the lesion
- Patient's age
- Activities (level & type)
- Iatrogenic risks of repair?

Pattern

Longitudinal tears
Horizontal tears
Oblique tears
Radial tears

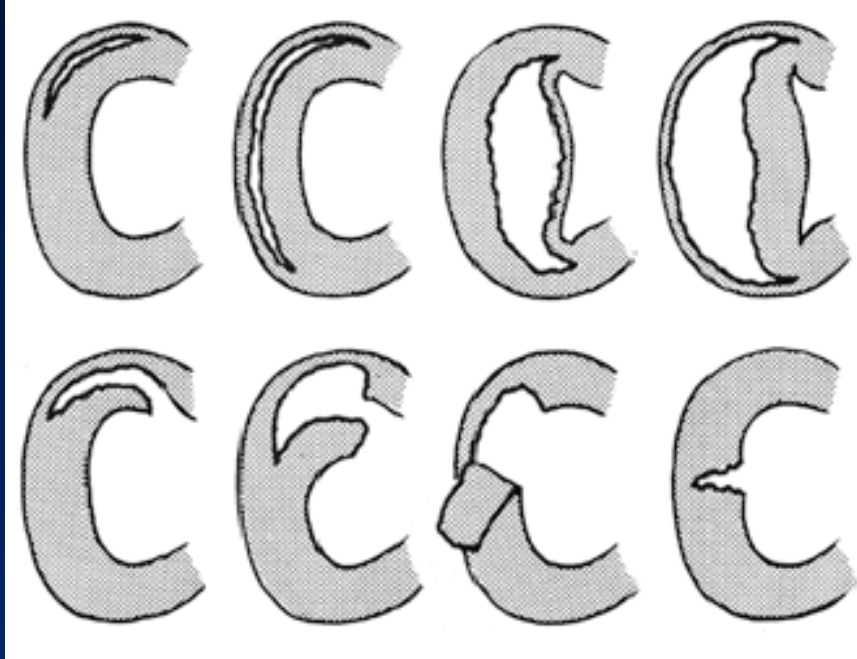


From simple to complex
From trauma to degenerative



Meniscal Tear

- Pattern
- Location (extend, root)
- Quality of tissue itself ++

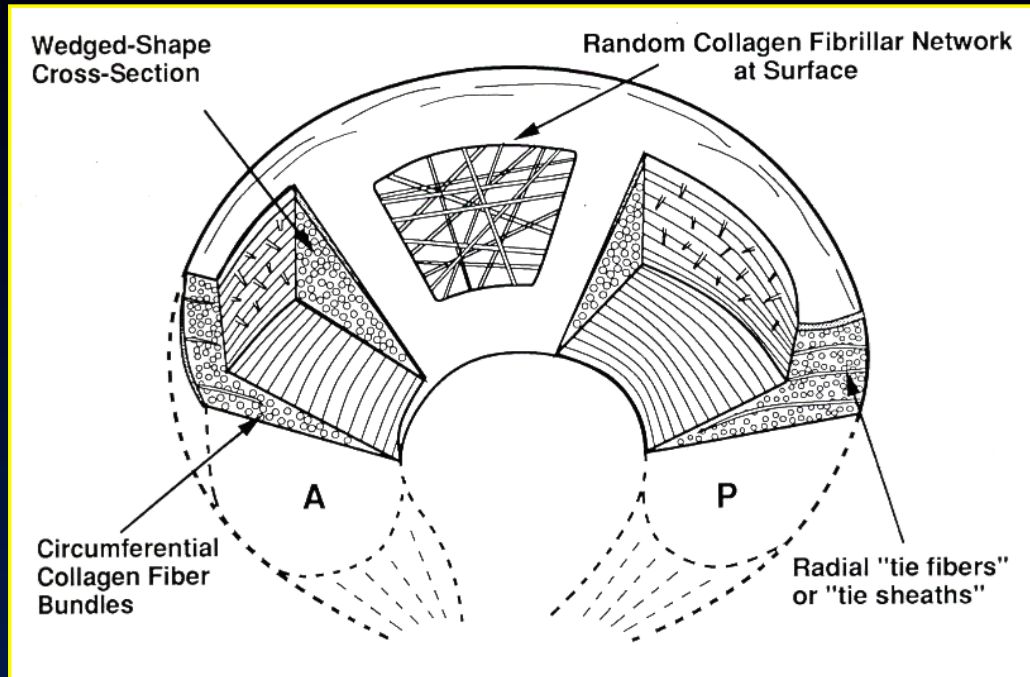


Degenerative tear

- Middle aged patient
- Strat with oblique
- Tissue damages within the meniscus
- Long lasting onset
- Partial meniscectomy



Structure of the Meniscus

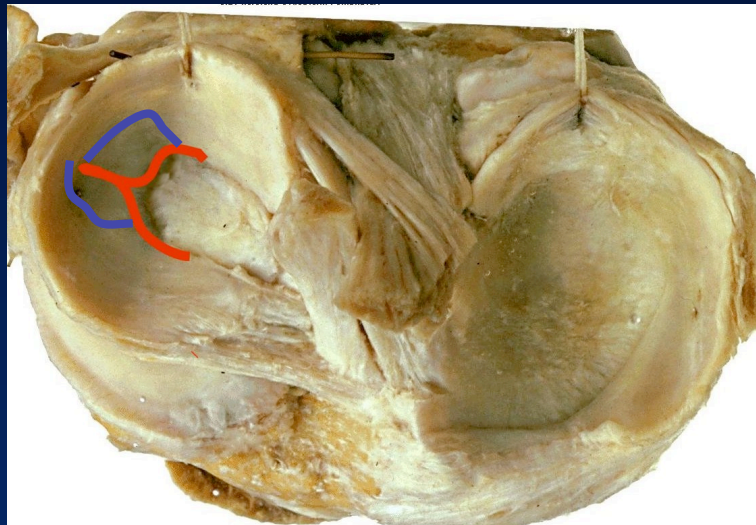


Circumferential fibers spread compressive load

Radial & oblique fibers enhance rigidity, prevent longitudinal splitting = Ties

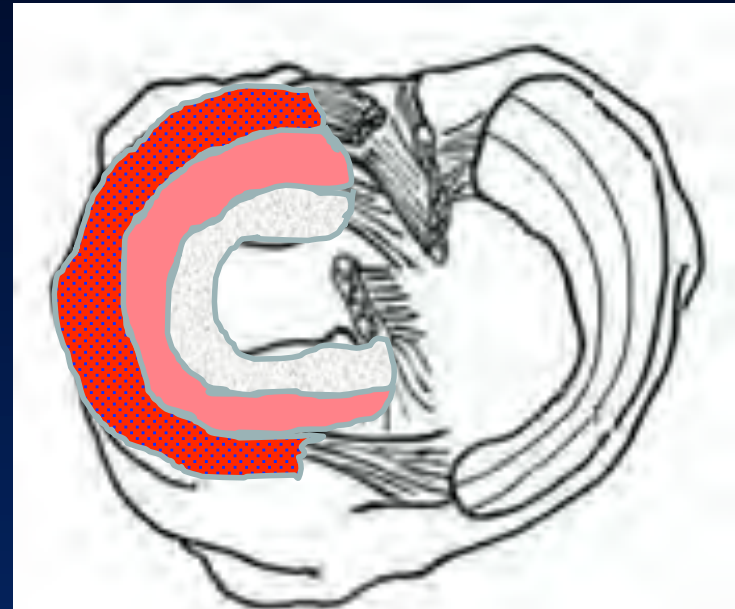
Resection is not detrimental
by
keeping intact the stable peripheral
circonferencial fibers
which resists hoop stress

- Cyst
- Popliteus wall / LM
- DML



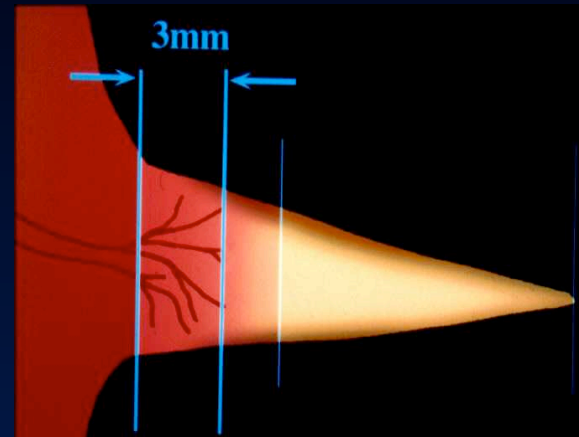
Healing capability

3 zones of blood supply



Is the healing effective?

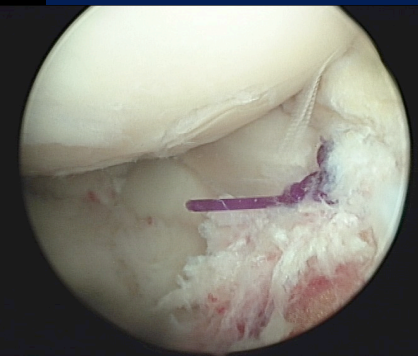
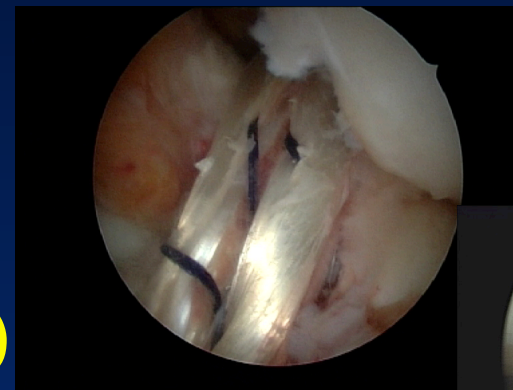
- Synovial, Red-Red, Red-white zones
 - eg roots



- White-White zone?

Noyes JBJs 2010

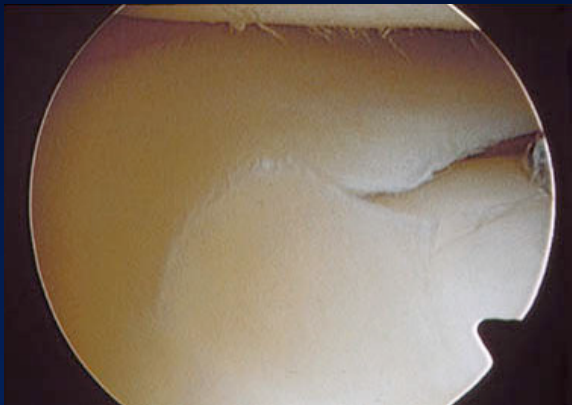
- Biological enhancement
- Clot, trephination, GF,
- Bleeding from another area
 - (eg ACL, Tibial fracture)



- Cost, benefit ?

Associated lesion

- Preserve menisci as much as possible
- Stabilize lesion even radial ML tear in w-w zone



- The time of healing process of the procedure overlaps the meniscus one

Specificity of horizontal tear

- 2 ≠ populations
 - Young myxoid lateral > medial
 - Over 45 y.o degenerative medial > lateral
- To keep meniscal tissue as much as possible
 - Reconstruction
 - Leaf resection (minimal resection)

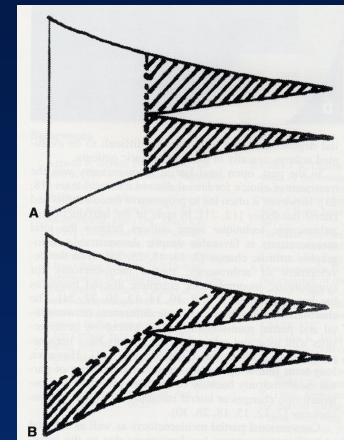
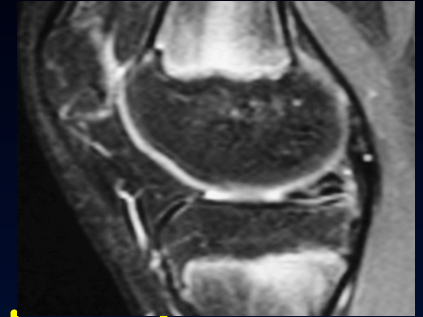


Fig 1 Lines of resection (broken line) and amount of removal (shaded area) in conventional partial meniscectomy (A) and "conservative" partial meniscectomy (B).

Patients

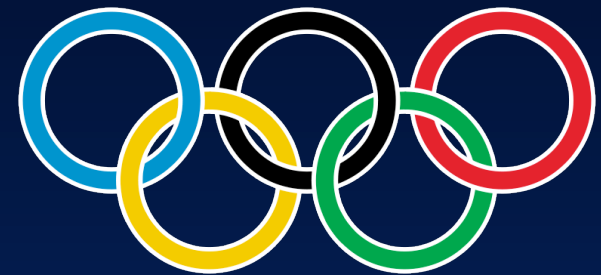
- Age?

El Kousy Sport Med Arthr Rev 2002

- Morphotype

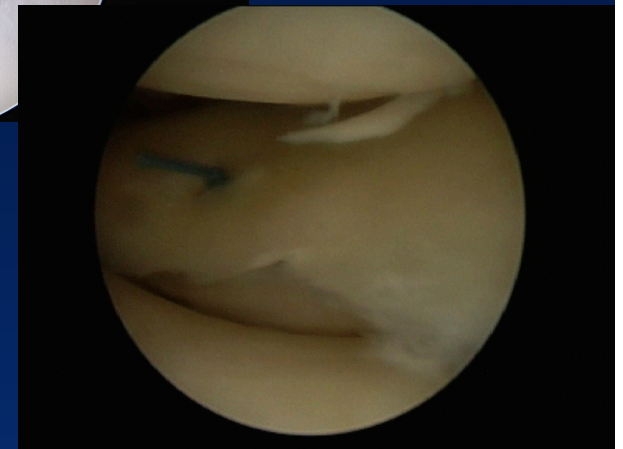
- Activities

- ADL or sport
- Deny
- Difficult to convince

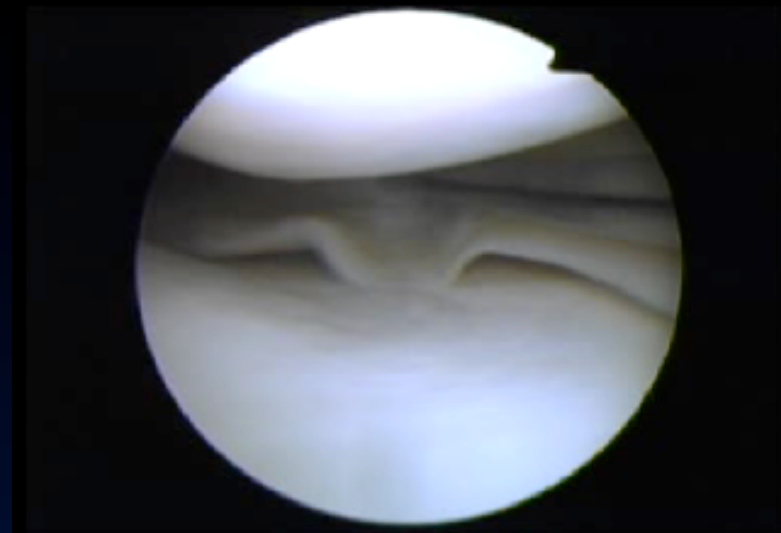


Risks of repair not yet assessed

- Meniscal arrows prohibited
- Technically challenging
- Iatrogenic lesion
- Detrimental role of suture material ?



Meniscectomy



- Is still largely valid
- Patial meniscectomy (as conservative as possible)
- Avoid cartilage damages

Except

- Lateral compartment, young age, combined acl repair