Medical treatment of focal defect of knee cartilage

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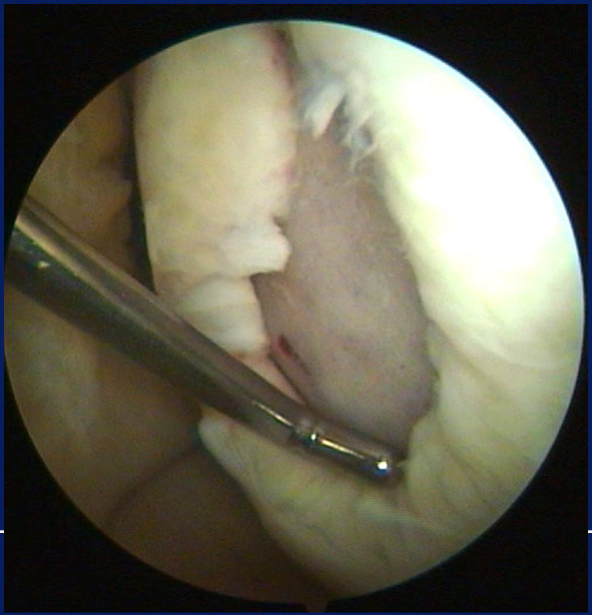
Traumatic tears

- Curl *(Arthroscopy 1997)*
- Retrospective : 31516 arthroscopies grade 3 or 4 : 63%

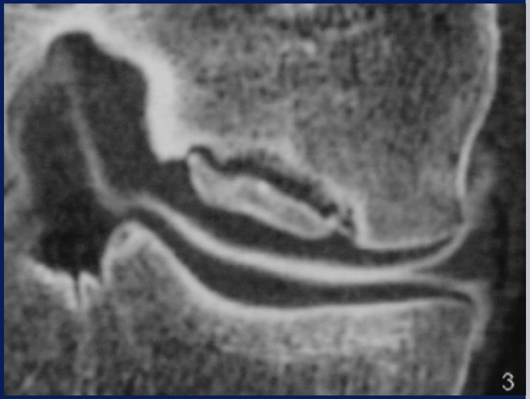
- Arden *(AJSM 2004)*
- Retrospective : 993 arthroscopies (age 35y) 11% grade 3 ou 4
- Half > 2cm²

- Engebretsen *(ICRS 2006)*
- 526 patients, 5% > 2cm²
- 11% treated

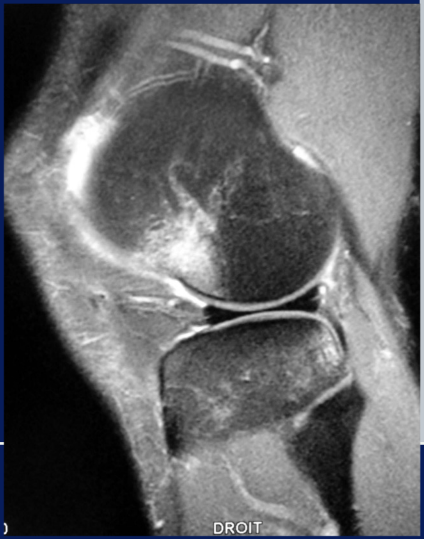


Ætiologies

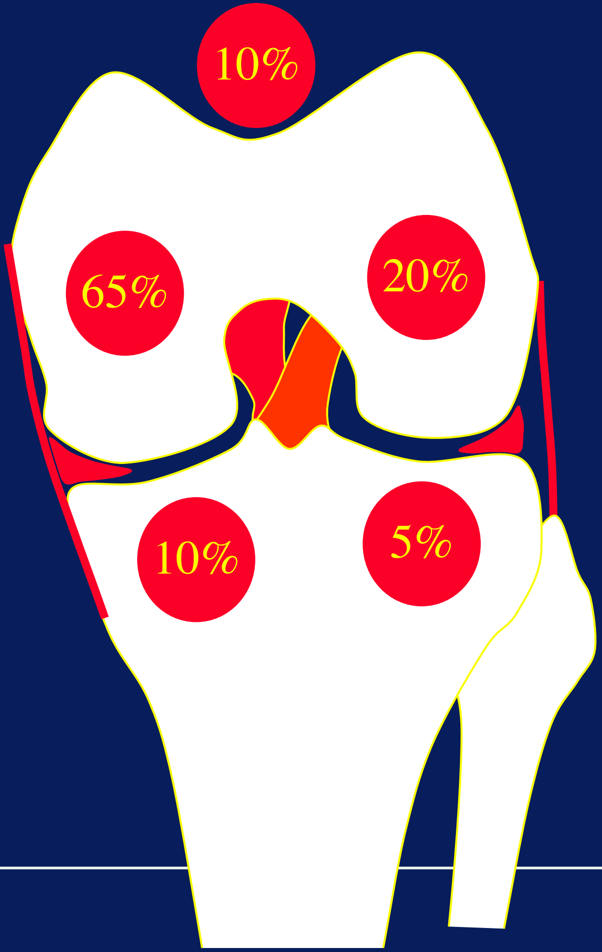
- OCD, Necrosis



- Direct Trauma (fracture)
- Combined injuries (*e.g acl tear*)
  - medial stellar impact
  - lateral condyle impaction



Location & size



e.g : ACLR : 34% to 77%

Patella 2% of OCD

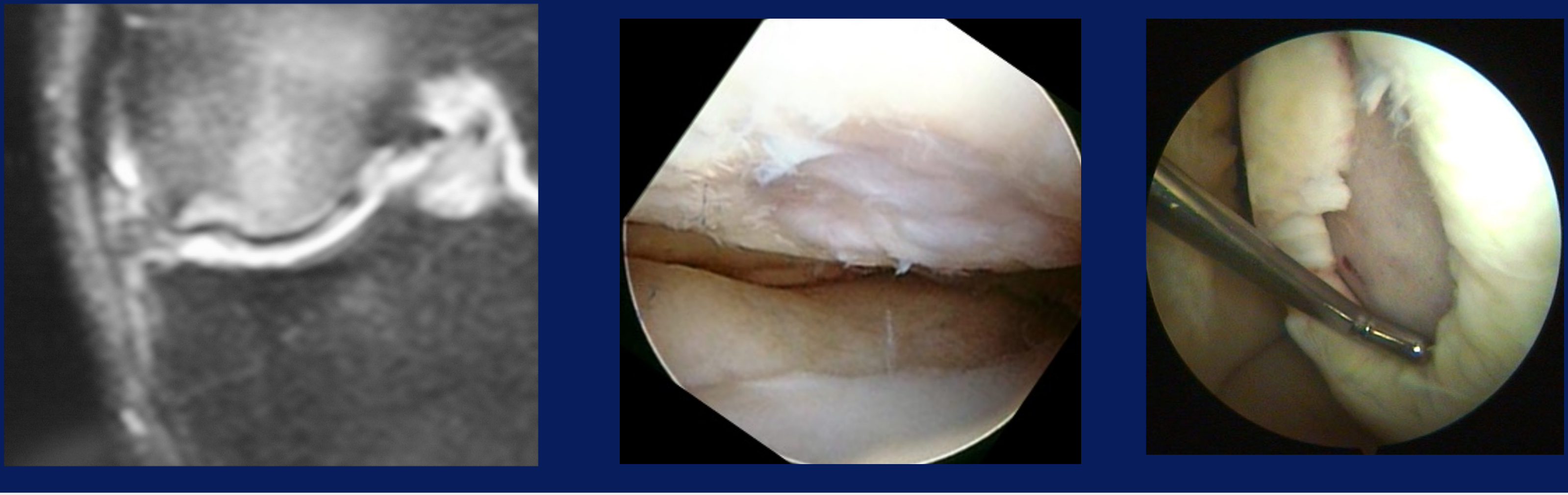
Pfeiffer CORR 1991

1 cent = 2.01 cm^2

Which lesions to treat medically?

- Pain, impairement and/or swelling
- No locking (LB)

- depend on the age, size & wb area



Medical treatment

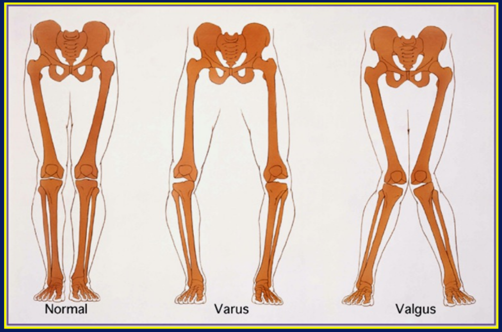
- Medication : Pain killer, NSAID

- Lost of weight

- Running In, Quad Strenghening

Medical treatment

- Sole


Normal
Varus
Valgus

- Protected temporarly WB
  - Orthosis
  - Crutches

Medical treatment

IA injections

- Steroids
- HA
- PRP

IA Injections

- **Corticosteroids** (anti inflamatory drug)
  - Short term decreases in pain

Bannuru *An Int Med 2015, 162:46*

- **Viscosupplements** (chock absorber, lubricant)
  - Inconsistent conclusions
  - Adverses events unreported
  - Conflicting results
  - Not recommanded in AAOS guidelines

Wang *JBJS Am 2004, 538-545*
Rutjes *Ann Int Med 2012, 180-191*
Mac Alindon *Osteoarthritis & Cartilage 2014,363-388*

Trend to treat painfull knee with HA !

IA Injections : PRP

- In vitro
  - cartilage regeneration effective

Frenkel *Plat Recons Surg 2000, 980-990*
Hiraki *Osteoarth Cartil 2001 102-108*
Lee *Human Gene Therapy 2001, 1805-1813*

- Experimental study

Serra *KSSTA 2012, 1730-6*

- Clinical studies
  - Effective from 6 to 9 months
  - then drops down

Sanchez *Clin Exp Rheum 2008, 910-913* Fi
KSSTA 2010, 472-479
Arthroscopy 2011, 1490, 1501 Pa
Am J Sport Med 2013, 356-364 Samps
J Phys Med & Rehab 2010

PRP / IA injections

- More effective / HA @ 6 months

Kon *Arthroscopy 2011, 1490, 1501*
Sampson *Am J Phys Med & Rehab 2010, 961-966*

- No long term FU

Dold *Clin Journal Sport Med 2014, 31-43* Khoshbin *Arthroscopy 2013, 2037-2048*

- More minor adverse effects (8,4% vs 3,8%)

Medical Treatment

- It is not because it is not recommanded that it is not performed
- We are surgeons and are convinced we can surely repair the defect with benefit

- However natural onset will led to DJD
  - Hight demanding middle age patient
  - Informed patient

Prakash *Current Orthopaedic Practice 2012, 218-220*
Krych *Sport Med Arthrosc Rev 2013, 23-30*