

# Clinical spectrum

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# PATIENT'S COMPLAINT

LIPS : Locking, Instability, pain, Swelling

- Joint pain may continue even when resting and worsen when weight bearing
- Swelling
  - when acute is often hemarthrosis,
  - after a few hours or days hyarthrosis
- stiffness
- a clicking, grinding sensation or crepitus
- The joint locking, catching, or giving way

# Other clinical evaluation

- Age
- Lower limb Mechanical axis
- Normal axis or favorable valgus or varus
- Knee laxity
- Arthritis or degenerative disease
- IMC  $<$  or  $>30$  kg/m<sup>2</sup>
- Nicotine addiction?
- Activity level

# Activity-level

I: high competitive sportsman/woman

II: well-trained and frequently sporting:

III: sporting sometimes

IV: Non-sporting

# Functional Status

- I: I can do everything that I want to do with my joint
- II: I can do nearly everything that I want to do with my joint
- III: I am restricted and a lot of things that I want to do with my joint are not possible
- IV: I am very restricted and I can do almost nothing with my joint without severe pain and disability

# Cartilage lesion evaluation

- Acute or Chronic
- Localisation
  - Weight bearing location or not?
  - Patella and trochlea
- Surface
- Depth
- Gradation with ICRS Score
- Which techniques can be used in your clinic?

# IKDC Subjective Knee Evaluation Form-2000

- Rate your health in general
- Does your health limit you in activities
- Emotional problems ?
- Psychological status
  - Are you an happy person or tired or worn out

# IKDC Subjective Knee Evaluation Form-2000 (Part 2)

From 0 to 100 :

- Activity level without pain
- Stiffness and swelling
- Locking
- Ability to Sport
- Optimal use



# Other common joint injuries

- Sprains
- Meniscal lesion
- Anterior knee pain
- Loss of biomechanical function due to meniscal tears and loss of knee stability due to ligament damage (particularly the ACL)

Range-of-motion testing is usually normal

However, adaptive gait patterns such as  
in-toeing or out-toeing, or  
a flexed-knee gait  
may develop as the patient compensates to shift  
weight away from the affected area.

A comprehensive musculoskeletal examination should be performed to better assess for concurrent pathology that would alter the treatment plan.

# Curl et al. Cartilage injuries.

*Arthroscopy. 1997;13(4):456–460*

- Review of 31,516 knee arthroscopies,
- 63% of knees had chondral lesions (averaging 2.7 lesions per knee)
- 20% had full-thickness lesions,
- 5% occurring in patients less than 40 years of age

# Functional Scores

- ICRS (*International Cartilage Repair Society*)
- IKDC fonction
- Hughston clinic
- KOOS

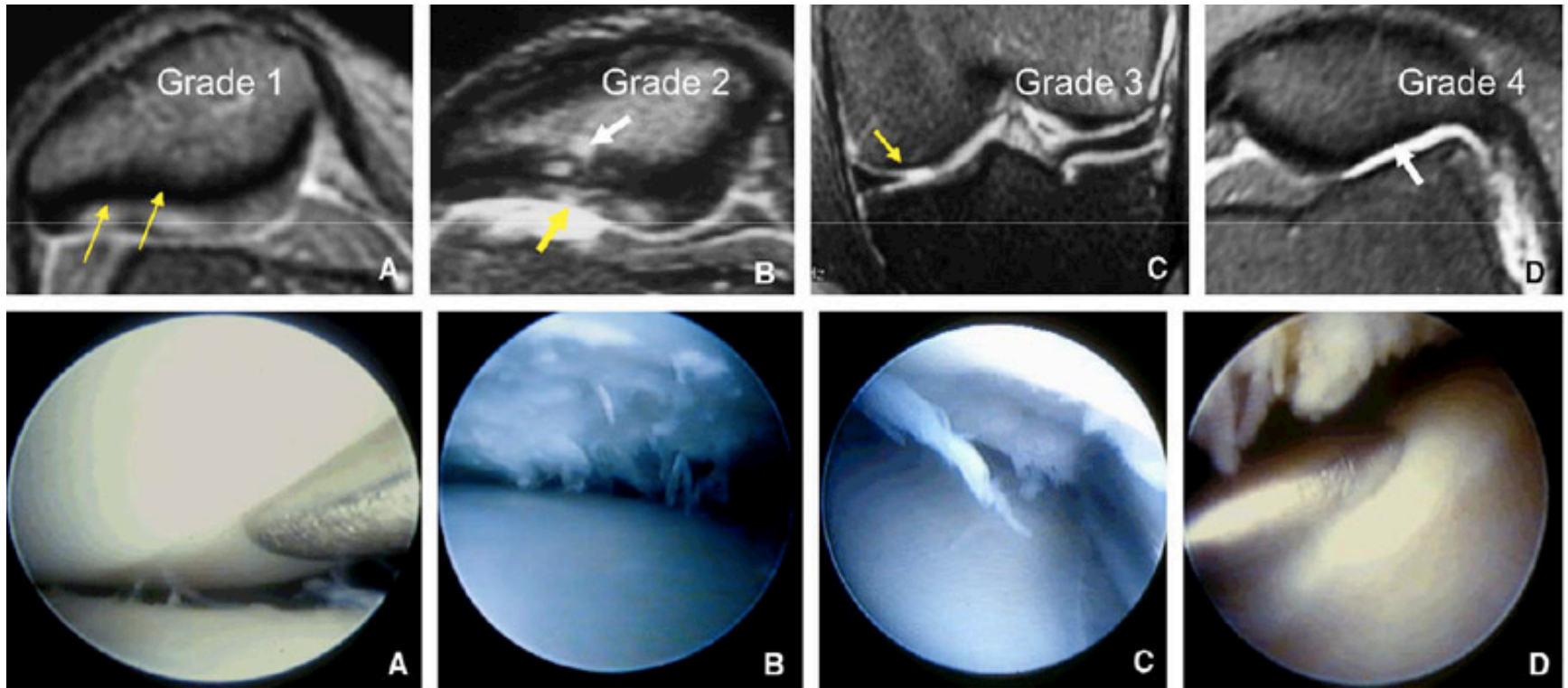
# OUTERBRIDGE CLASSIFICATION OF CHONDRAL INJURIES

- I : Softening and swelling of cartilage
- II : Fissures and fragmentation in an area  
•  $\frac{1}{2}$  inch or less in diameter
- III : Fissuring and fragmentation in an area  
with more than  $\frac{1}{2}$  inch diameter involvement
- IV Erosion of cartilage down to subchondral  
bone

MODIFIED INTERNATIONAL  
CARTILAGE REPAIR SOCIETY CLASSIFICATION SYSTEM FOR CHONDRAL INJURY  
(ICRS)

- 0 : Normal cartilage
- I: Superficial fissuring, Softening
- II : less than  $\frac{1}{2}$  cartilage depth
- III : Greater than than  $\frac{1}{2}$  cartilage depth up to and not including subchondral plate
- IV : Penetration through subchondral plate, exposing subchondral bone

# International Cartilage Repair society (ICRS)





# For chronic osteochondral lesion

## Clinical Signes Child # Adult

- Swelling knee, hydarthrosis = 4 times less than adult  
locking= 3 times less than adult

- Child # Adulte, Less evolutive lesions  
Child = 80% Bedouelle Stade Ia or Ib

# Knee child Hemarthrosis (+/- dysplasy) Rx 4 incidences

## MRI : osteochondral Fracture

weight bearing localisation

OR

Large fragment  $> 5 \text{ mm}^2$



**Repositionind and fixation**

+/- with patella stabilisation surgery

- no weight bearing aera
- and
- Small fragment  $< 5 \text{ mm}^2$



**Removal under arthroscopy  
+ micro fractures**

Symptomatic OB stage 3 or 4 focal cartilage lesion

Alignment, stability, comorbidity adressed

Size of lesion

1-2 cm<sup>2</sup>

2-4 cm<sup>2</sup>

4-10 cm<sup>2</sup>

>10 cm<sup>2</sup>  
Bone defect  
high  
activity

Low  
activity

High  
activity

Low  
activity

High  
activity

Low  
activity

High  
activity

Debride

MF  
OATS

Debride  
MF

ACI  
OATS

Debride

ACI

Failure

ACI or redo ACI

Osteochondral  
allograft

# Conclusion

- A very precise clinical examination allow an appropriate diagnostic to choose the best treatment for your patient and then to obtain the best result