Management of first-time patella dislocation

Pr Elvire Servien MD PhD, Nicolas CANCE,
Lyon North University Hospital, Lyon, France

Etiologies of first time patellar dislocation

- Traumatic PF dislocation (High energy)
- Atraumatic PF dislocation (Low energy)
- 96-98% of cases : abnormal factors
- 2-4% : normal anatomy
- Chronic patellar instability

  100% of abnormal factors

Article

Chondral Injury in Patellofemoral Instability

Cartilage
2014, Vol. 5(3) 136–144
© The Author(s) 2014
Reprints and permissions:
sagepub.com/journalsPermissions.nav
DOI: 10.1177/1947603514530142
cart.sagepub.com
SAGE

Timothy Lording[1,2], Sébastien Lustig[2], Elvire Servien[2], and Philippe Neyret[2]

Etiologies of first time patellar dislocation

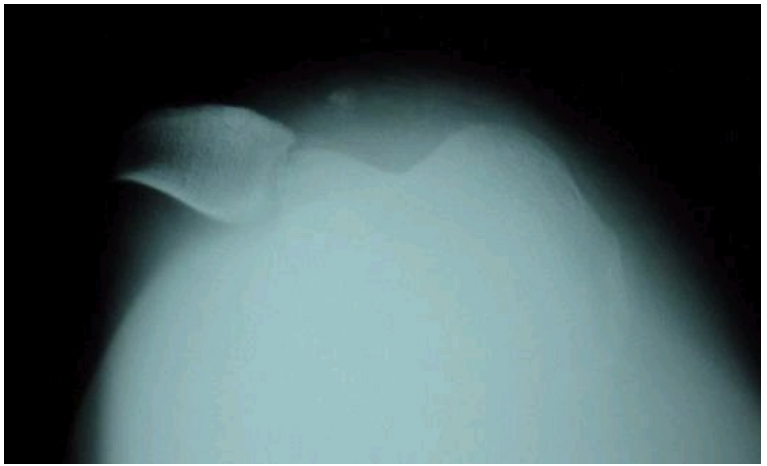
Traumatic (High energy)
normal anatomy

⟷

« Atraumatic » (Low energy)
abnormal anatomy (risk factors)

First time dislocation

- Acute patellar dislocation
- Injury (handball)
- normal anatomy



Osteochondral fracture +++

« Traumatic »

High incidence of chondral & osteochondral fracture

- normal anatomy

  The only way for the patella to dislocate during the injury is to « break the bridge »

  normal x-rays !

  MRI+++

« Traumatic »

Look for a chondral & osteochondral fracture

medial patellar facet

lateral femoral condyle

normal anatomy

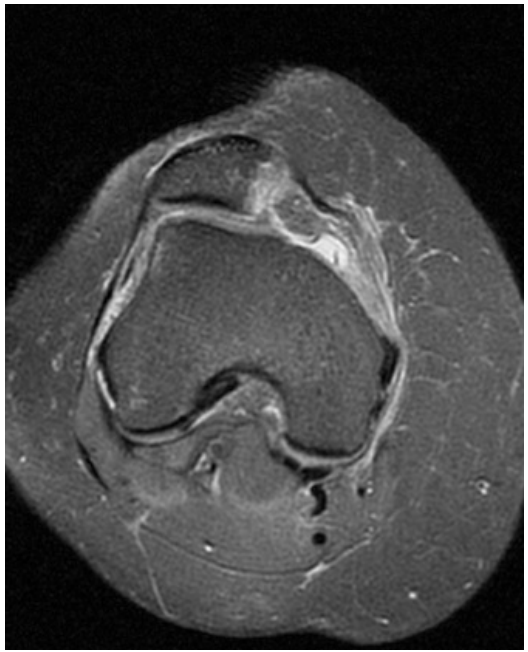
no trochlear dysplasia

no patella alta

Need surgery …..

« Atraumatic »

- trochlear dysplasia,
- patella alta



Askenberger M et al
Morphology and Anatomic Patellar Instability Risk Factors in First-Time Traumatic Lateral Patellar Dislocations.
Am J Sports Med. 2017

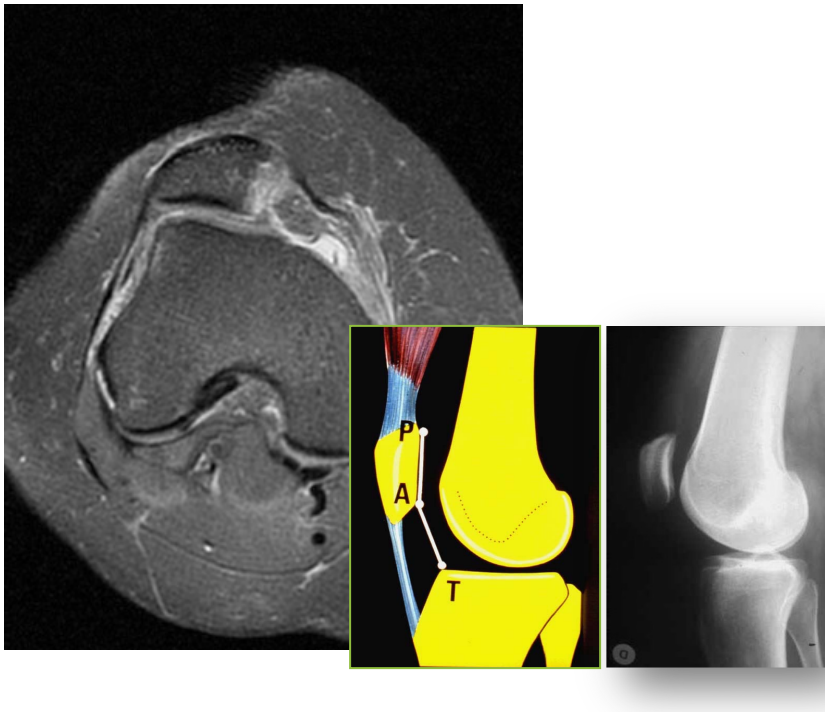
anatomic patellar instability risk factors (APIFs)

- trochlear dysplasia
- patella alta

And

abnormal lateral patellar tilt ?

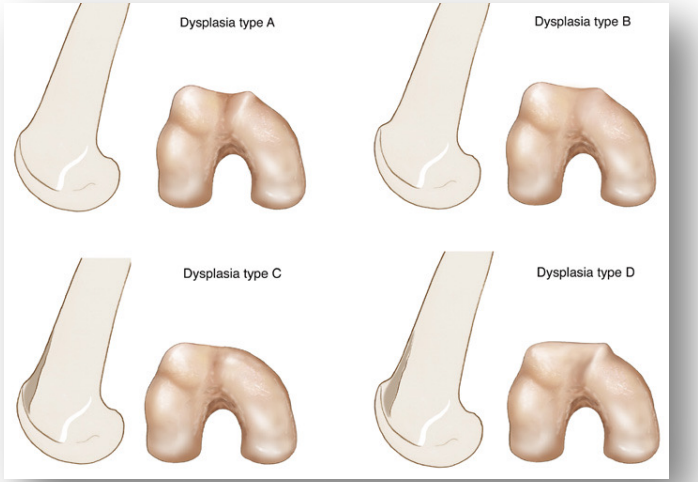
elevated [TT-TG] distance ?



Askenberger M et al
Morphology and Anatomic Patellar Instability Risk Factors in First-Time Traumatic Lateral Patellar Dislocations.
Am J Sports Med. 2017

Etiology of first time dislocation

Trochlear dysplasia
(Dejour types B and D)



Etiology

- Trochlear dysplasia
  types B and D showed the largest deviations for the patellofemoral contact areas and pressures
  Supratrochlear spur +++

Van Haver A et al,The effect of trochlear dysplasia on patellofemoral biomechanics a cadaveric study with simulated trochlear deformities. Am J Sports Med. 2015

Clinical exam

Acute phase

Traumatic injury ++
Swelling knee
Hemarthrosis
Knee pain
“GENTLE exam” (anxiety)
Rule out other diagnosis

Post-acute phase

(days to weeks)

Swelling knee
Hemarthrosis
Knee pain ?
Apprehension ?
“GENTLE exam” (anxiety)

Bracing

NO EVIDENCE

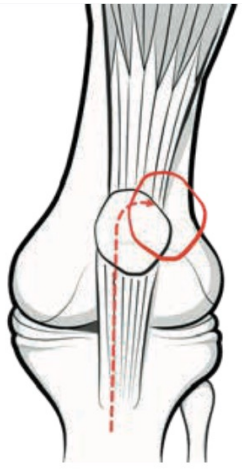
for both acute or non-acute

Do not consider this option

OR only in acute phase and short time period

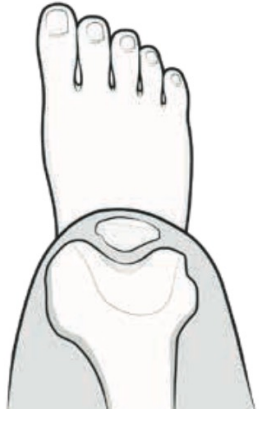
Diagnostic

Clinical exam



Knee pain
J-sign
Range of Motion
Apprehension test (Smillie)
Patellar glide test

Quadriceps Inhibition?



Imageries

X-rays + MRI

As soon as possible

- **Evaluate chondral and osteochondral fractures**
  Lipohemarthrosis
- **Highlights risk factors of recurrence**

Risk of recurrence

Main Factors

Trochlear dysplasia
Patellar height (CDI > 1.4)

Secondary

High TT-TG
Excessive femoral anteversion
Genu recurvatum
Genu valgum

100% of patellar dislocation are linked to risk factors

Diagnosis

X-rays

Trochlear dysplasia
Patellar height (Caton Deschamps index)

MRI

Trochlear dysplasia (Dejour V3 classification)
Patellar height (Modified CDI)
Patello-trochlear overlap (Sagittal Patellar Engagement)
TT-TG distance
Knee rotation

How to treat ?

Conservative treatment ++

Evaluate → **Recurrence Risk**
Risk factors
Associated injuries

How to treat ?

Recurrence

Low risk	**High risk**
Low grade dysplasia	High grade dysplasia
Normal patellar height	High patellar height
Normal TT-TG distance	High TT-TG distance
No associated lesions	Chondral lesions

Conservative treatment ++

Chondral surgery
A la carte procedures

Immature patient

How to treat ?

Recurrence

Low risk **High risk**

1) recurrence Risk ?
2) Discussion with the family +++

Always high risk of re-dislocation

Conservative treatment ++

A la carte procedures ++

Immature patient

How to treat ?

Conservative treatment

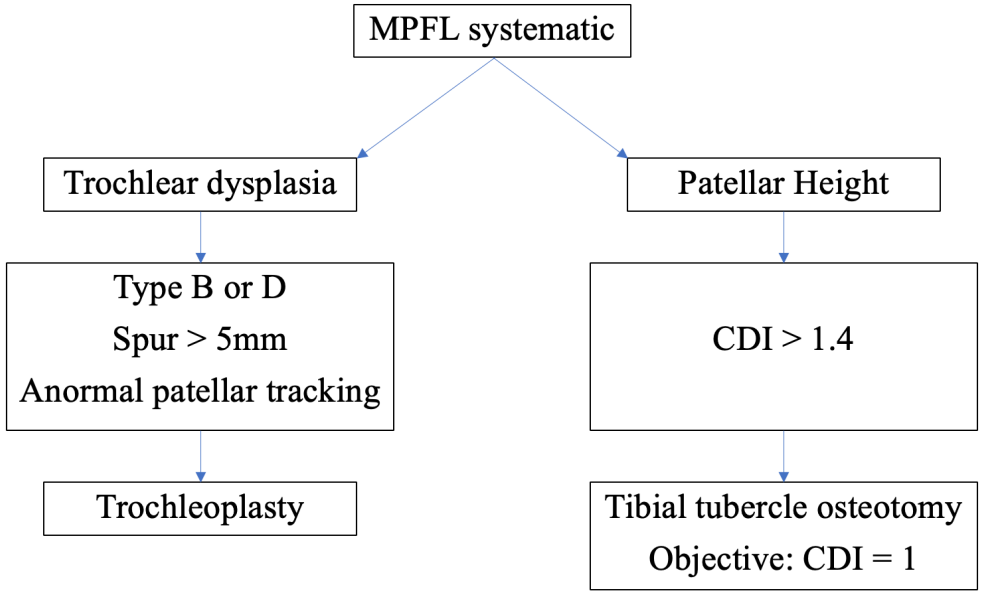
IS NOT the GOLD STANDARD ANYMORE

<u>High risk of recurrence</u> patients by definition

Surgery

Depending of recurrence risk factors
Discuss pros and cons

In case of
High risk of recurrence



MPFL repair or reconstruction?

Review > Orthop J Sports Med. 2021 Sep 28;9(9):23259671211026624.
doi: 10.1177/23259671211026624. eCollection 2021 Sep.

Comparing Nonoperative Treatment, MPFL Repair, and MPFL Reconstruction for Patients With Patellar Dislocation: A Systematic Review and Network Meta-analysis

Zhongcheng Liu [1], Qiong Yi [1], Liangzhi He [1], Changjiang Yao [1], Lanfang Zhang [2], Fan Lu [1], Xiaohui Zhang [1], Meng Wu [1], Bin Geng [1], Yayi Xia [1], Jin Jiang [1]

Reconstruction >>> Repair

> Orthop J Sports Med. 2024 Jan 8;12(1):23259671231221239. doi: 10.1177/23259671231221239.
eCollection 2024 Jan.

Comparison of Failure Rates at Long-term Follow-up Between MPFL Repair and Reconstruction for Recurrent Lateral Patellar Instability

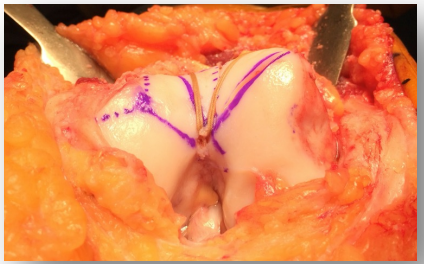
Bradley M Kruckeberg [1], Ryan R Wilbur [1], Bryant M Song [1], Abhinav Lamba [1], Christopher L Camp [1], Daniel B F Saris [1], Aaron J Krych [1], Michael J Stuart [1]

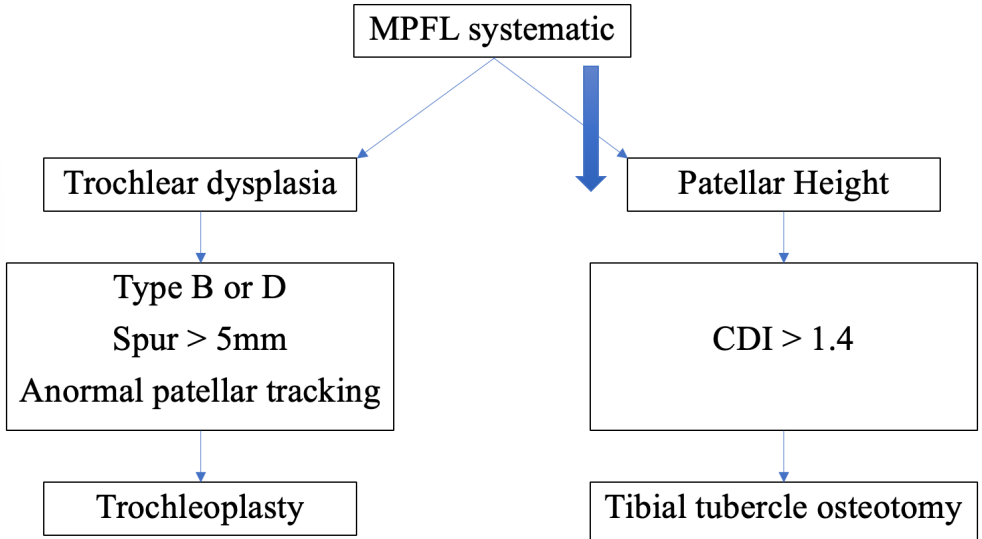
Lower failure rate (14% vs 41%)
Higher RTS
Better outcomes

Associated procedures

Depend on risk factors

Menu à la carte





How Does Isolated Medial Patellofemoral Ligament Reconstruction Influence Patellar Height?

Francesco Luceri,*†‡ MD, Julien Roger,† MD, Pietro Simone Randelli,§‖ MD, Prof., Sébastien Lustig,†¶ MD, PhD, Prof., and Elvire Servien,†# MD, PhD, Prof.
Investigation performed at the FIFA Medical Center of Excellence, Orthopaedics Surgery and Sports Medicine Department, Croix Rousse Hospital, Lyon, France

The American Journal of Sports Medicine
1–6
DOI: 10.1177/0363546520902132

Management of first time patellar dislocation

Take home message

Traumatic (High energy)
normal anatomy

↓

Treatment of
osteochondral fracture

⟷

« Atraumatic » (Low energy)
abnormal anatomy (risk factors)

↓

Rehabilitation
Evaluation of patellar instability

« acute » surgery?

1 reason

Chondral or osteochondral lesion

Refixation or repair > than fragment removal

Especially immature skeletal

Full imageries needed

Recurrence investigation needed

Add **concomitant procedures** if needed : “**menu a la carte**”

Management of first time patellar dislocation

Take home message

Traumatic (High energy)
normal anatomy

↓

Treatment of
osteochondral fracture

⟷

« Atraumatic » (Low energy)
abnormal anatomy (risk factors)

↓

Rehabilitation
Evaluation of patellar instability

Management of first time patellar dislocation

Take home message

Journal of *Clinical Medicine*

MDPI

Systematic Review

To Operate or Not? Evaluating the Best Approach for First-Time Patellar Dislocations: A Review

Roberto Tedeschi [1,*], Daniela Platano [1,2], Federica Giorgi [3] and Danilo Donati [4,5]

Home › Knee Surgery, Sports Traumatology, Arthroscopy › Article

Management of the first episode of traumatic patellar dislocation: an international survey

Knee | Published: 07 December 2022

Volume 31, pages 2257–2265, (2023) Cite this article

Riccardo D'Ambrosi, Filippo Migliorini, Simone Cerciello, Germano Guerra, Katia Corona, Laura Mangiavini, Nicola Ursino, Josip Vlaic & Mislav Jelic

The decision between surgical and conservative management should be **individualized**,

taking into account **patient-specific factors** and **potential risks**

HCL HOSPICES CIVILS DE LYON

Lyon 1

ORTHOPÉDIE Lyon Croix Rousse

LYON KNEE SCHOOL of SURGERY

Thank you

elvire.servien@chu-lyon.fr

HCL
HOSPICES CIVILS
DE LYON

Lyon 1

ORTHOPÉDIE
Lyon Croix Rousse

LYON KNEE
SCHOOL of SURGERY