Treatment of Complications of Operative Management of Patellofemoral Pain

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Wrong algorithms based on a biomechanical or structural paradigm for operative management of patellofemoral pain
(Chondromalacia patellae / Patellar Tilt / Lateral Patellar Subluxation)
The worst and the most challenging cases of AKP are iatrogenic in origin.
OBJECTIVES

Diagnostic pearls for evaluating the failed PF surgery patient

Operative salvage procedures such as reconstruction of the lateral patellar retinaculum and osteotomies
IMPI - Missed Epidemic

Results of Isolated Lateral Retinacular Reconstruction for Iatrogenic Medial Patellar Instability

Vicente Sanchis-Alfonso, M.D., Ph.D., Erik Montesinos-Berry, M.D., Joan Carles Monllau, M.D., Ph.D., and Alan C. Merchant, M.D., M.S.


Level V Evidence

Iatrogenic Medial Patellar Instability: An Avoidable Injury

Vicente Sanchis-Alfonso, M.D., Ph.D., and Alan C. Merchant, M.D.

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Deep Transverse Lateral Retinaculum Reconstruction for Medial Patellar Instability

Vicente Sanchis-Alfonso, M.D., Ph.D., Erik Montesinos-Berry, M.D., Joan Carles Monllau, M.D., Ph.D., and Jack Andrish, M.D.

Medial Patellar Instability: A Little Known Cause of Anterior Knee Pain

Vicente Sanchis-Alfonso, Cristina Ramírez-Fuentes, Francisco Martínez-Soriano, Joan C. Monllau, and Alan C. Merchant

A. Gobbi et al. (eds.), The Patellofemoral Joint, DOI 10.1007/978-3-642-54965-6_12, © ISAKOS 2014
Lateral Retinaculum Release

The Villain of the Picture
Trigger-Happy Orthopaedic Surgeon
Iatrogenic Medial Patellar Instability: An Avoidable Injury

Vicente Sanchis-Alfonso, M.D., Ph.D., and Alan C. Merchant, M.D.

Iatrogenic Medial Patellar Instability: An Avoidable Injury

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**Physical Findings**

*Increased medial patellar translation (0-30º) – Positive medial apprehension*

*Fulkerson Relocation Test*
“Reverse” McConnell Taping
The Problem

Stress Radiographs of the Patellofemoral Joint

ROBERT A. TEITGE, WADE FAERBER, PATRICIA DES MADRYL and THOMAS M. MATELIC

<table>
<thead>
<tr>
<th></th>
<th>N = 17</th>
<th>VAS</th>
<th>LYSHOLM</th>
<th>DEPRESSION</th>
<th>ANXIETY</th>
<th>KINESIOPHOBIA</th>
<th>CATASTROPHIZING</th>
</tr>
</thead>
<tbody>
<tr>
<td>PRE-OP</td>
<td></td>
<td>7.6 ± 1.5 (5-9)</td>
<td>36.4 ± 14.1 (20-55)</td>
<td>4 (24%)</td>
<td>10 (59%)</td>
<td>17 (100%)</td>
<td>7 (41%)</td>
</tr>
<tr>
<td>POST-OP</td>
<td></td>
<td>1.9 ± 2.4 (0-8)</td>
<td>86.1 ± 7.8 (70-94)</td>
<td>0</td>
<td>0</td>
<td>9 (53%)</td>
<td>0</td>
</tr>
<tr>
<td>2 yrs (2-8)</td>
<td></td>
<td>-5.7 ± 2.8</td>
<td>49.8 ± 15.9</td>
<td>P = 0.0625</td>
<td>P = 0.00097</td>
<td>P = 0.0039</td>
<td>P = 0.00781</td>
</tr>
</tbody>
</table>
Lateral Patellofemoral Ligament
We must always rule-out concomitant lateral patellar instability
Case#2

A.R.B 38 y/o

TT-TG 12 mm

20°

TT-TG 0 mm
A.R.B 38 y/o

Stress Radiographs of the Patellofemoral Joint

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Reconstruction Lateral Retinaculum


Anterolateral transfer of the tibial tubercle TT-TG 10-15 mm
Case # 2

Preop

20°

Preop

Postop

20°

Postop

Preop
For a successful PFA it is necessary to correct the patellofemoral mal-tracking.
Complications of surgical treatment of AKP

PATELLA INFERA

Tibial Tubercle

Osteotomy and PFA
Case # 4
Sulcus Deepening Trochleoplasty

“An excellent salvage surgery“
Relative Contact Pressure on the Patellar Cartilage

**S.R.G / Non-Anatomic MPFL reconstruction with non-satisfactory result (Semitendinosus)**

<table>
<thead>
<tr>
<th>Flexion Angle</th>
<th>Maximum MPFL Stress (MPa)</th>
<th>Maximum LR Stress (MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>60°</td>
<td>19.51 (Proximal)</td>
<td>4.56</td>
</tr>
<tr>
<td>90°</td>
<td>29.52 (Proximal)</td>
<td>7.54</td>
</tr>
<tr>
<td>120°</td>
<td>34.70 (Proximal)</td>
<td>8.37</td>
</tr>
</tbody>
</table>
**Relative Contact Pressure on the Patellar Cartilage**

S.R.G / Anatomic MPFL reconstruction (semitendinosus) and sulcus deepening throclopleastory with satisfactory result

<table>
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<tr>
<th>Flexion Angle</th>
<th>Maximum MPFL Stress (MPa)</th>
<th>Maximum LR Stress (MPa)</th>
</tr>
</thead>
<tbody>
<tr>
<td>30°</td>
<td>3.63 (Proximal)</td>
<td>0.043</td>
</tr>
</tbody>
</table>

Max. Press.: 0.007 MPa

S_{press} (Avg: 75%)

- +2.83e+00
- +2.453e+00
- +2.069e+00
- +1.685e+00
- +1.301e+00
- +9.167e-01
- +5.326e-01
- +1.485e-01
- -2.356e-01
- -6.197e-01
- -1.004e+00
- -1.388e+00
- -1.772e+00
Tissue Homeostasis
Only in a few patients with AKP the structural and biomechanical paradigm is valid.
Example
Squinting Patella

Post-Op in Surgery
view from head

Pre-Op

1 yr Post-Op

Courtesy Bob Teitge, MD
A possible complication after internal tibial rotational osteotomy is peroneal nerve palsy

Peroneal nerve release
The treatment of non-operated AKP patient is many times nothing else but frustrating. However, the situation can get much worse in patients with badly indicated or malperformed previous surgery to treat AKP. Therefore we must be very cautious when indicating a surgical treatment in the AKP patient.
“Primum non nocere”

We must not do harm or make a poor situation much worse

International Museum of Surgical Science Chicago, USA
Thank You

谢谢

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