INFERIOR POLE PATELLAR FRACTURE

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Case Presentation

• 50 years old woman
• Motor vehicle accident
• 10 cm wound in the L knee
• Xray

Diagnosis: Open inferior pole of L patellar fracture

Treatment: Debridement + Fixation
Function

- Pulley
- Guiding forces
- Protection

Function


Patellofemoral contact zones

Patellar height

Insall-Salvati Ratio

\[ r = \frac{A}{B} \]
Treatment goals

- Pulley
- Guiding forces
- Protection

- Restore extensor mechanism
- Minimizing bone loss
- Maximizing articular congruity
- Early mobilization

Treatment

• Modified tension band wiring
• Tension band wiring + screw
• Partial patellectomy
• Suture anchors
• Basket plate
• Vertical wiring
• Suture fixation

What is the appropriate treatment?
Modified Tension Band Wiring

Prerequisites:

• A fracture bone - withstands compression

• Intact cortical opposite to the tension band

• A fixation - withstands tensile forces

Modified Tension Band Wiring

Modified Tension Band Wiring

PreOP  PostOP  6 moths FU

Modified Tension Band Wiring
Partial Patelllectomy

Partial Patellectomy

<table>
<thead>
<tr>
<th></th>
<th>No of Patients</th>
<th>FU (moths)</th>
<th>Results</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choudry (2014)</td>
<td>10</td>
<td>6</td>
<td>Good : 100%</td>
</tr>
<tr>
<td>Bonnaig (2015)</td>
<td>26</td>
<td>35</td>
<td>PP = ORIF</td>
</tr>
<tr>
<td>Joshi (2016)</td>
<td>10</td>
<td>?</td>
<td>Bostman scale : 14.9</td>
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</tbody>
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Partial Patellectomy

Radiograph of the knee of 71 year-old man, 2.5 years after inferior pole resection, showing decreased patellar height and arthritis of the patellofemoral joint on the affected side.

Basket plate

Suture anchors

Vertical wiring

Krakow whip stitch - Suture Repair

Treatment

PreOP
Treatment

How can we improve the result?
Improve the result
Take home message

• Inferior pole patellar fracture: 9 – 22% - usually comminuted

• Various methods to fix but the ideal has not been identified
“Surgery went well, Mr. Moore. I had a lot of fun rebuilding your knee joint.”

Thanks for your attention!