“Proximal Tibiofibular Dislocation versus Fibular Head Osteotomy in a Closing-Wedge High Tibial Osteotomy: Radiological and Clinical Repercussion on the Stability of the Lateral Compartment of the Knee, a Prospective Randomized Study”
The authors declare:

*We have no financial conflicts to disclose in this study.*
Introduction

- Closing Wedge High Tibial Osteotomy (CWHTO)

- How to manage the Proximal TibioFibular Joint (PTFJ) for closing the osteotomy?
  - 1. Dislocation
  - 2. Fibular head osteotomy

Any repercussion on the lateral stability of the knee?

Is this fact clinically relevant?
Purpose

- The aim of this study was to determine whether the different ways of surgically managing the proximal TFJ had any radiological and/or clinical repercussion on lateral knee stability in those patients who had undergone a CWHTO.

- The main hypothesis of this study was that a TFJ dislocation increased lateral compartment gapping more than a fibular head osteotomy (FHO). A second hypothesis was that this fact had a limited clinical repercussion.
**Mat & Meth**

Prospective randomized study

36 consecutive patients underwent CWHTO

GROUP 1
FHO (Fibular head osteotomy)  
18 patients

GROUP 2
TFJ (TibioFibular joint dislocation)  
18 patients

Radiology*
Lateral stress radiograph at 0º and 30º of knee flexion

Clinically*
Knee Society Score (KSS)

*Preoperatively and 6-months postoperatively
Varus stress radiological image at full extension (left) and 30° (right) of knee flexion in a patient randomized to Group 2. The measurement (in millimetres) was done between the central aspect of the lateral femoral condyle and the corresponding lateral tibial plateau.
### Results

Both groups were similar.

7° of varus was observed in both groups preoperatively.

Number of degrees corrected was also similar in both groups.

<table>
<thead>
<tr>
<th></th>
<th>Group 1</th>
<th>Group 2</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (years)</td>
<td>52.6 (SD 10.1)</td>
<td>53.3 (SD 7.7)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Gender (male/female)</td>
<td>13/5</td>
<td>14/4</td>
<td>n.s.</td>
</tr>
<tr>
<td>Body mass index (Kg/m²)</td>
<td>27.6 (SD 3.9)</td>
<td>27.2 (SD 4.2)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Side (right/left)</td>
<td>11/7</td>
<td>8/10</td>
<td>n.s.</td>
</tr>
<tr>
<td>Previous FT angle</td>
<td>173.57 (SD 1.9)</td>
<td>173.2 (SD 2.5)</td>
<td>n.s.</td>
</tr>
<tr>
<td>Number of corrected degrees</td>
<td>10° (SD 2.5)</td>
<td>8.7° (SD 2.3)</td>
<td>n.s.</td>
</tr>
</tbody>
</table>
Results

<table>
<thead>
<tr>
<th></th>
<th>Operated knee</th>
<th>Healthy knee</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group 1</td>
<td>Group 2</td>
<td>p-value</td>
</tr>
<tr>
<td>0°</td>
<td>1.3 (SD 1.8)</td>
<td>4.5 (SD 2.4)</td>
<td>0.006</td>
</tr>
<tr>
<td>30°</td>
<td>1.9 (SD 1.2)</td>
<td>5.2 (SD 3.1)</td>
<td>0.01</td>
</tr>
<tr>
<td></td>
<td>Group 1</td>
<td>Group 2</td>
<td>p-value</td>
</tr>
<tr>
<td>0°</td>
<td>0.4 (SD 1.4)</td>
<td>0.1 (SD 1.5)</td>
<td>n.s.</td>
</tr>
<tr>
<td>30°</td>
<td>0.2 (SD 1.2)</td>
<td>0.2 (SD 1.7)</td>
<td>n.s.</td>
</tr>
</tbody>
</table>

Difference (in mm) between the pre and post-operative measurements with regard on the knee lateral compartment gapping in varus stress radiograph at full extension and 30° degrees of knee flexion in both knees (operated and healthy).

In the group 2 (Dislocation) the ammount of lateral knee gapping observed is higher than observed in group 1 (fibular head osteotomy) at 0° and 30° of knee flexion.
… but this fact seems has not clinical repercussion measured with the KSS at 6 months postoperatively

<table>
<thead>
<tr>
<th></th>
<th>Preoperative</th>
<th>Postoperative</th>
<th>p-value</th>
<th>p-value</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Group 1</td>
<td>Group 2</td>
<td>Group 1</td>
<td>Group 2</td>
</tr>
<tr>
<td>KSS knee</td>
<td>54.8 (SD 11.1)</td>
<td>54.7 (SD 11.7)</td>
<td>n.s.</td>
<td>93.5 (SD 5.5)</td>
</tr>
<tr>
<td>KSS function</td>
<td>71.7 (SD 5.2)</td>
<td>68.4 (SD 8.1)</td>
<td>n.s.</td>
<td>92.8 (SD 5.5)</td>
</tr>
</tbody>
</table>
- Laprade et al considered that latearal gapping greater than 4-mm was suggestive of posterolateral corner injuries
- In our series these values were greater to this value at 0º and 30º of knee flexion in those patients allocated in Group 2.

- It seems these results has not clinically relevance measured with the KSS

LIMITATIONS

KSS is not very sensitive in measure latearal stability
6 months for measuring the clinical relevance
The mean age of patients
CONCLUSIONS

1. Tibiofibular joint dislocation during a CWHTO increases lateral knee compartment gapping when compared to a fibular head osteotomy.

2. This fact is not translated into clinical lateral instability.
References


