



7th Advanced Course on Knee Surgery - 2018:

"Different types of Patellar-Femoral prosthesis"

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Indications/Contraindications for PF UKA

- Bone-on-bone OA in the PF joint
- Preserved cartilage in FT compartments
- Preserved ligament function
- No malalignment
- No inflammatory arthritis
- No severe instability and/or maltracking
-and more depending on the surgeon / study



Imaging





"Inlay" Vs. "Onlay" implants

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Filling a hole Vs. covering the entire surface



1st Generation PF UKA - characteristics

- Development in the 1970's
- So-called "Inlay" implants
- *Resurfacing of the trochlea cartilage*
- Rotation according to the native anatomy
- Narrow components with relative deep grooves
- Limited proximal to distal coverage
- Limited assistance from cut/saw guides / "free-hand" driven



1st Generation PF UKA - problems

- Mal-tracking
- Narrow and short implants with too much constraint
- Catching / "Clunking"
- Pain (Crepitus)
- Instability
- Unacceptable (high) revision rates



2nd Generation PF UKA - development

- Complete replacement of anterior compartment ("TKA style")
- So-called "Onlay" implants
- Broad trochlea flange
- Valgus angle of groove
- Extended prox. to distal, sagittal curvature
- Improved guidance by cut/saw guides



PFJ, ZimmerBiomet



2nd Generation PF UKA – Biomechanical improvements

- Improved rotational alignment (despite hypoplasia)
- *M/L*: Better support and less need for constraint
- *Q-angle: More physiological tracking (spec. females)*
- *P/D: Better engagement of patella in ROM (spec. patella alta)*



1st VS 2nd Generation PF UKA









- Complete replacement of anterior compartment, by intrameduallar cutguides
- Straight forward decisions on setting the rotational alignment

All pictures: PFJ, ZimmerBiomet







- Size templating for optimal M/L coverage
- Assessment of direction of patellofemoral track
- Gude system for accurate bone removal





- Assistance from guides throughout the procedure
- Smooth transition between implant and cartilage
- Trials for assessment before implantation









• Smooth biomechanics with no catchment of the patella



Choice of implant - Results: Changes over time?



Ref.: Van der List JP, et al, KSSTA, 2017



Choice of implant - Results: 2nd Gen. PF UKA

2nd Generation PF UKA Vs TKA

Systematic Review in progress:

- *Revision rates have decreased (but are higher than in TKA):*
 - 7,5 % revisions. Average time to revision: 36,5 months.
 - Progression of OA / pain is now the most frequent cause (86 %)
 - Highlights that patient selection is important
 - Mechanical problems are rare (4 %)
- Patient reported outcome similar to TKA for PF-OA:
 - AKSS knee score: 89,2 vs 91,8 (PFA vs TKA)



Conclusion

- Encourage the use of 2nd Generation implants
- Look for technical features of the implant and technique
- Improved results have been achieved
- Be alert to select the correct patients