



Patellofemoral Osteoarthritis is Not a Contraindication for Unicompartamental Knee Replacement. Report of 110 Prostheses With an Average 6-Year Follow-UP



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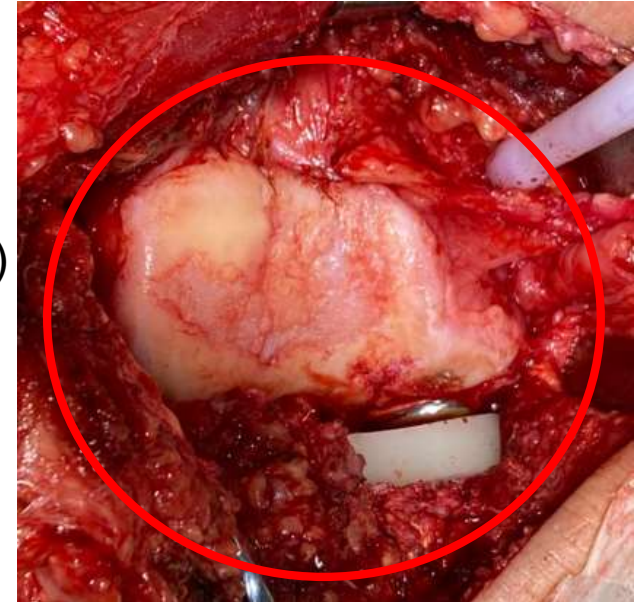
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Introduction

Image. Medial UKA with associated Outerbridge 4 lesion in femoral trochlea



Unicompartmental Knee Arthroplasty (UKA)

- Could be used in >50% knee replacements
- Classical indications are restrictive to 6-8%
- Associated patellofemoral osteoarthritis (PFJ-OA) as contraindication is being challenged

- Purpose:

“To assess clinical and functional outcomes, complication rate, and mid-term implant survival in lateral or medial UKA, regardless of clinical symptoms or radiographic signs of associated PFJ-OA ”

Methods

- **Associated PFJ-OA (Rx or symptoms) was NOT contraindication for UKA**
- Retrospective and comparative report
- All lateral UKA and all bilateral simultaneous medial and lateral UKA between January 1999-2020
- Minimum follow-up of 1 year

- Evaluation:
 - Intraoperative PFJ-OA according to Outerbridge
 - Results comparison between groups
 - KSS score system 2011
 - Complications
 - Prosthesis survivorship



Image. Genu valgum with associated PFJ-OA

Methods

- In all cases, PFJ-OA was treated
 - systematically
 - in a tailored, stepwise fashion according to its severity
- Lateral retinaculum release 100% cases
- Outerbridge:
 - 2. Chondral shaving + osteophytes excision
 - 3. + Microfractures (1.5mm K-wire)
 - 4. + Lateral patellar facetectomy if necessary (usually valgus knees)

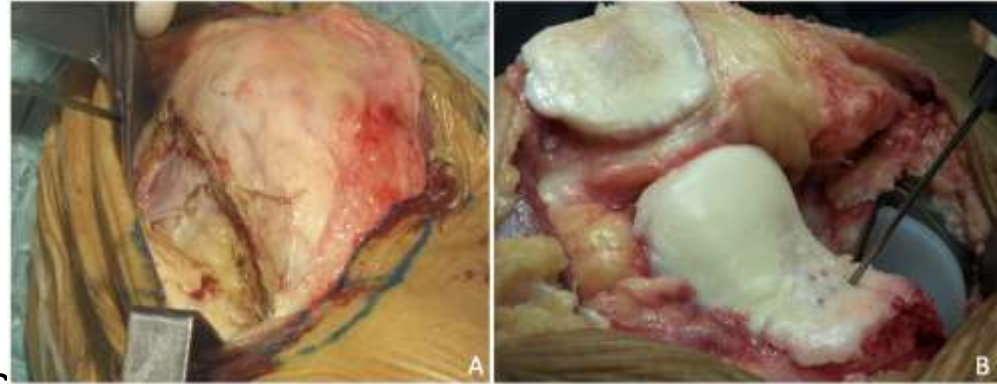


Image 1. A) Lateral retinaculum release. B) Microdrilling in trochlea surface

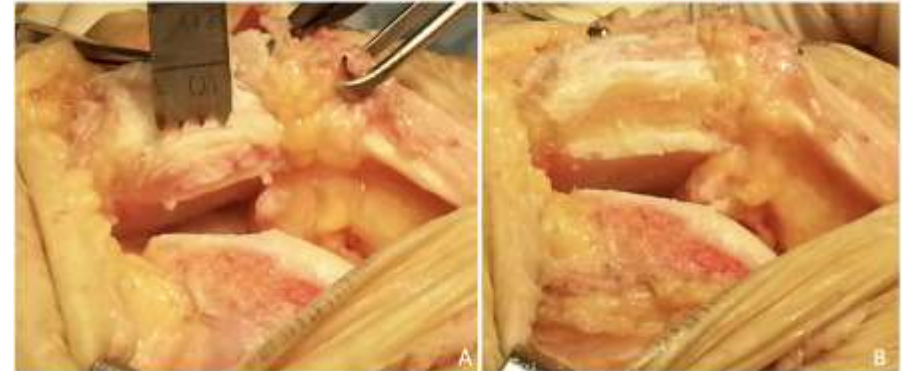


Image 2. Lateral patellar facetectomy with saw

Surgical Technique

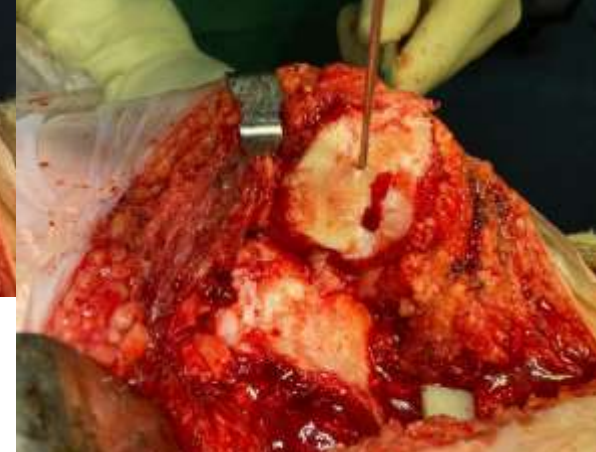
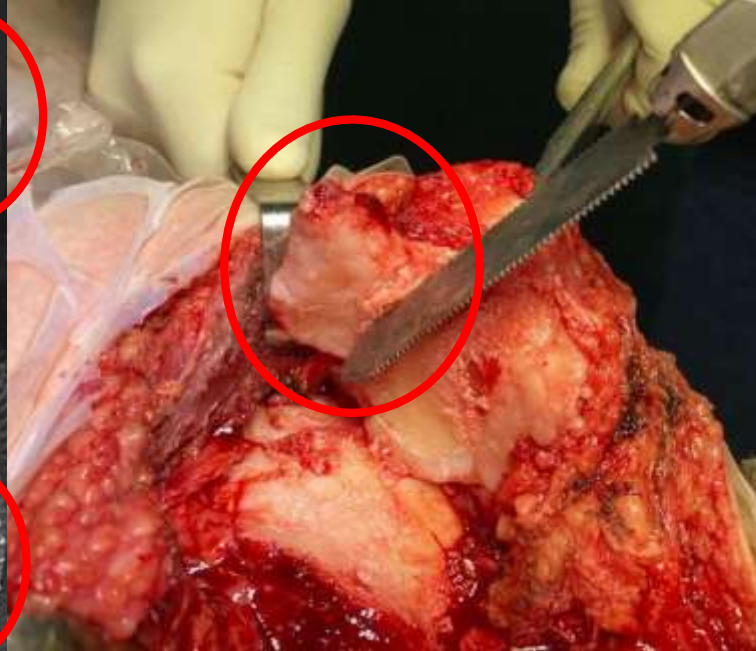


Image. Medial UKA with associated Outerbridge 4 PFJ-OA

N: 110 UKA

Results

Total UKA	110
- Medial UKA	81 (73.6%)
- Lateral UKA	29 (26,4%)
Age (years)	65.8 (8.4) años
BMI	29.2 (4.1)
Follow-up (years)	6 (1-19.5)
Gender	
- Male	30 (27.3%)
- Female	80 (72.7%)

- Outerbridge:

- II - 22 cases (20%)
- III - 59 cases (53.6%)
- IV - 29 cases (26.4%)

- Valgus

- Kellgren-Lawrence
100% IV

- Varus (Ahlback)

- 8 (9.9%) III
- 35 (43.2%) IV
- 38 (46.9%) V

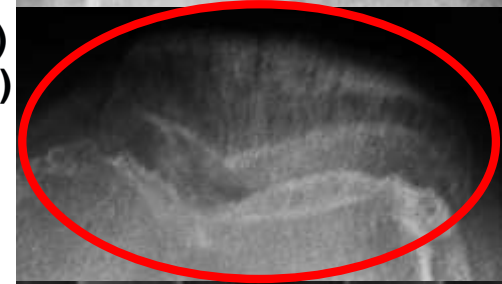
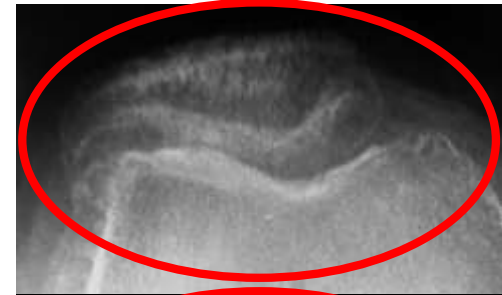


Image. Bilateral genu valgum with associated FPJ-OA

Results

	PreOP	PostOP	P
Clinical KSS	50 ± 7.7	85.7 ± 5.2	<0.005
Functional KSS	26 ± 12.9	92.4 ± 8.9	<0.005
Max. flexion	106.4° ± 5.6°	124.9° ± 3.8°	<0.005
Flexion contracture	7° ± 2.7°	2° ± 1.7°	<0.005
Femorotibial Axis			
- Varus	9° ± 2.3°	3.6° ± 1.4°	<0.005
- Valgum	12.3° ± 4.1 °	5.2° ± 3.1°	<0.005



Image. Bilateral lateral UKA associated with bilateral lateral patellar facetectomy

All 3 groups showed a statistically significant increase in KSS scores and range of motion as compared to their preoperative status

Results

OUTERBRIDGE	Total	2	3	4	P
N	107	21	57	29	
Diference Clinical KSS	35.7 (7.7)	33.7 (9.1)	35.1 (7.2)	38.3 (7.1)	0.075
Diference Functional KSS	66.3 (11.6)	61.2 (14.3)	68.6 (11.4)	65.6 (8.7)	0.040
Diference flexion	20.0 [15.0,20.0]	15.0 [15.0,20.0]	20.0 [15.0,20.0]	20.0 [15.0,20.0]	0.042
Diference flexion contracture	-4.9 (1.8)	-4.8 (2.3)	-4.8 (1.7)	-5.3 (1.5)	0.373

- No significant differences in Clinical KSS improvement and flexion contracture between Outerbridge groups (p=0.07 and p=0.37, respectively)

- Group 3 showed statistically significant improvement in functional KSS when compared to group 2 (p=0.04)

- In maximum flexion, groups 3 and 4 did significantly better than group 2 (p=0.04)

PFJ-OA grade did not have a negative impact on patients' clinical and functional outcomes

Results

Complications n:7 (6.4%)

- 2 Mobilization under anesthesia
- 4 minor wound problems
- 1 arthroscopy by meniscal lesion

Revision n:3 (2.7%)

- Aseptic loosening after 7, 8.6 and 12 years
- **1 Outerbridge 2 and 2 Outerbridge 3**
- [None due to FPJ symptoms](#)

Prostheses survivorship 97.3% at 6 years

- At 5 years 100%
- At 7 years 97%
- At 9 years 93%
- At 12 years 89%



Image. 18 years follow-up medial UKA with flat tibial component

Discussion

RESEARCH ARTICLE

Open Access

Does patellofemoral osteoarthritis affect functional outcomes and survivorship after medial unicompartmental knee arthroplasty? A meta-analysis

Feifei Lu¹, Yan Yan¹, Weiguo Wang², Qidong Zhang^{3*} and Warehou Guo^{4*}

Journal of Orthopaedic Surgery and Research

2020

- 8 studies
- 3975 medial UKA
- = functional results
- = revision
- NO contraindication

Medial Unicondylar Knee Arthroplasty Improves Patellofemoral Congruence: a Possible Mechanistic Explanation for Poor Association Between Patellofemoral Degeneration and Clinical Outcome

Ran Thein, MD^a, Hendrik A. Zuiderbaan, MD^a, Saker Khamaisy, MD^a, Danyal H. Nawabi, MD^a, Lazaros A. Poultsides, MD, MSc, PhD^b, Andrew D. Pearle, MD^a

The Journal of Arthroplasty 2015

- = functional results
- Improves PFJ congruence

Preoperative pain location is a poor predictor of outcome after Oxford unicompartmental knee arthroplasty at 1 and 5 years

A. D. Liddle · H. Pandit · C. Jenkins · A. J. Price · C. A. F. Dodd · H. S. Gill · D. W. Murray

2015

KSSTA
Knee Surgery
Sports Traumatology
Arthroscopy

- Anterior pain is NOT a contraindication for UKA



Image. Lateral UKA associated with lateral patellar facetectomy and lateral release

Conclusion



- Medial or lateral UKA regardless of PFJ-OA
 - Safe procedure
 - Low complication rates
 - Mid-term favorable results
 - Allows extending UKA indications
- UKA
 - Restore PFJ kinematics
 - Improve femorotibial and PFJ pain
- Crucial:
 - Surgical technique
 - Trained surgeon



Image. Partial lateral retinaculum release

We believe that associated PFJ-OA is not a contraindication for UKA when treated systematically based on its severity

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