

Artrosis femoropatelar
Solución metálica

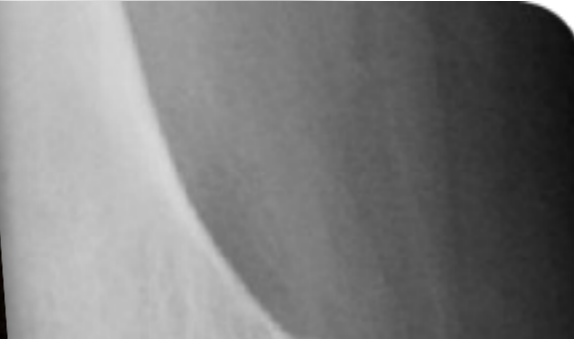
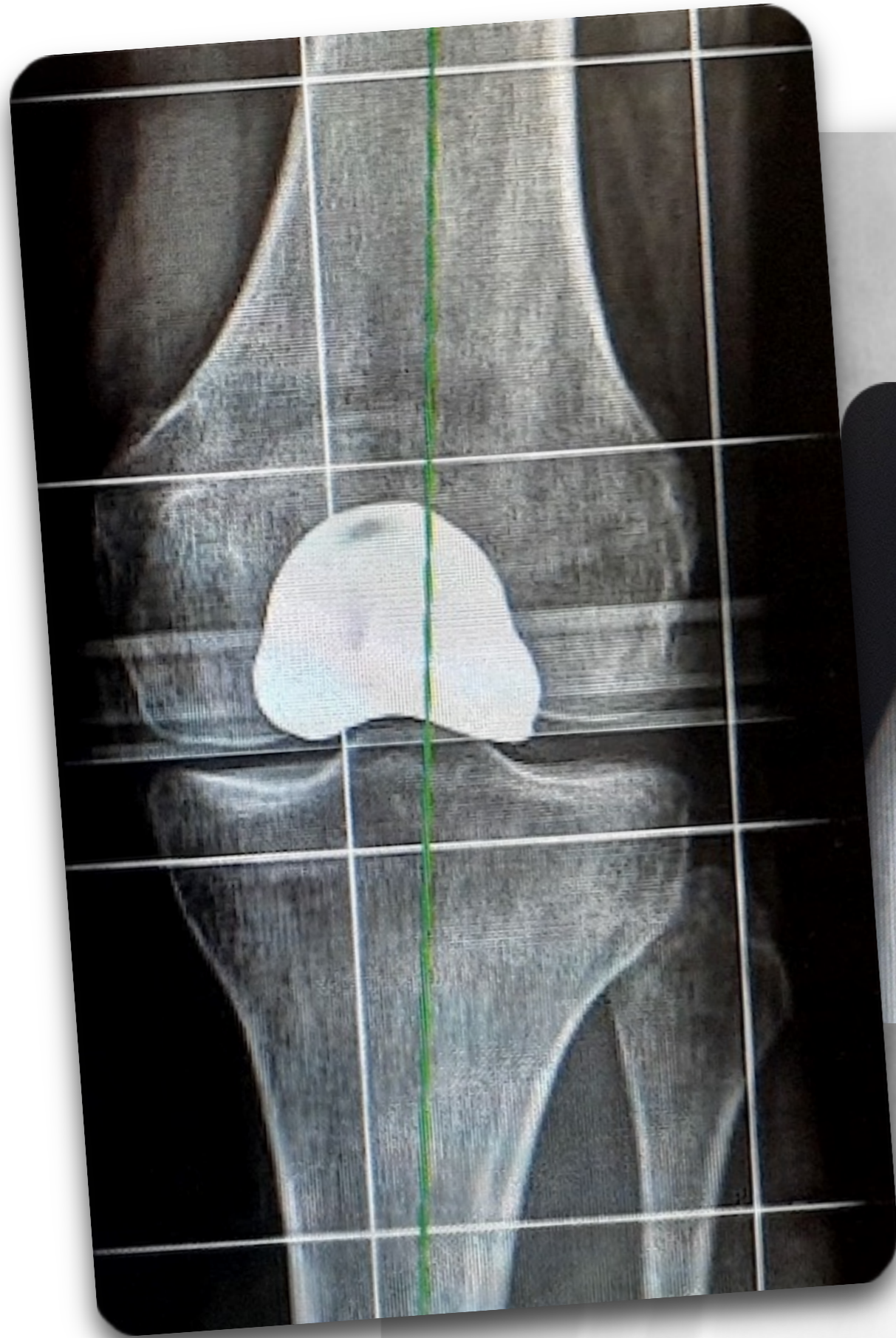
Juan I. Erquicia

Mi Tres Torres. Imove - Barcelona

Fundación Universitaria Althaia - Manresa



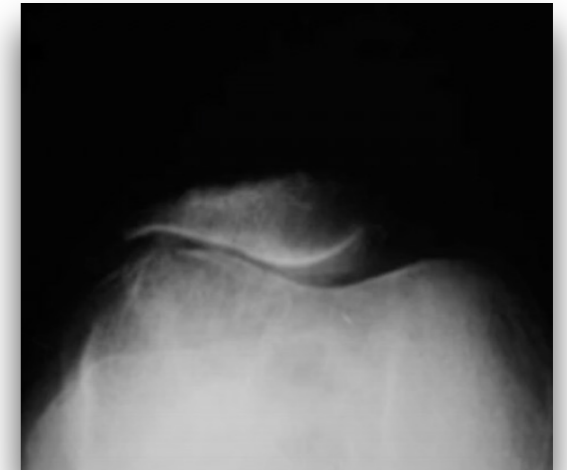
Sin conflictos de interés con la siguiente presentación



Artrosis femoropatelar

Introducción

- Frecuente (25% población > 20 años), rara vez sintomática
- 72% mujeres (displasia troclear, > ángulo Q)
- Dolor anterior, afecta AVD (escaleras, pendientes, levantarse silla, dificultad squat)

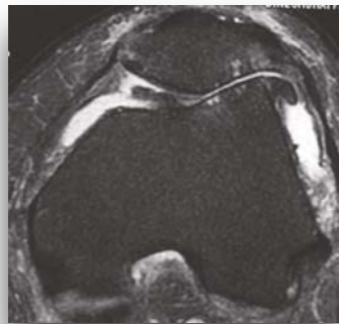


Artrosis femoropatelar

Etiología

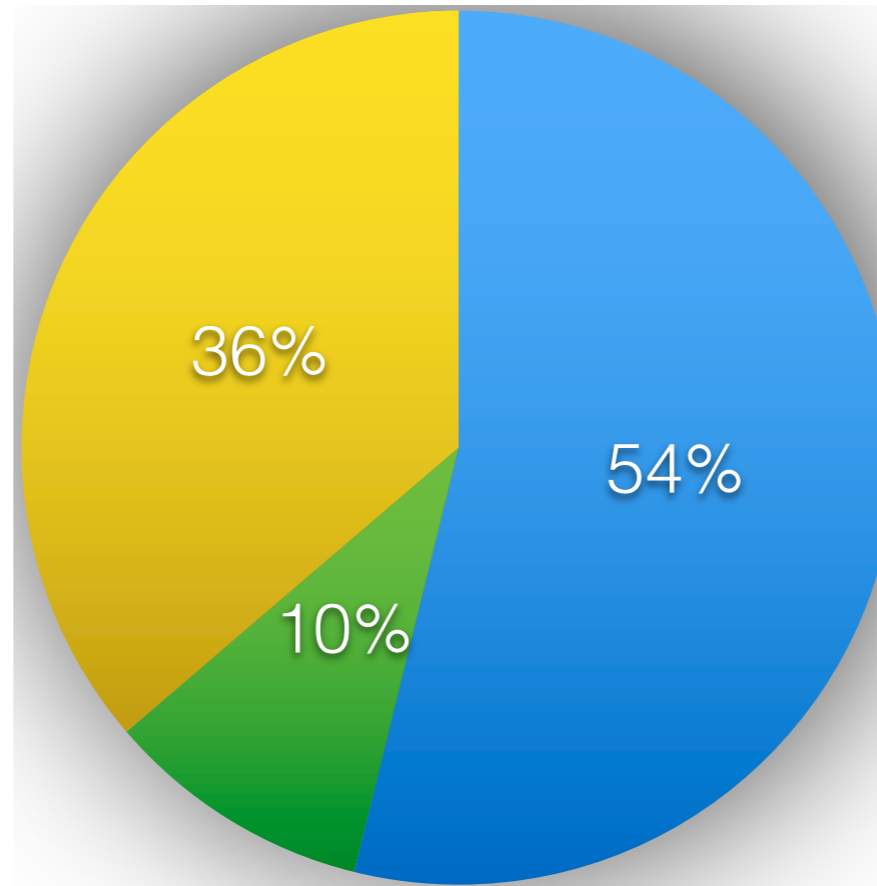
Inestabilidad

- 50-55a
- 66% displasia
- y/o patela alta
- bilateral



Primaria

- > 60a
- Sobrepeso
- 38% displasia
- OA simétrica



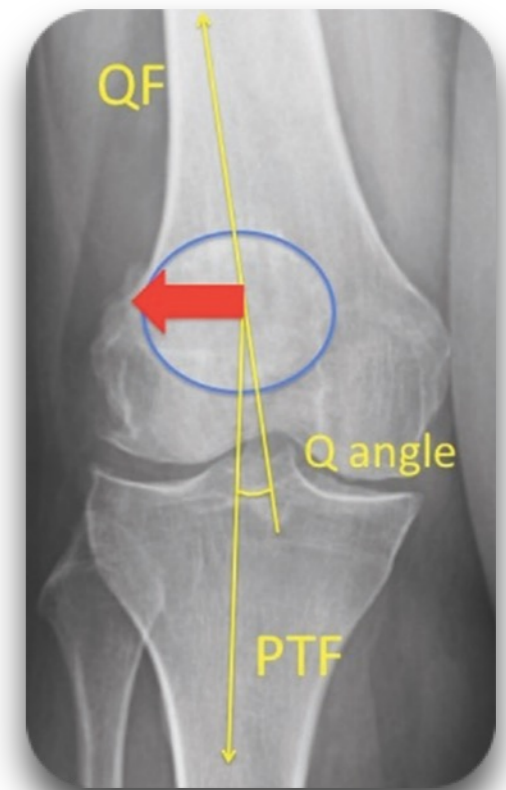
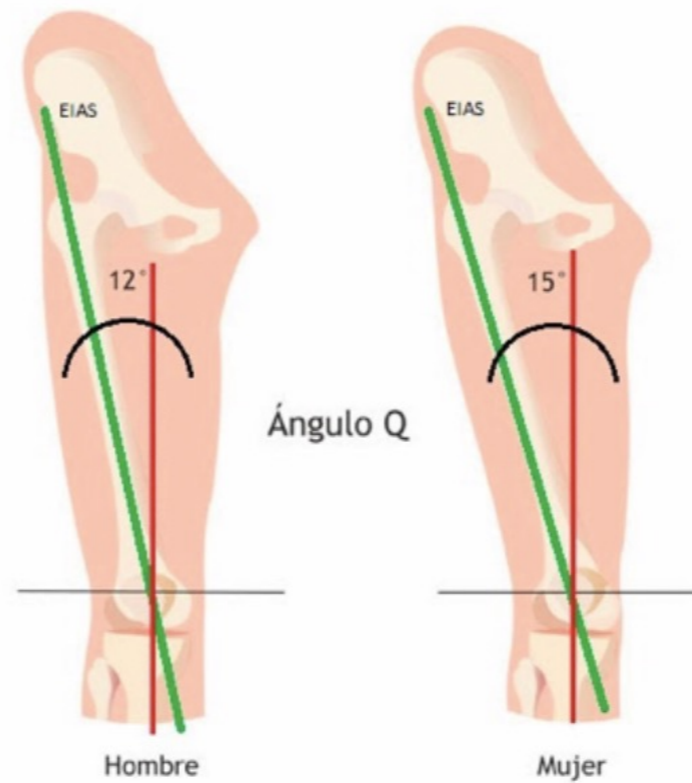
Post-traumática

- < 50a



Artrosis femoropatelar

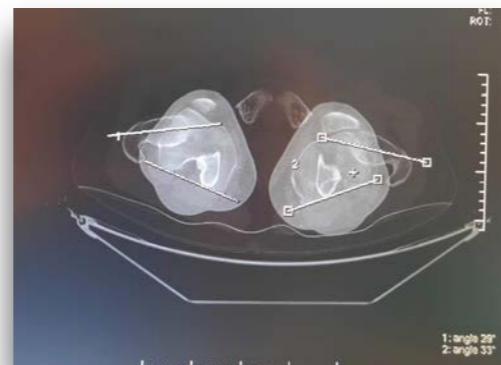
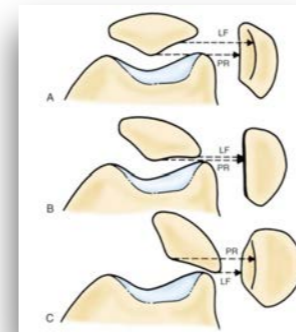
Biomecánica



Artrosis femoropatelar

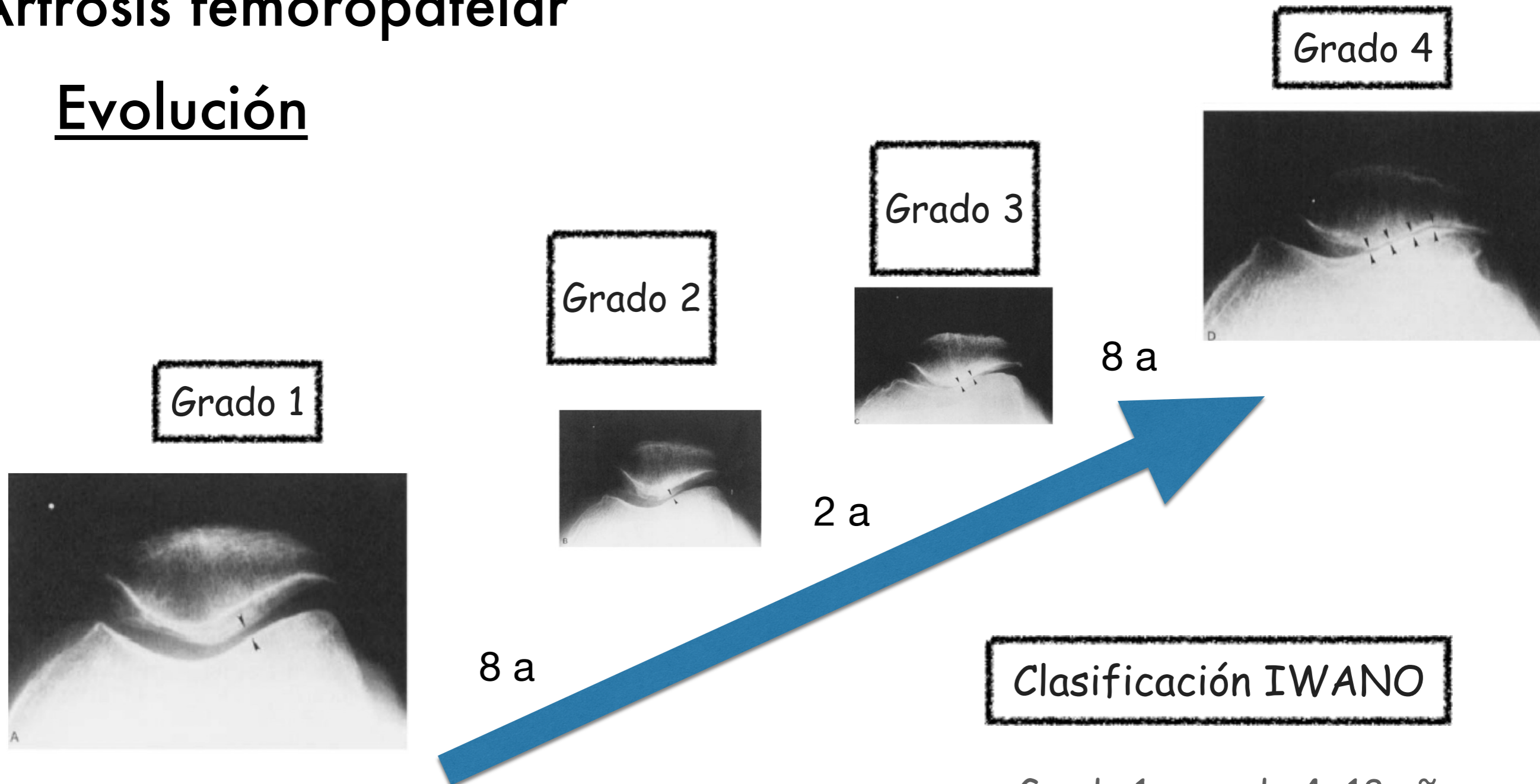
Estudio por imágenes

- Telemetría
- Schuss
- Perfil
 - Caton-Deschamps index
 - Tilt patelar.
- Axial **30°**
 - Disminución espacio articular
- RNM
- TAC torsional



Artrosis femoropatelar

Evolución



Clasificación IWANO

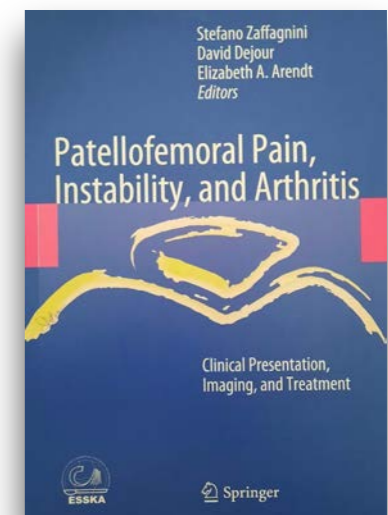
- Grado 1 - grado 4: 18 años
- Prevalencia: 9% > 40 años
- PFP: 2-3% de todas las PTR

Iwano classification from on 'Roentgenographic and Clinical Findings of Patellofemoral Osteoarthritis', Iwano et al. CORR, 252, 1990

Artrosis femoropatelar

Indicaciones de PFP

- 1- artrosis FP aislada, avanzada (Iwano III-IV)
- 2- Síntomas FP severos
 - Afectando AVD
- 3- Falta respuesta a tto no qx
- 4- Ausencia de desalineación FP
 - O corrección intraoperatoria



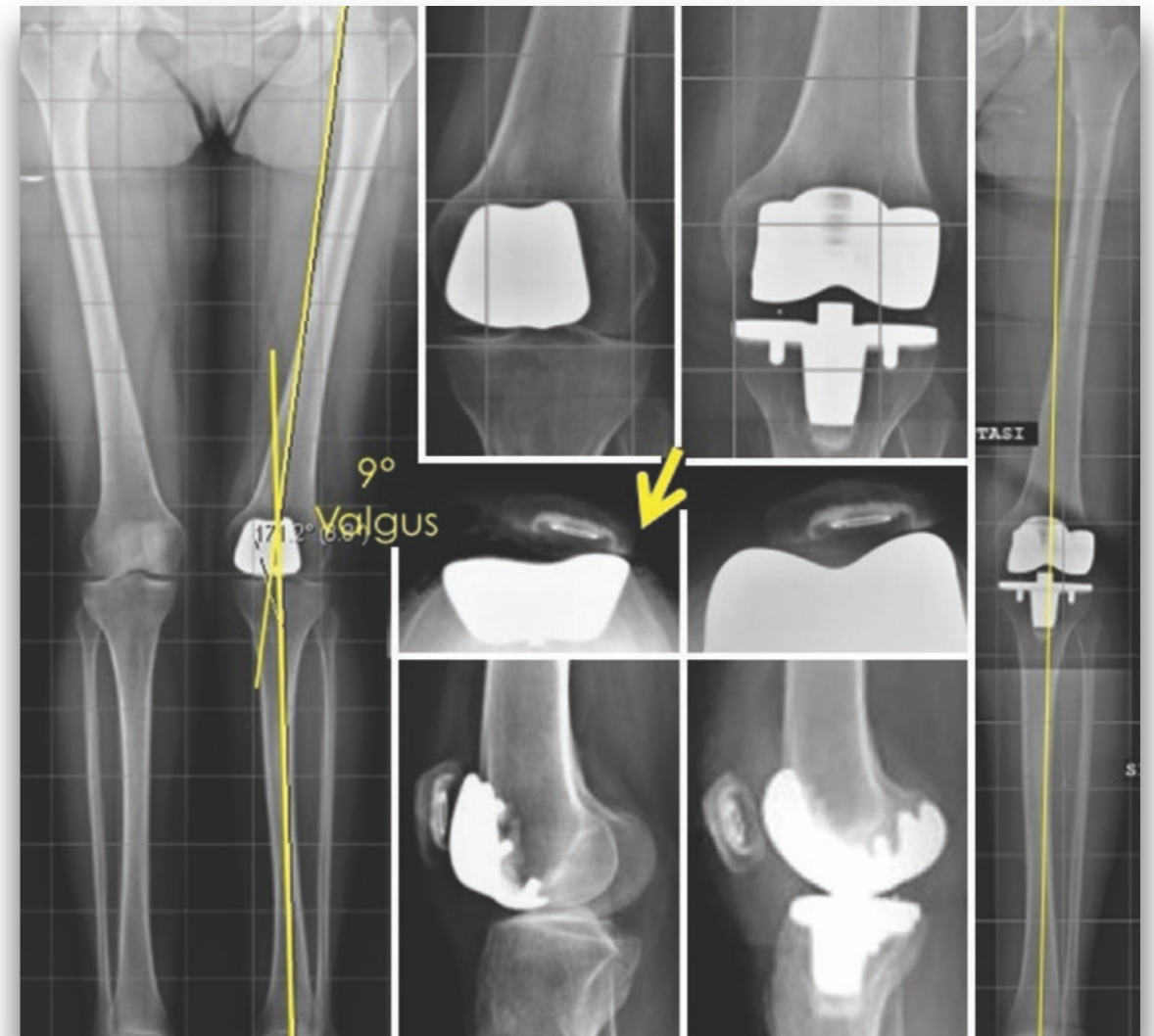
Bellemans J, Vandenneucker H

Isolated patellofemoral osteoarthritis: prosthetic indication (Chapter 36)
In S. Zaffagnini et al, Patellofemoral Pain, Instability and Arthritis (Springer 2010)

Artrosis femoropatelar

Contradicaciones de PFP

- 1- Artrosis FT incipiente
- 2- Inestabilidad y/o lesión meniscal
- 3- Desalineación FT ($>5^\circ$...)
- 4- Infección
- 5- Flexo $> 10^\circ$
- 6- Artropatía inflamatoria
- 7- BMI > 30 ...
- 8- Evidencia de componente
psicosomático/síndrome dolor regional
crónico



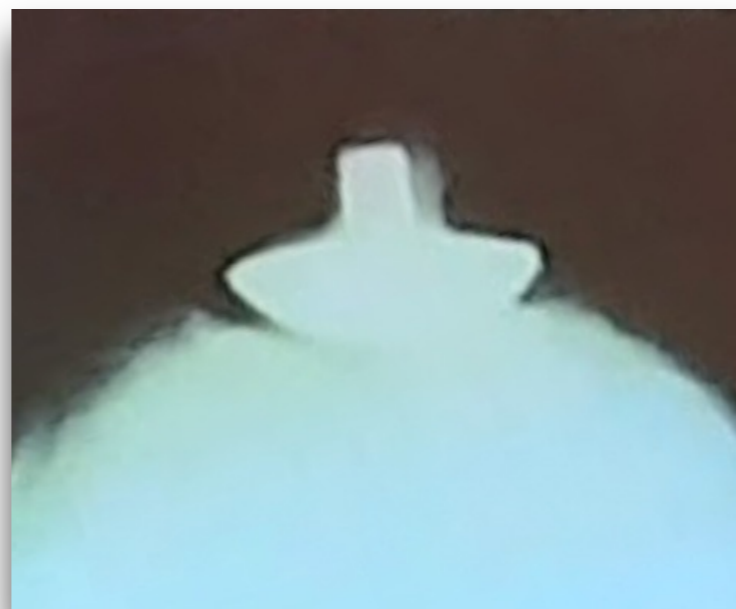
Artrosis femoropatelar

Historia Prótesis patelares

- Mc Keever, 1949 (1955)



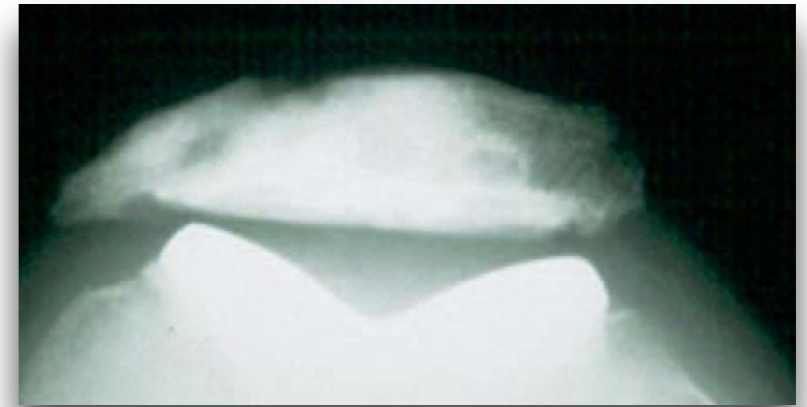
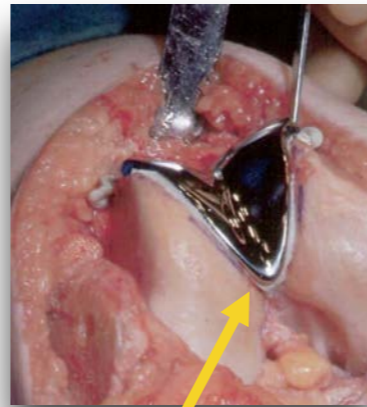
- Insall, 1970
- Aglietti, 1975



Artrosis femoropatelar

Historia PFP 1era generación (tróclea simétrica)

- Richards I, II, III (1974)



Angulo Merchant 136°

- Lubinus (1975)



Angulo Merchant 150°

Artrosis femoropatelar

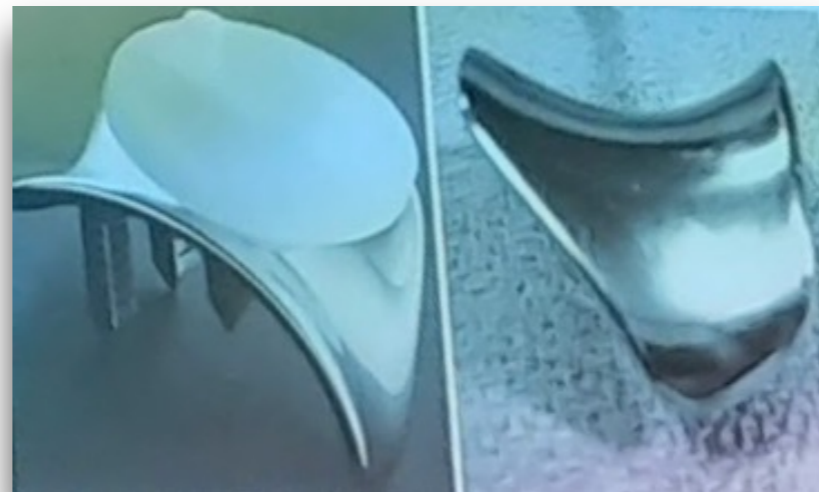
Historia

PFP 1era generación (tróclea asimétrica)

- LCS



- Esfero-céntrica



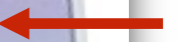
Artrosis femoropatelar

Historia PFP 1era generación **RESULTADOS**

27 lateral release
 34 mediatización TAT

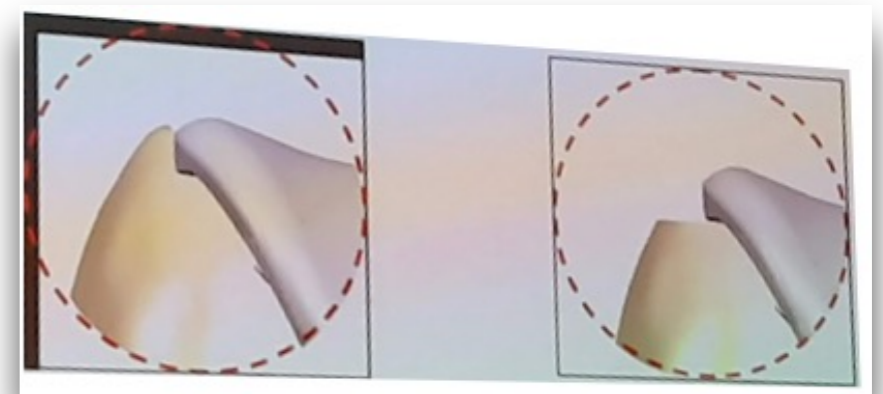
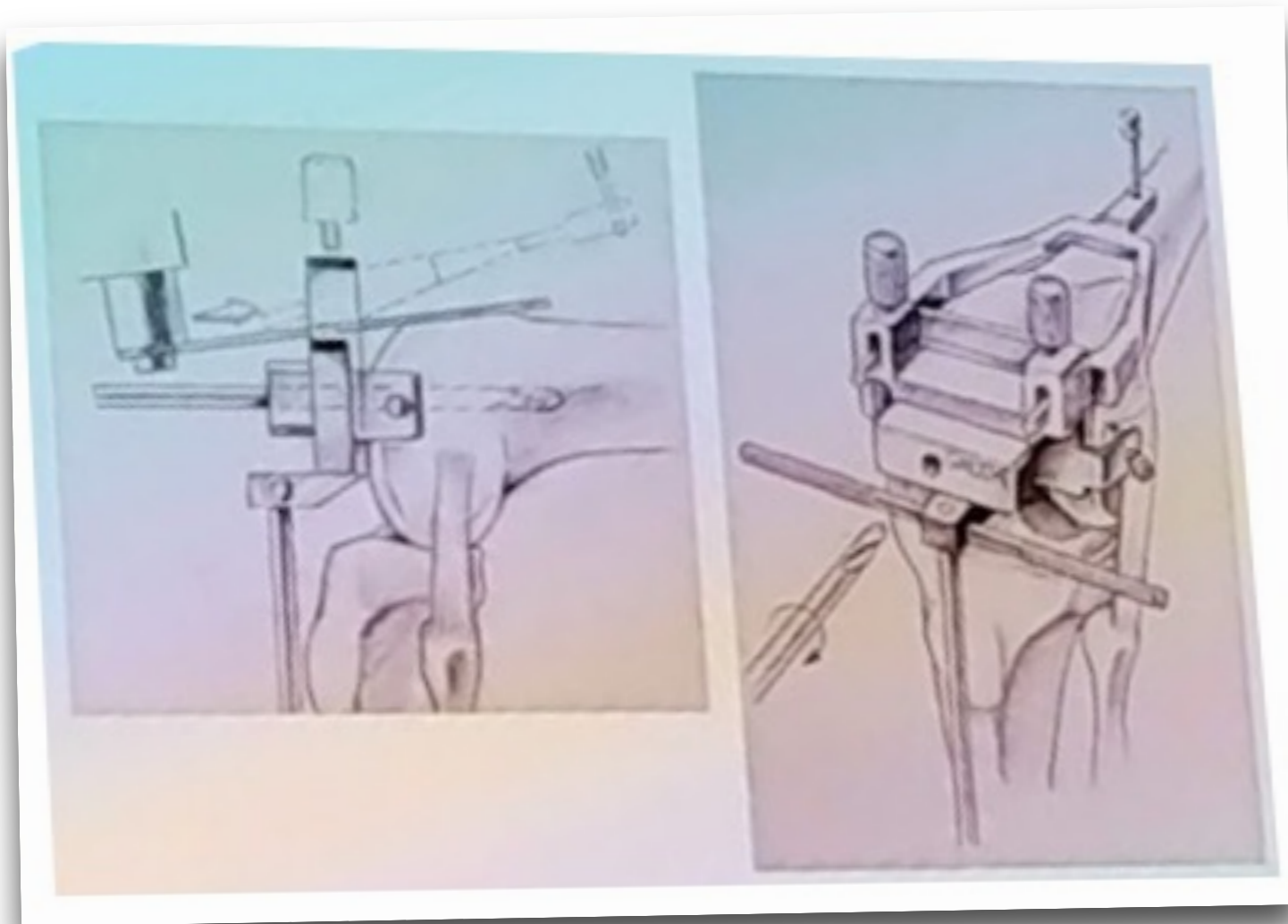


Studies	Implants	Nbr of cases	Mean age	Follow-up (years)	Excellent or good results
Arciero, 1988	Richards	25	62	5,3	85%
Cartier, 1990	Richards	72	65	(4) 2-12yrs	85%
Witvoet, 1994	Guépar	78	59	5	75%
Argenson, 1995	Autocentrique	66	57	5,5	84%
Mertl, 1997	Sphérocentrique	50	60	3	82%
De Cloedt, 2001	Autocentrique	45	62	6	63%
Tauro, 2001	Lubinus	62	66	7,5	45%
De Winter, 2001	Richards	26	59	11	76%
Kooijman, 2003	Richards	45	50	17	86%
Gadeyne, 2008	Autocentrique	45	65	6,2	58%
Mertl 2008	Sphérocentrique	62	59	10	84%



Artrosis femoropatelar

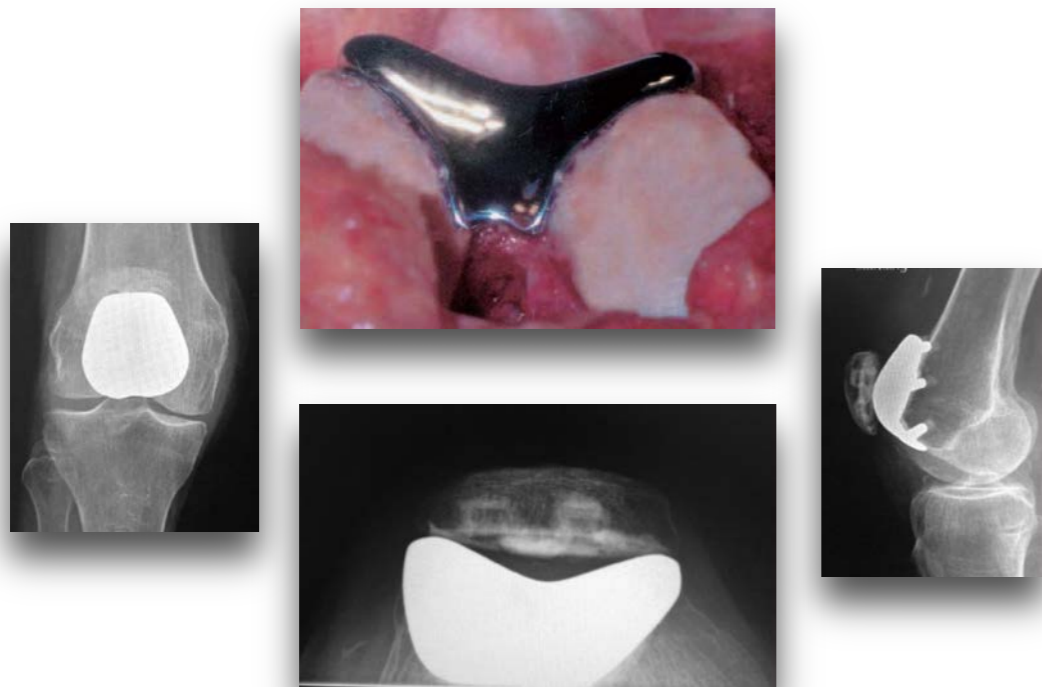
Historia PFP 2da generación (corte anterior)



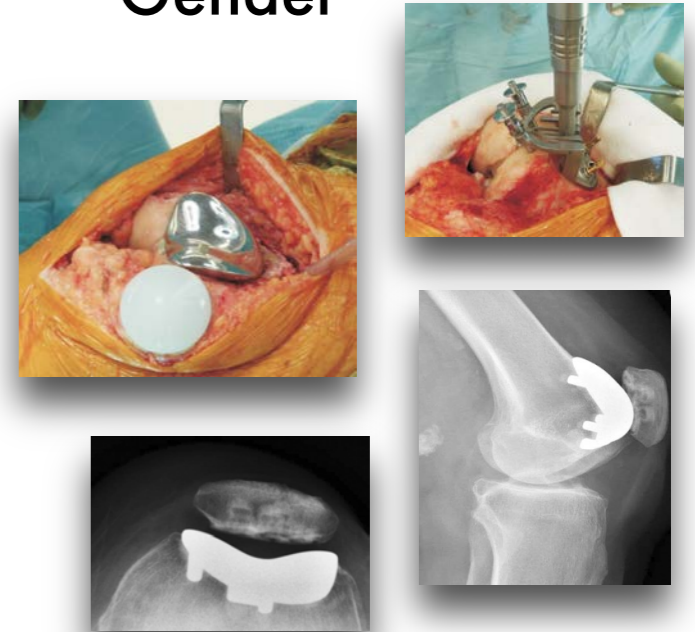
Artrosis femoropatelar

Historia 2da generación (corte anterior)

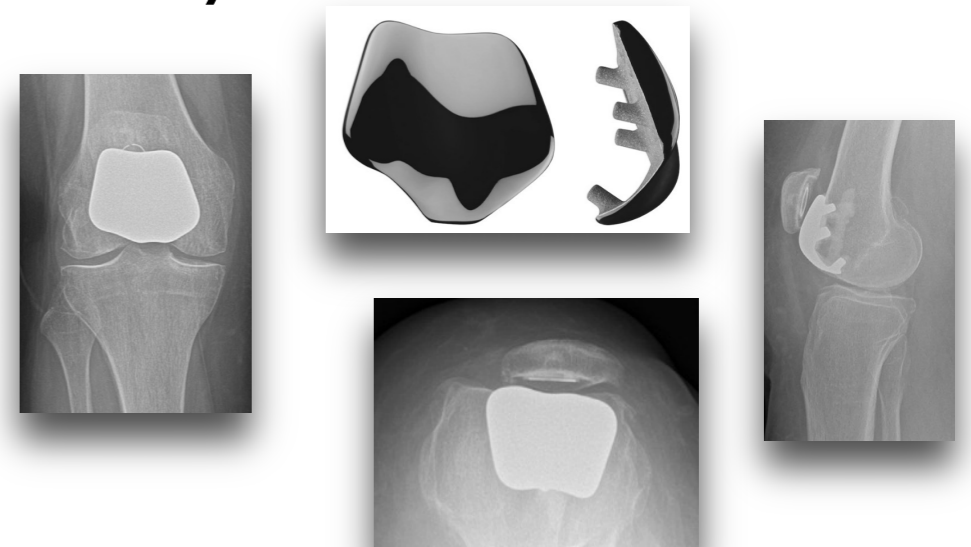
- Avon (1996)



- Gender



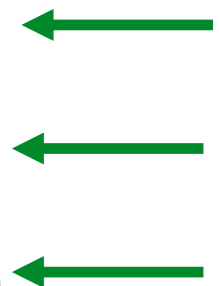
- Journey



Artrosis femoropatelar

Historia 2da generación (corte anterior)

Studies	Implants	Nbr of cases	Mean age	Follow-up (years)	Excellent or good results
Ackroyd, 2007	Avon	83	68	5,2	80%
Flouzat 2008	Hermes	51	67	5	87%
Osarumwense 2017	Gender	52	59	2	90%



Bristol group (Avon)

360 PFP (59 > 5 yrs)

Mal tracking 4% ✓

Progresión OA FT 7% ✓

Artrosis femoropatelar

Survivorship and functional outcomes of patellofemoral arthroplasty: a systematic review

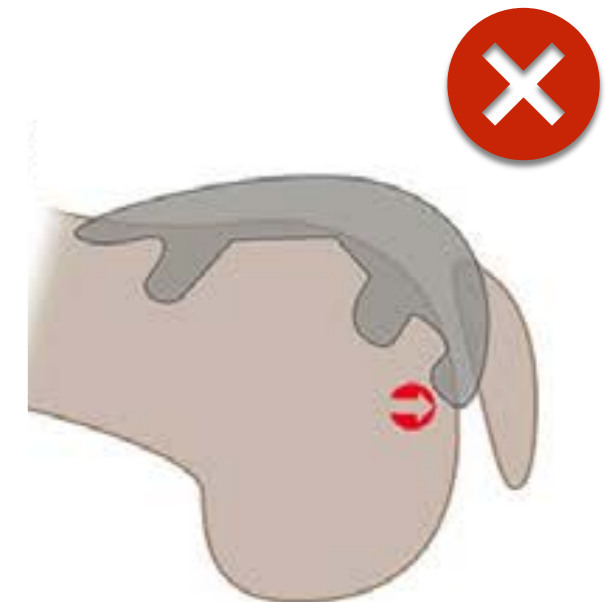
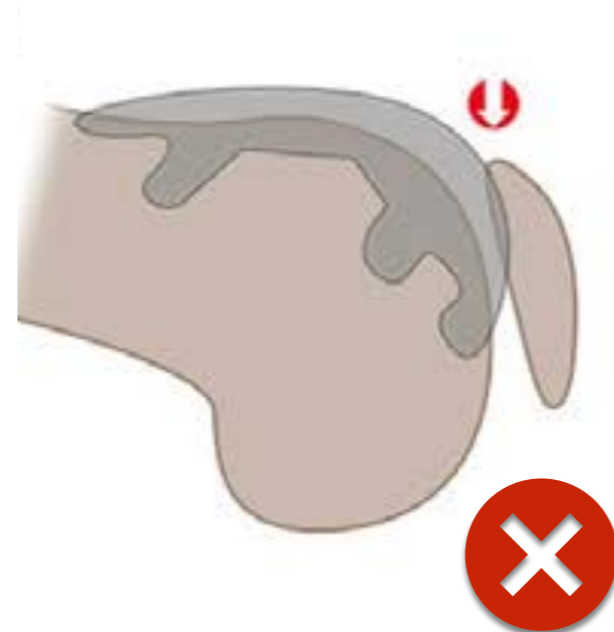
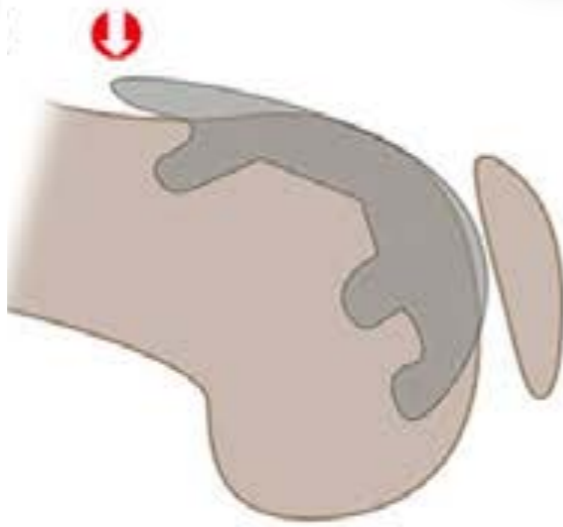
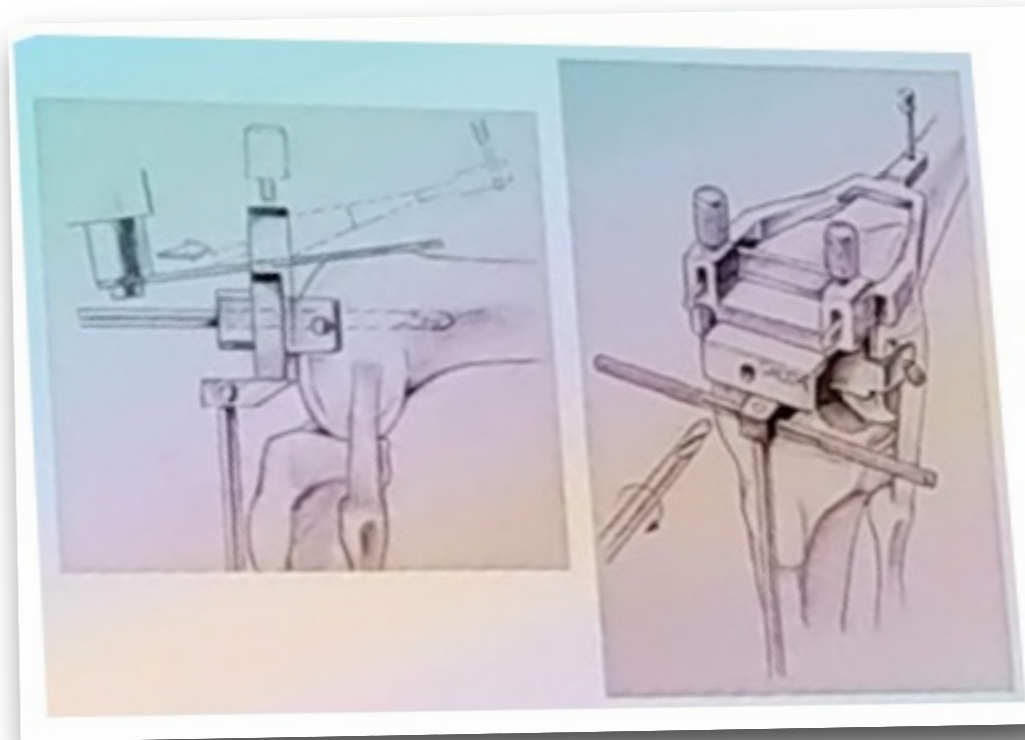
J P van der List ¹, H Chawla ², H A Zuiderbaan ³, A D Pearle ²

Knee Surg Sports Traumatol Arthrosc. 2017 /

Sobrevida
Implantes
2da generación

5yrs: 91%
10yrs: 83%
15yrs: 74%
20yrs: 66%

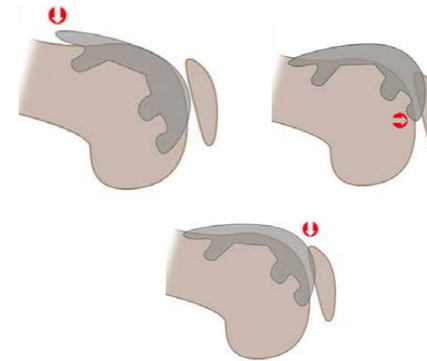
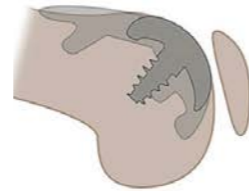
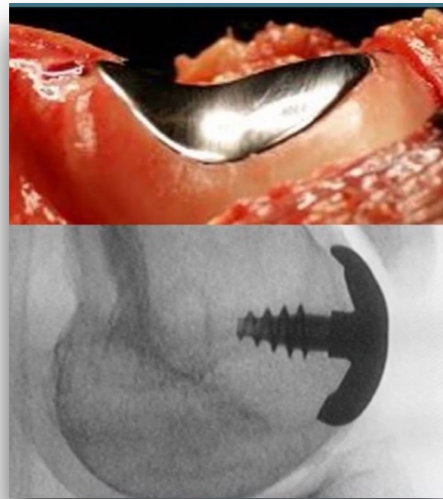
Artrosis femoropatelar



Artrosis femoropatelar

Inlay vs Onlay

(2da generación)



- 1- Resurfacing (4-5mm)
- 2- opción no cementada
- 3- reconstrucción anatómica: 4 curvaturas
surco troclear AP y 2 M-L
- 4- NO invade canal medular
- 4- NO over stuffing
- 5- Opción en trocleas displásicas

- 1- Corte anterior (7-9mm)
- 2- cementada
- 3- Reconstrucción no anatómica:
simétrica en A-P
- 4- Invade canal medular
- 5- Over Stuffing

Artrosis femoropatelar



Orthopedic Reviews 2018; volume 10:7531

The clinical outcome of the different HemiCAP and UniCAP knee implants: A systematic and comprehensive review

Michael-Alexander Malahias,¹ Dimitrios Chytas,² Fritz Thorey¹

¹ATOS Hospital Heidelberg, International Center for Hip, Knee and Foot Surgery, Heidelberg, Germany;

²National and Kapodistrian University of Athens, School of Medicine, 2nd Orthopedic Department, Athens, Greece

- 154 p
- 2-7yrs FU
- *Mejoría dolor y outcomes*

Mejoría dolor y función



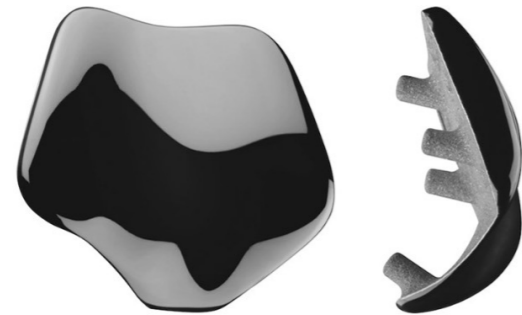
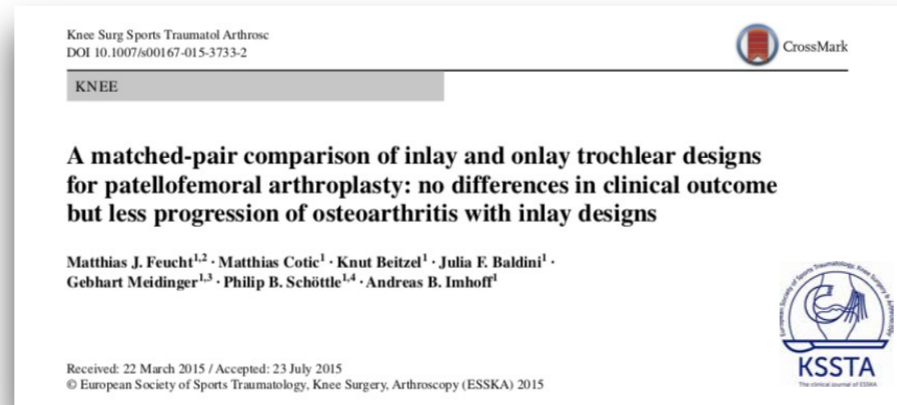
Artrosis femoropatelar

2019



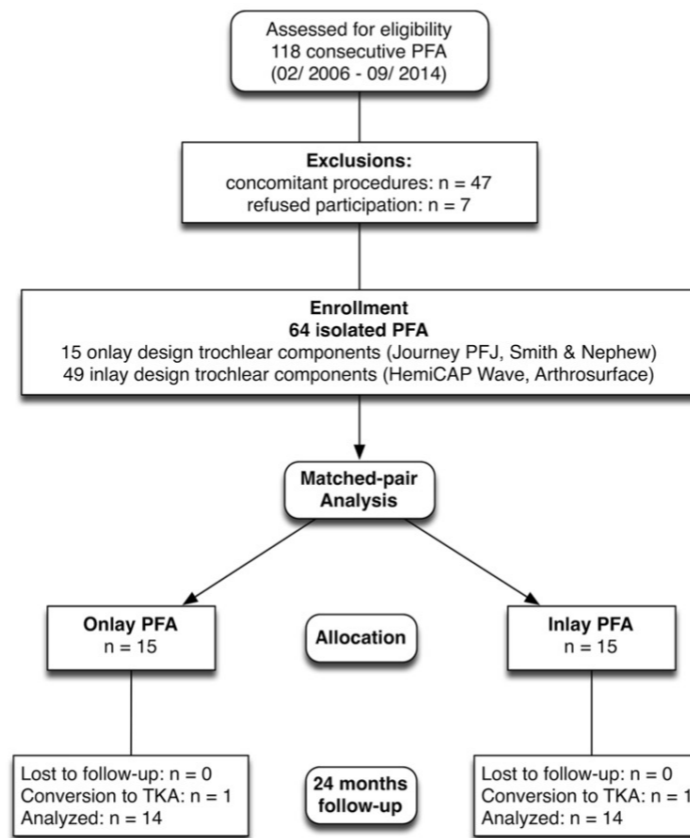
- 35p
- 49 años

- ✓ 6 R-PTR (17%)
- ✓ Sobrevivida 83% a 5 años



Journey, S&N

- 15 vs 15
- 2a FU



HemiCap Wave, Arthrosurface

✓ Menor progresión
✓ a OA FT

✓ Resultados funcionales similares

	Inlay	Onlay	Significance
KL medial			
Preoperative	2 (1-2)	2 (1-2)	n.s.
Follow-up	2 (1-2)	2 (2-3) [#]	n.s.
Delta	0 (0-0)	1 (0-1)	p = 0.024
KL lateral			
Preoperative	2 (1-2)	1 (1-2)	n.s.
Follow-up	2 (1-2)	2 (1-2) [#]	n.s.
Delta	0 (0-0)	0 (0-1)	n.s.
Progression of tibiofemoral OA			
Medial	0 (0 %)	7 (47 %)	p = 0.024
Lateral	0 (0 %)	4 (27 %)	n.s.
Medial and/or lateral	0 (0 %)	8 (53 %)	p = 0.009
CDI			
Preoperative	0.9 ± 0.2	1.0 ± 0.1	n.s.
Follow-up	0.9 ± 0.2	0.9 ± 0.2 [#]	n.s.
Delta	0.0 ± 0.1	-0.1 ± 0.1	n.s.

Artrosis femoropatelar

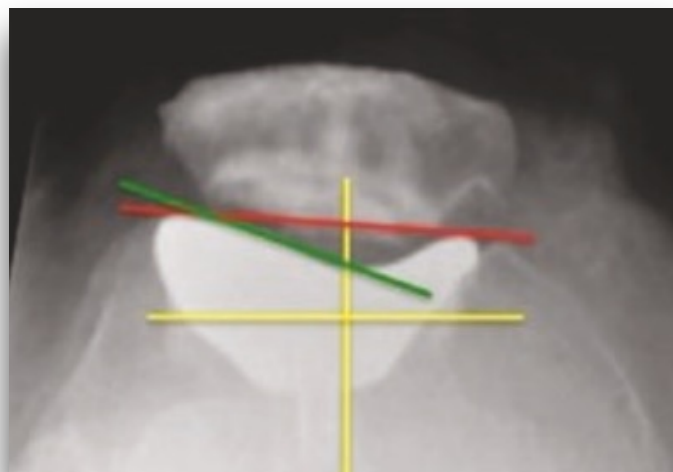
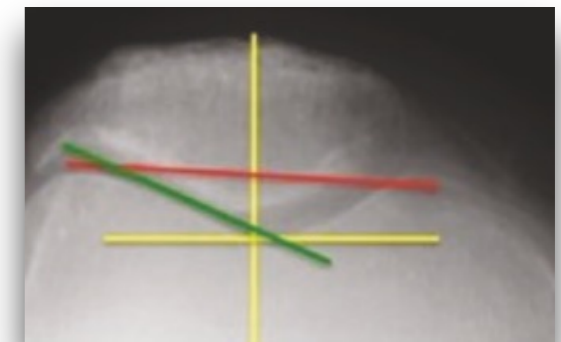
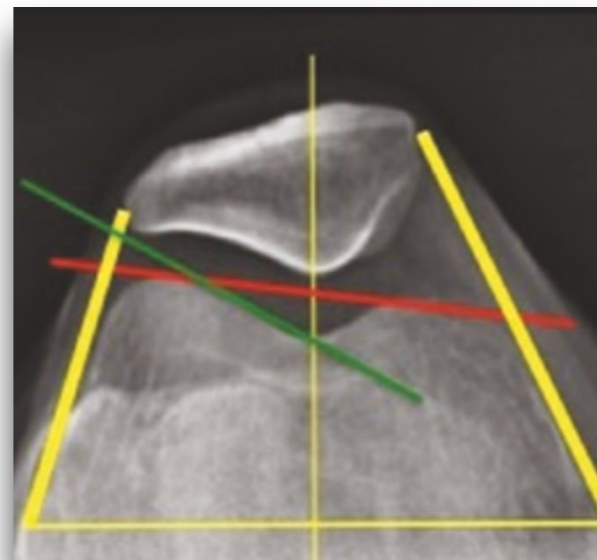
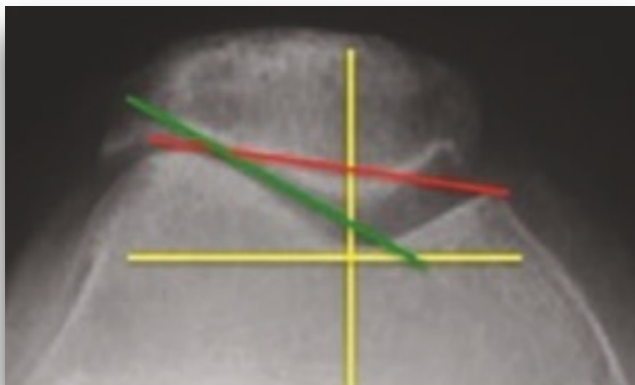
Inlay vs Onlay

Key Points

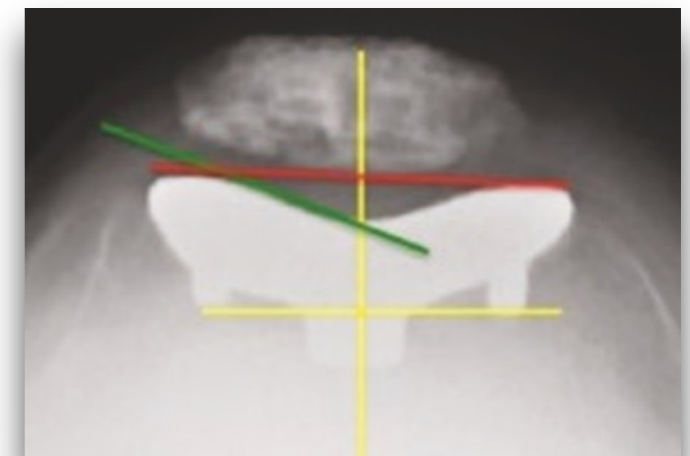
- Clinical results and survivorship of PFA are improving thanks to a better understanding of the PF biomechanics, more anatomical designs and adequate surgical instrumentation.

Inclinación
tróclea lateral

Línea troclear

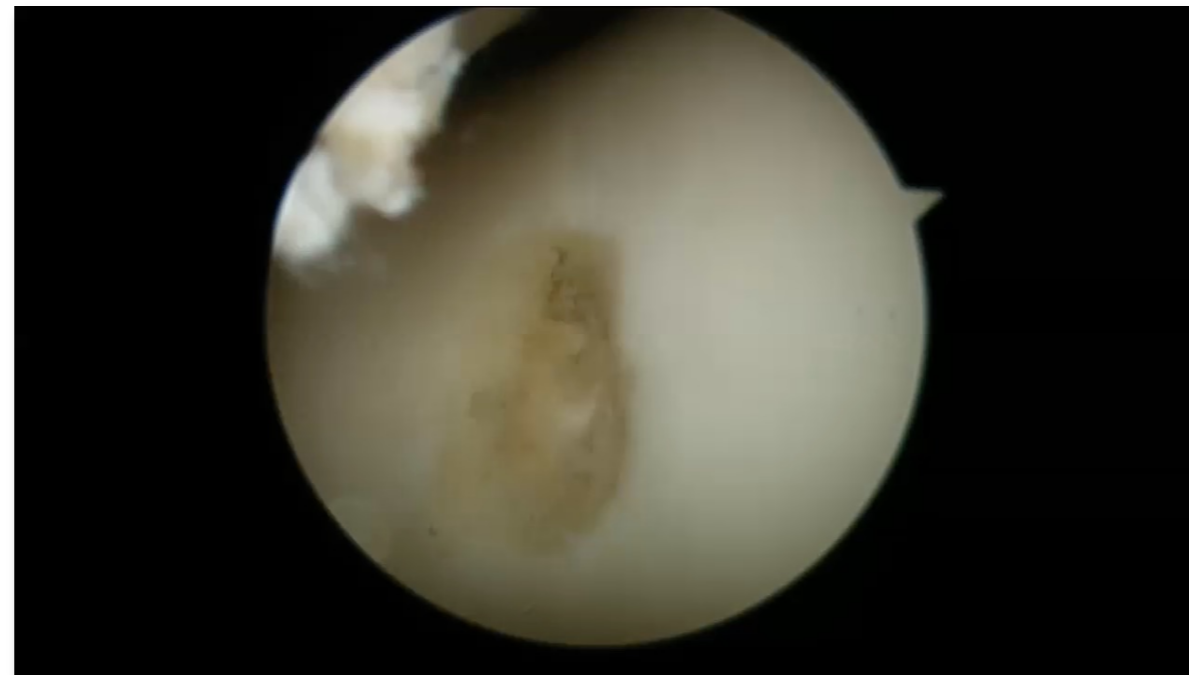
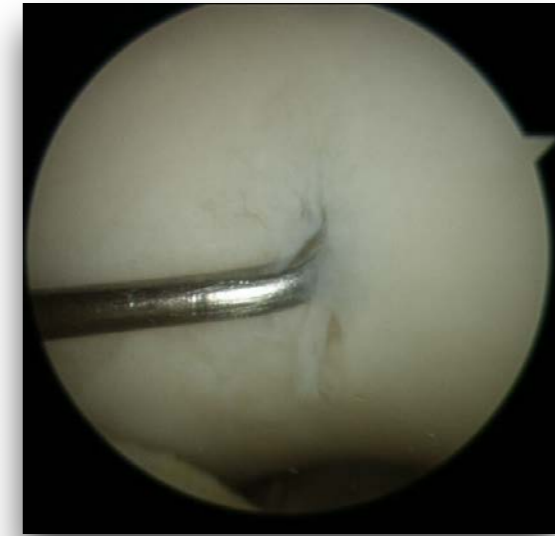
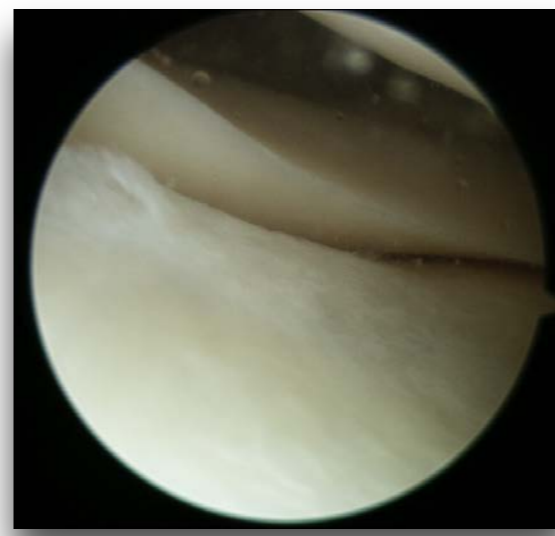
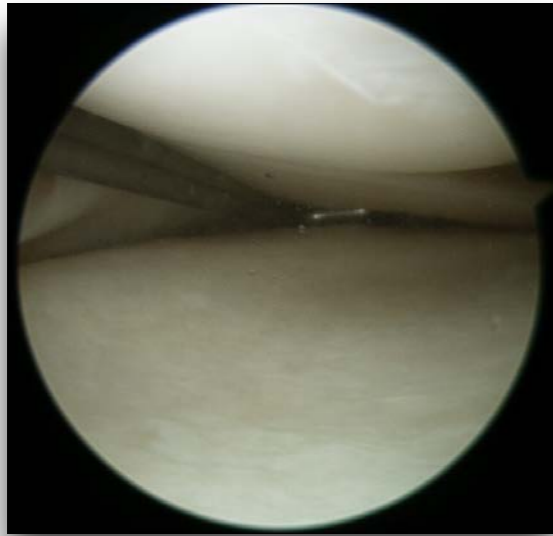


- PFA in primary PFOA without any trochlear dysplasia can be performed with an anatomical alignment. The anterior cut should be perpendicular to the sagittal axis of the knee joint and the prosthesis should replace the trochlea without modifying its anatomy and orientation. Inlay PFAs could be used.



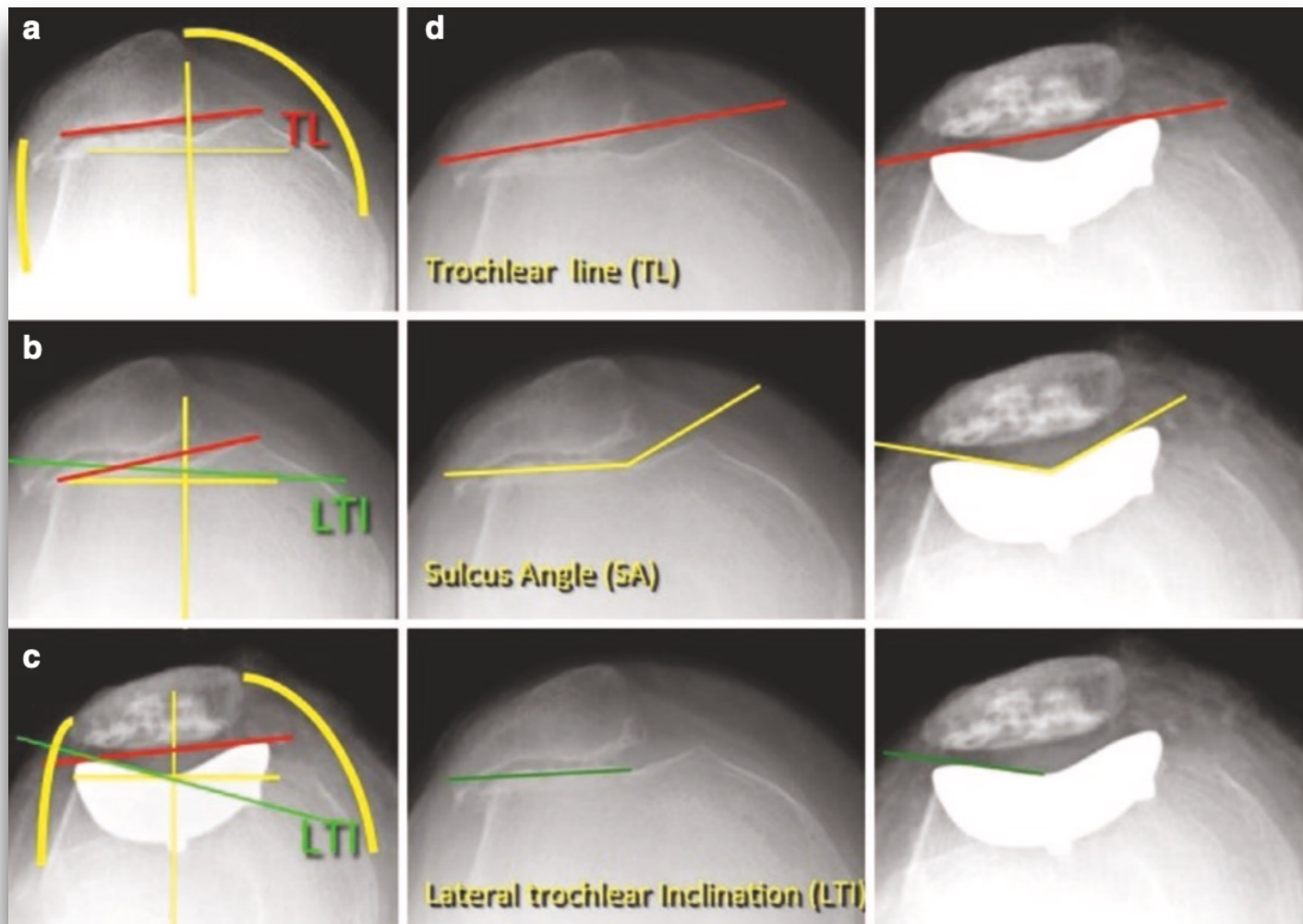
Mujer, 52 años







Artrosis femoropatelar

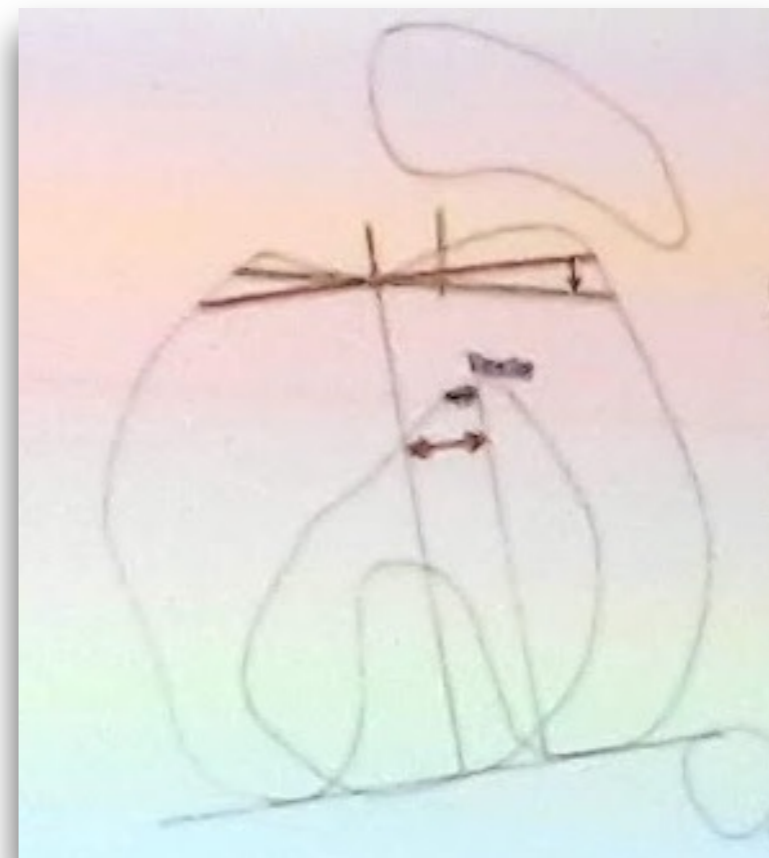
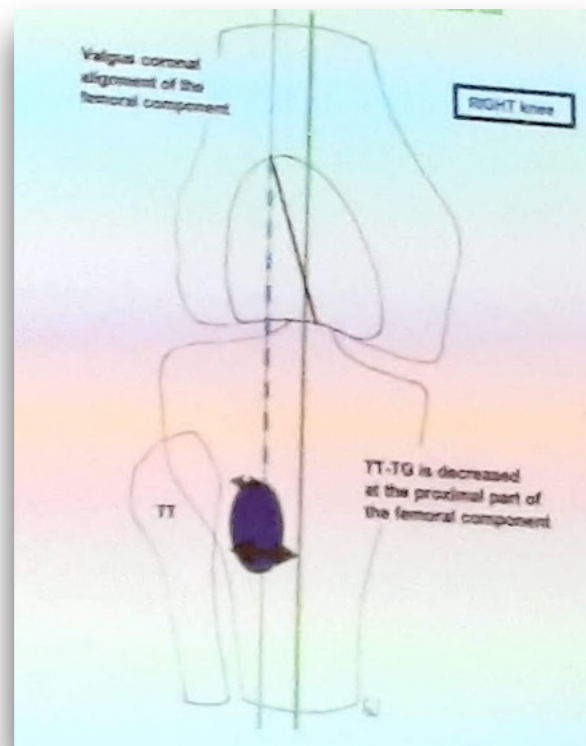


- Onlay designs have broader indications and easier surgical technique because they completely replace the trochlea by an anterior resection. Their patella-friendly trochlea and the large amount of sizes available accommodate for patella alta or excessive TT–TG distance without the need of further surgical procedures.
- PFA in PFOA secondary to patellar instability needs a kinematic alignment in which the lateral border of the trochlea is elevated, the lateral trochlear inclination is restored, but the trochlear line remains in partial external rotation. This avoids excessive modification in retinacular ligaments tension and the need of soft tissues releases.

Artrosis femoropatelar

En displasia troclear/inestabilidad

- Adaptar componente femoral
- Procedimientos asociados
 - osteotomía TAT
 - Release patelar
 - Facetectomía lateral



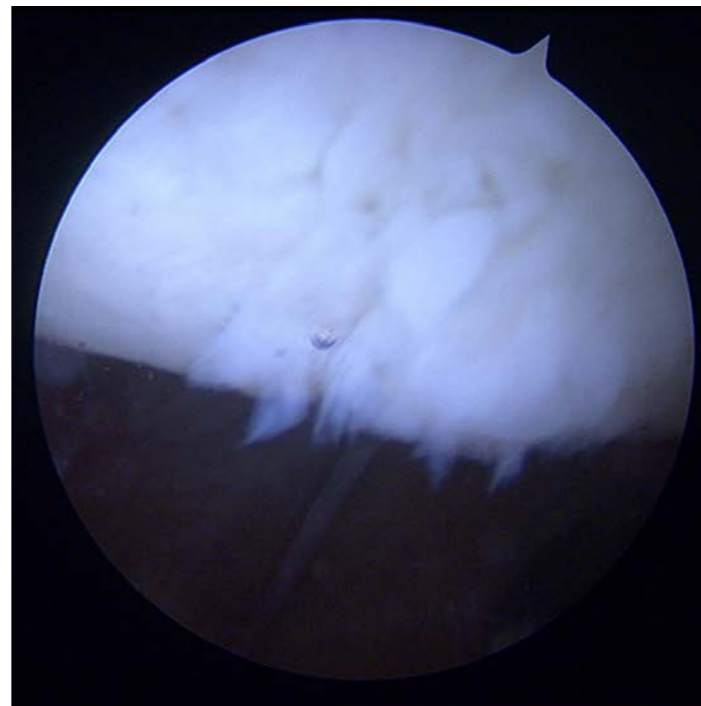
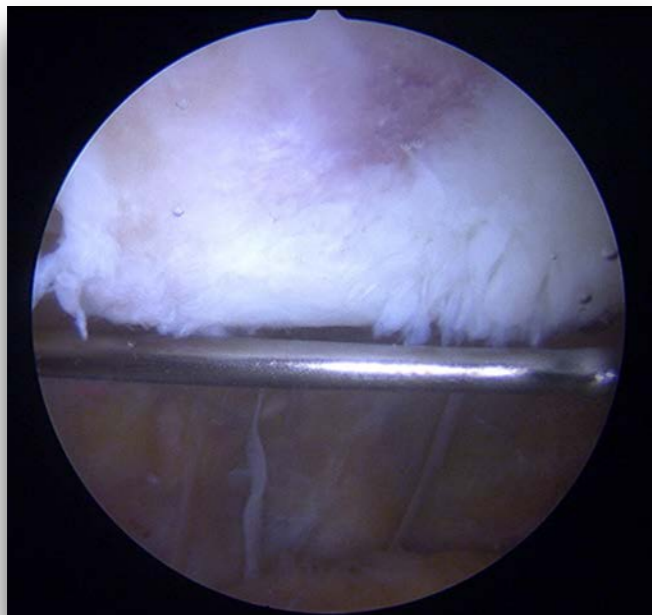
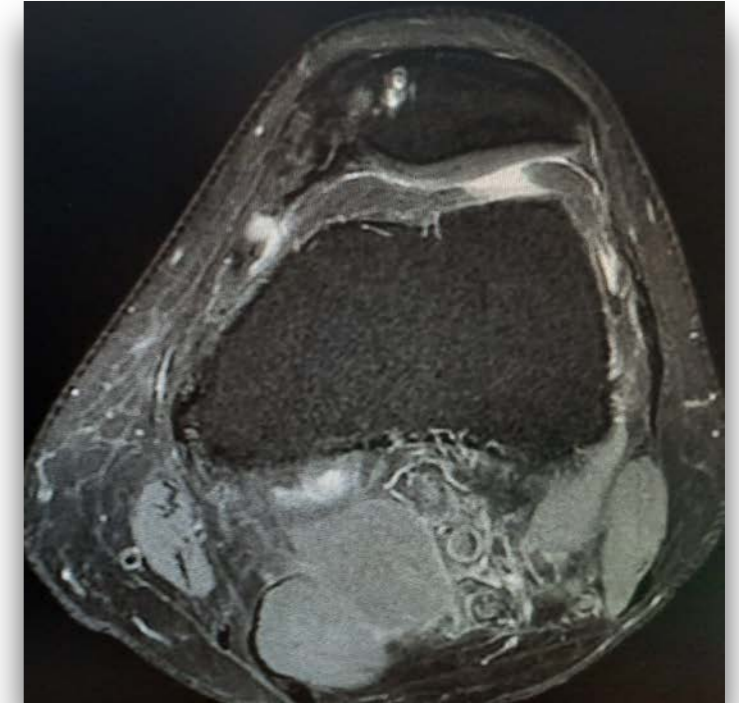
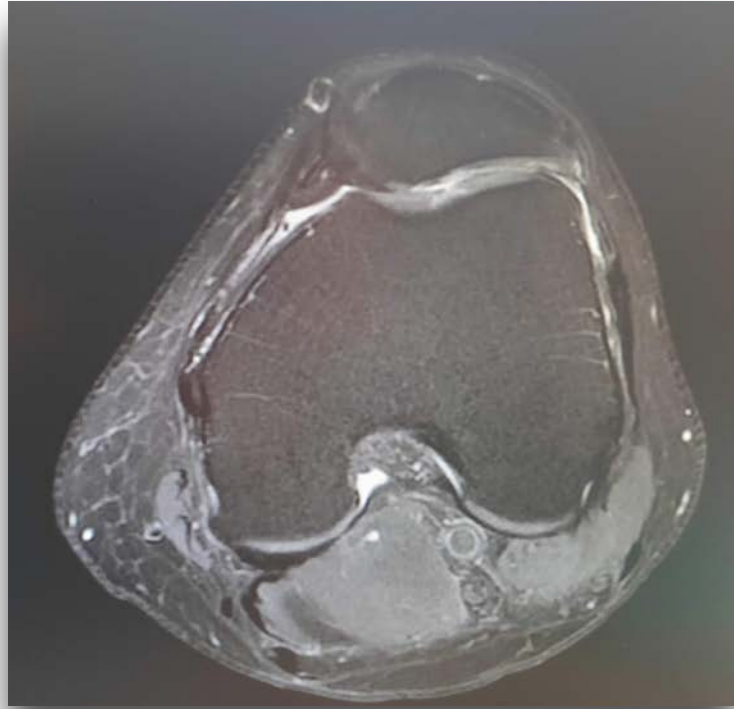
Hombre, 51 años



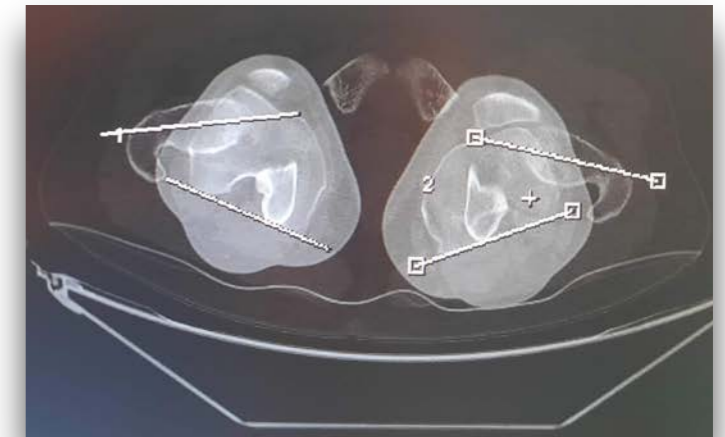
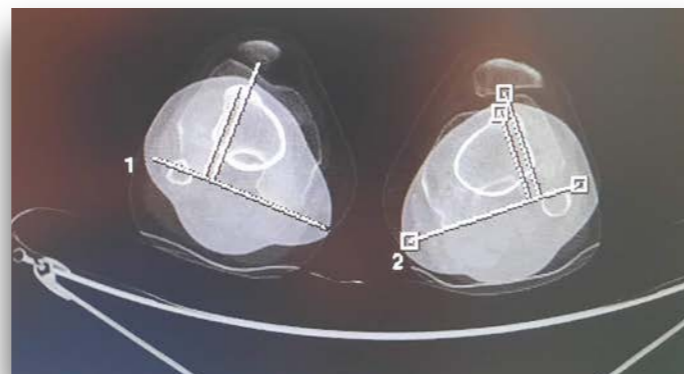
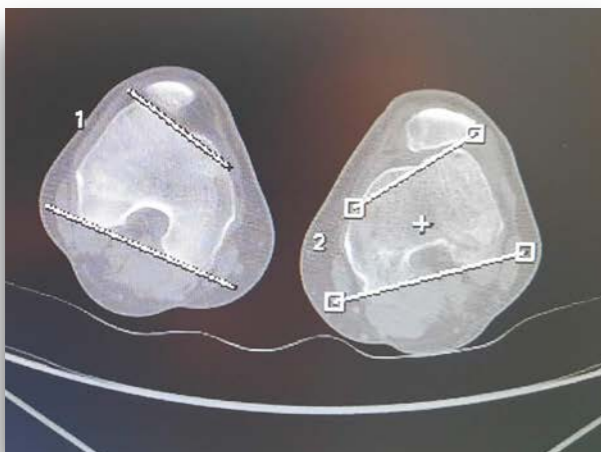
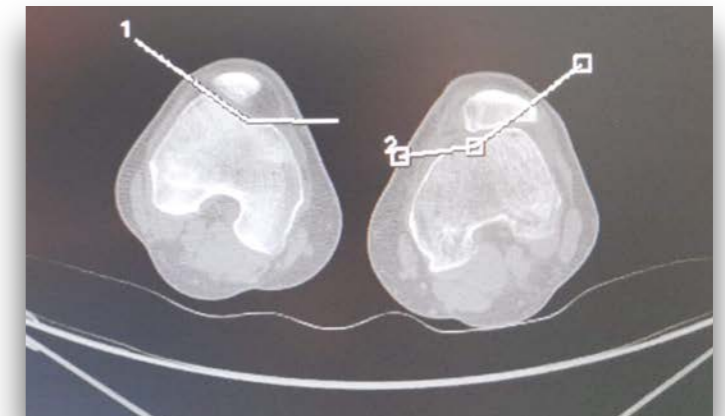
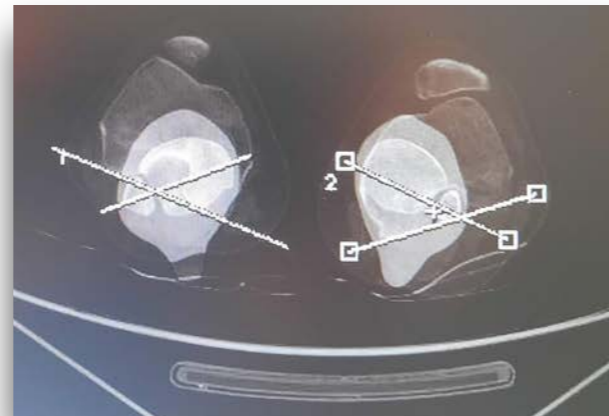
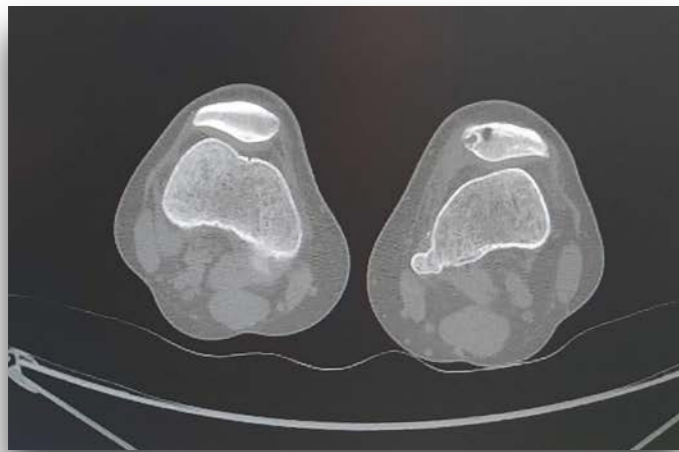
Hombre, 51 años



Hombre, 51 años



Hombre, 51 años



Hombre, 51 años

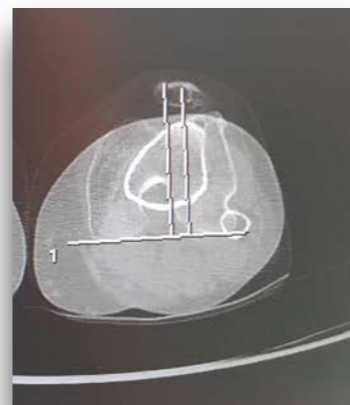
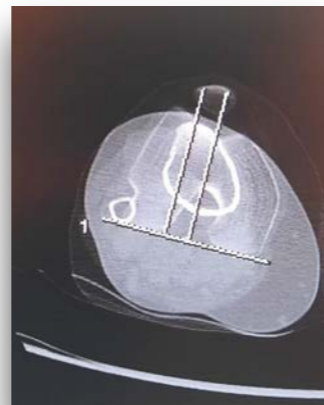
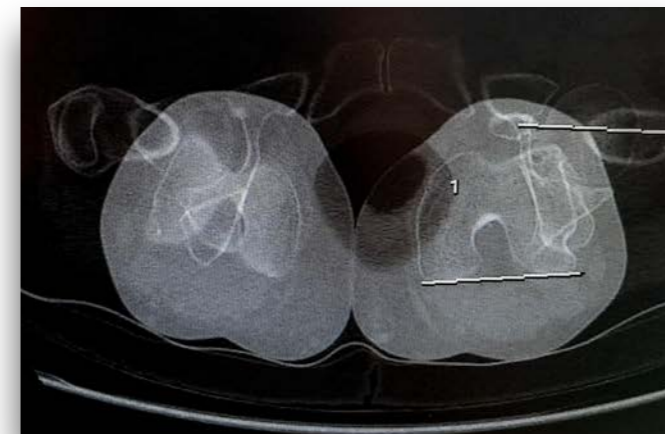
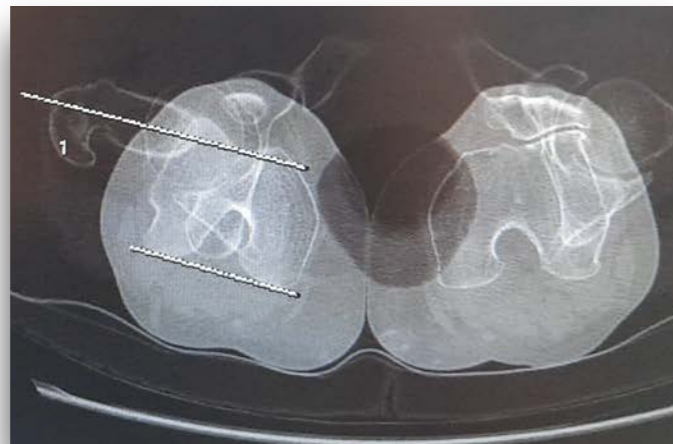
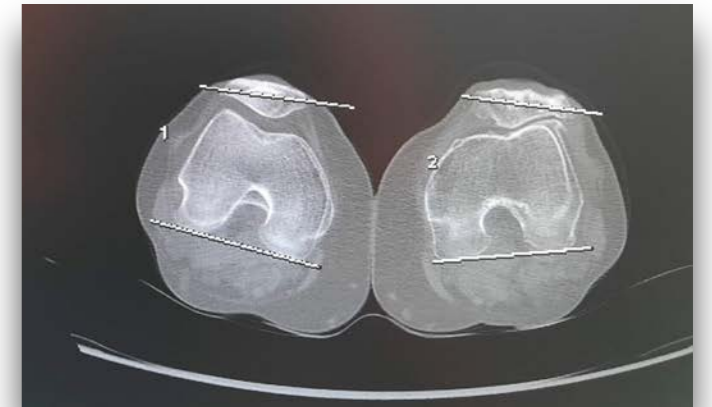
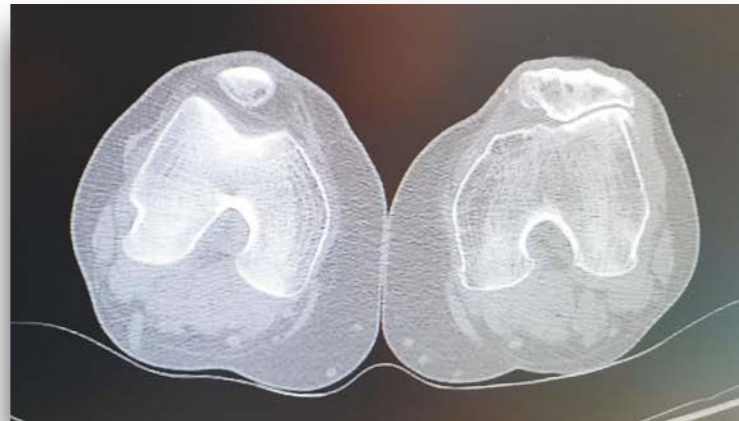
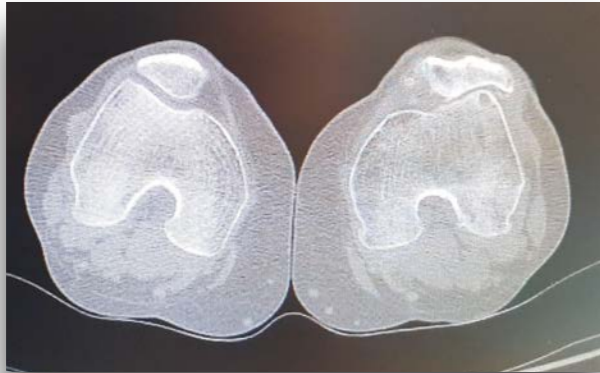


Left knee

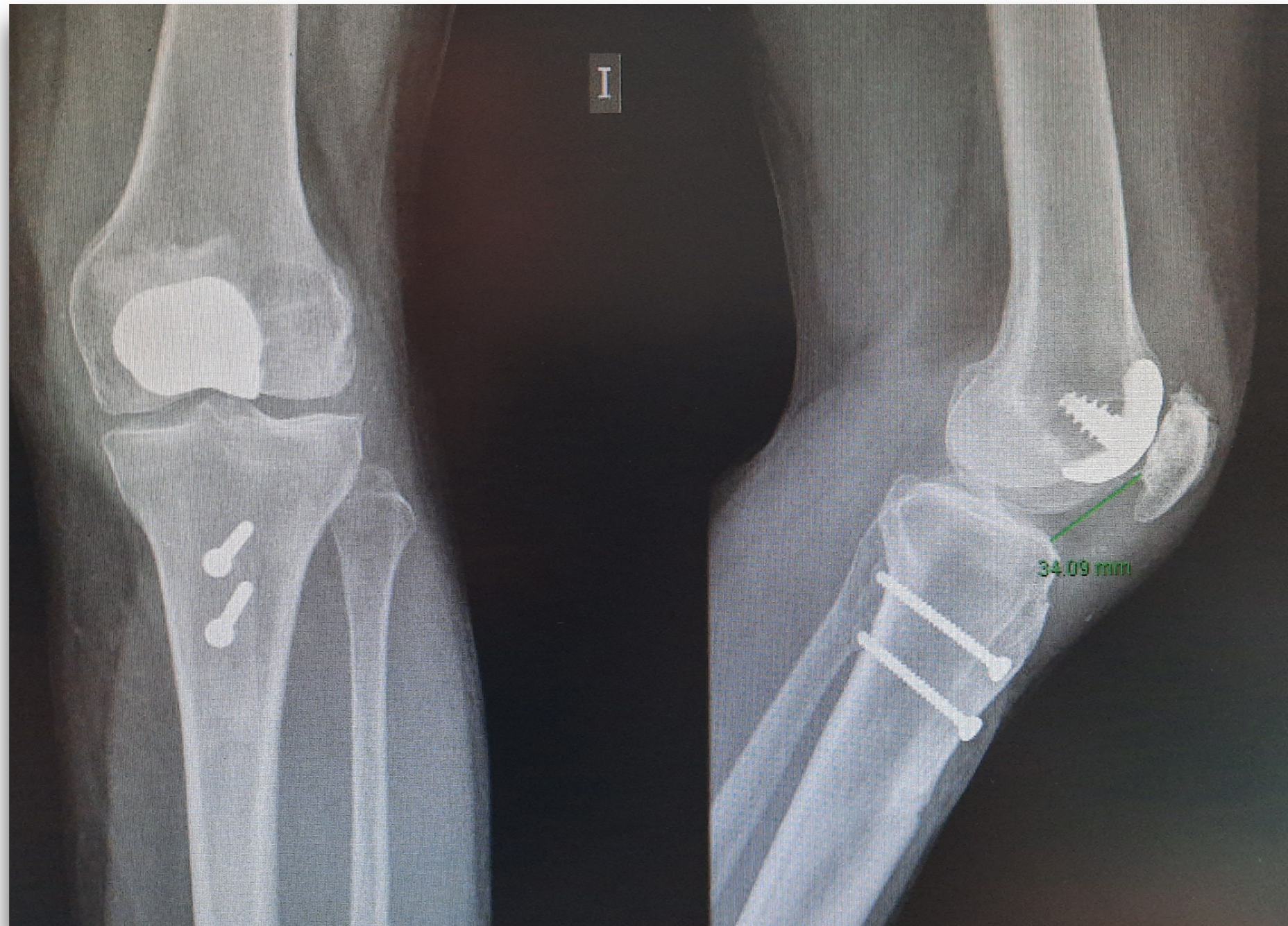
Mujer, 54 años



Mujer, 54 años

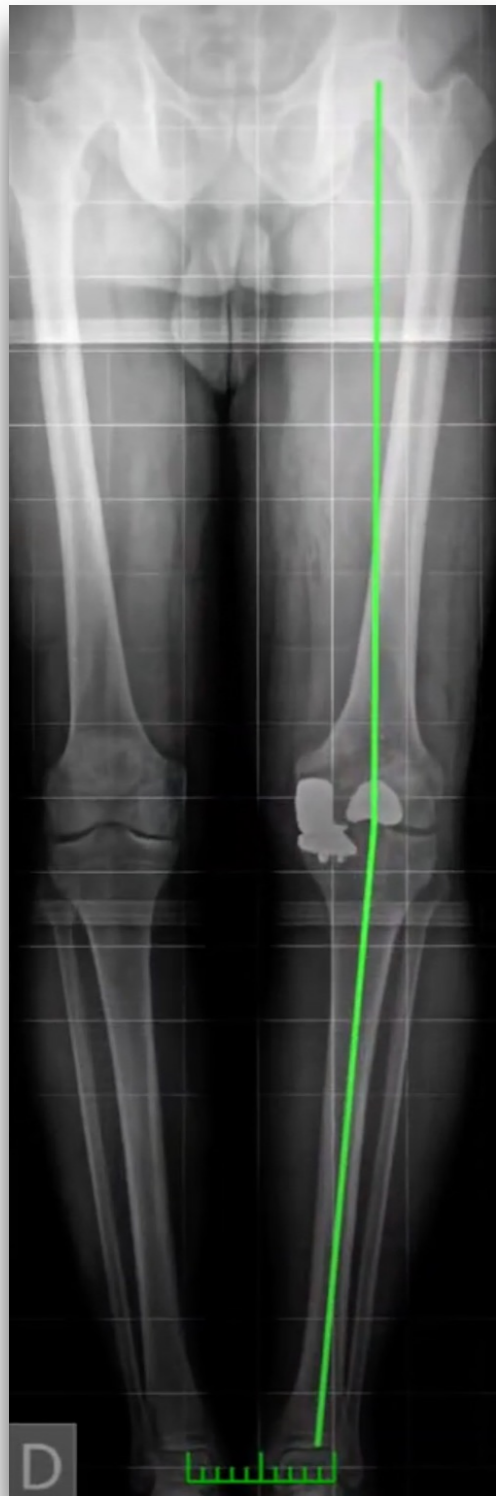


Mujer, 54 años

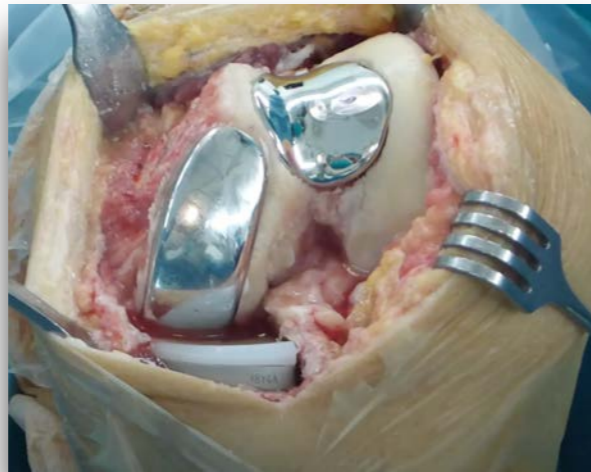


Inlay vs Onlay

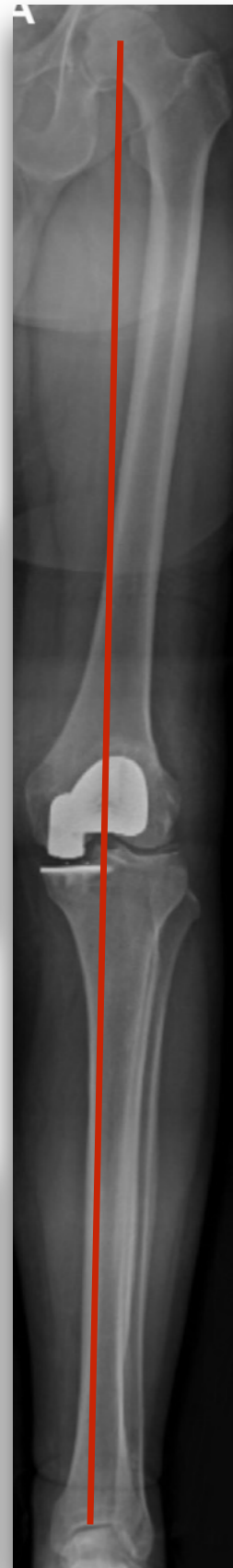
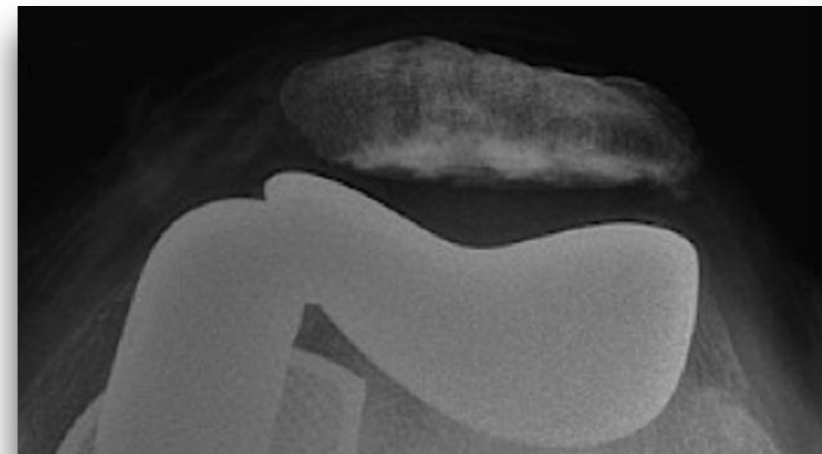
- Wave (inlay) PFP + PKR



Cortesía Dr P. Gelber

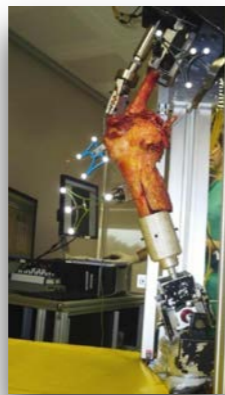
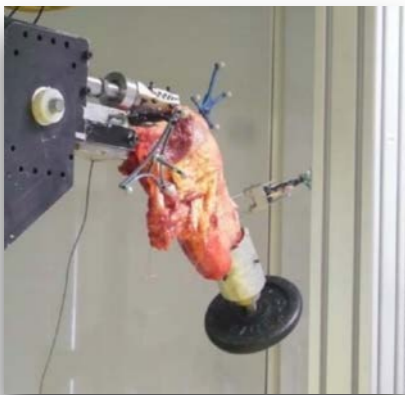


- Gender (onlay) PFP + UKA



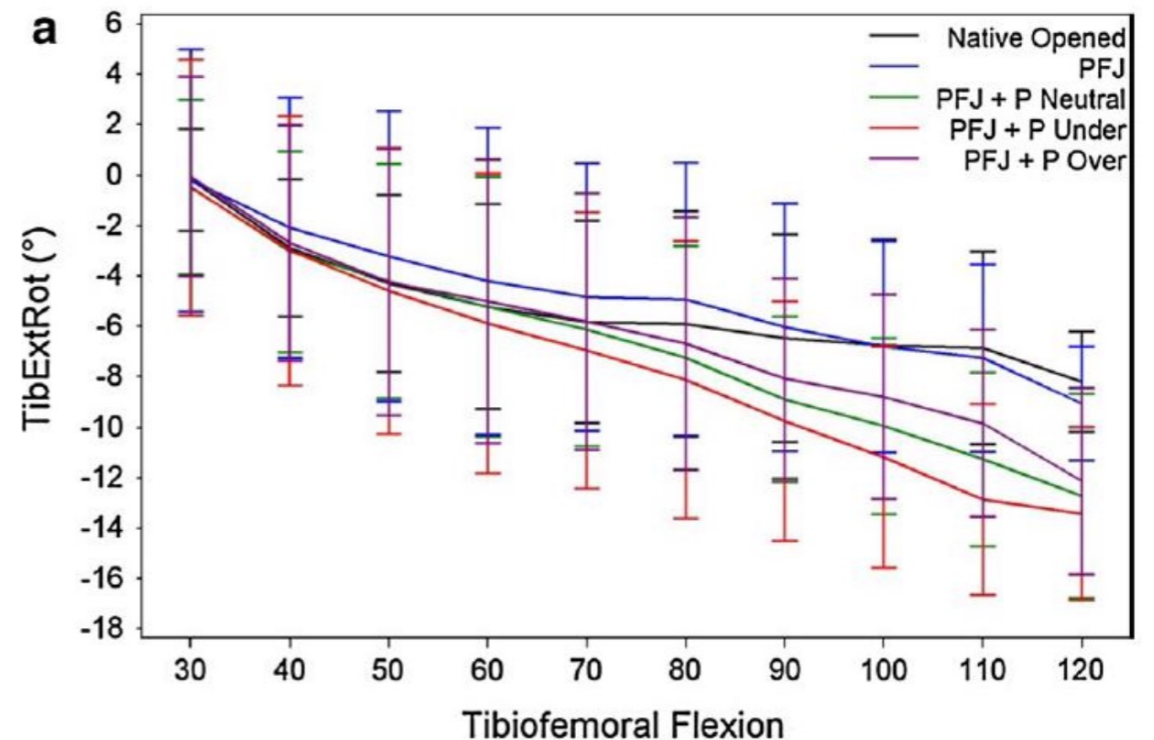
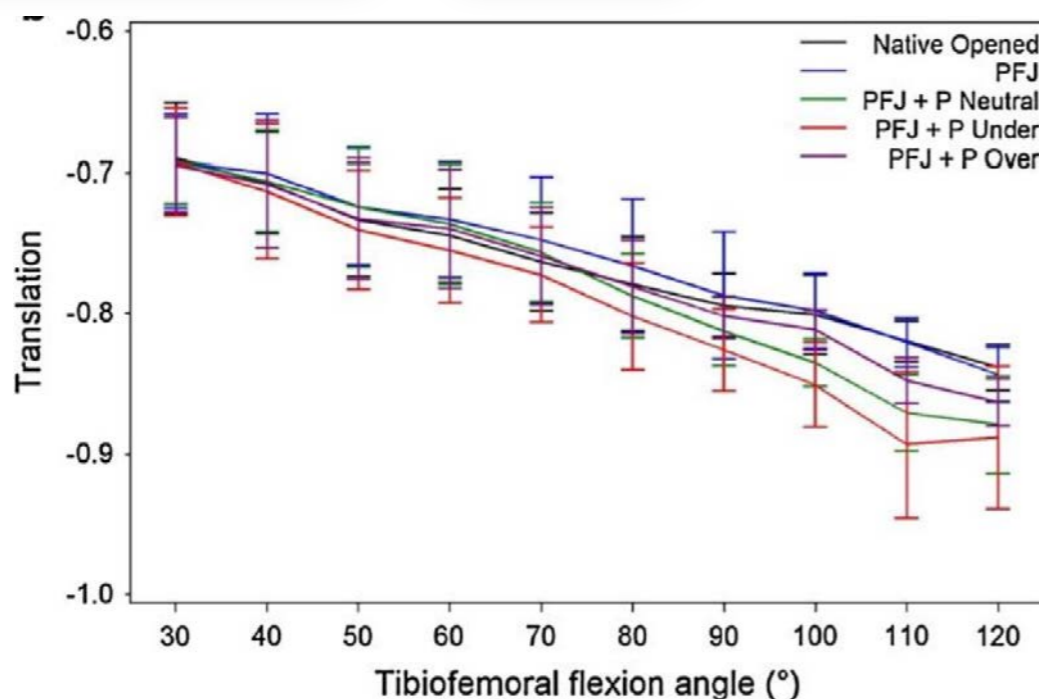
Patellofemoral arthroplasty influences tibiofemoral kinematics: the effect of patellar thickness

Hilde Vandenneucker¹, Luc Labey, Jan Victor, Jos Vander Sloten, Kaat Desloovere, Johan Bellemans



> overstuffing patelar, > alteración cinemática FT

Recomendación: over- resection patelar (cuando es posible)



The lack of retropatellar resurfacing at index surgery is significantly associated with failure in patients following patellofemoral inlay arthroplasty: a multi-center study of more than 260 patients

Andreas B. Imhoff¹  · Eva Bartsch¹ · Christoph Becher² · Peter Behrens³ · Gerrit Bode¹⁰ · Matthias Cotic¹ ·

-NO protetizar la patela

> IMC

Procedimientos asociados

(por inestabilidad o mala alineación)

Relacionado con fallo

Why do patellofemoral arthroplasties fail today? A systematic review

J P van der List ¹, H Chawla ², J C Villa ³, A D Pearle ⁴

Causas

- Progresión OA: 38%
- Dolor: 18%
- Aflojamiento aséptico: 14%
- Mal tracking: 10%

Tiempo

- precoz: dolor : 31%
- Tardío: progresión OA: 46%

Conclusion: This level IV systematic review with low quality of studies identified OA progression and pain as major failure modes. Reviewing these studies, appropriate patient selection could prevent PFA failures in select cases. Future studies assessing the role of PFA in isolated patellofemoral OA are necessary.



Artrosis femoropatelar, solución metálica

CONCLUSIONES

- **Indicación ideal...** artrosis FP aislada, no-obeso, 50-65 años, en estadio avanzado (III, IV), **o** que no ha respondido a tto no qx durante tiempo prolongado, con incapacidad severa en AVD. **SELECCION DEL PACIENTE**
- **Correcto tracking patelar**, o corregirlo durante el mismo procedimiento
- **Indicios de degeneración FT** o factores de riesgo para desarrollarla (obesidad, varo-valgo $> 5^\circ$, ...), **PUC/PTR**
 - . Actualmente, **> sobrevida**, **< tasa de revisión**
- **Inlay** menor progresión OA FT



Muchas gracias