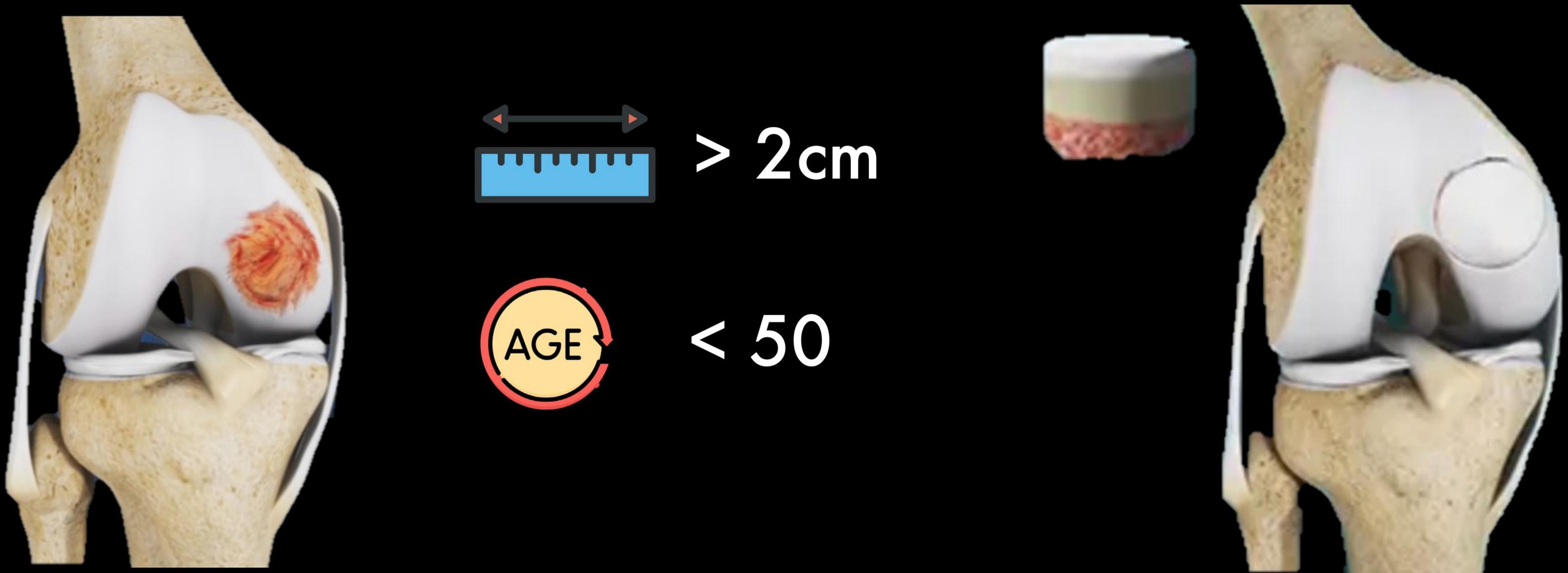


**Nueva escala de puntuación de tomografía
computarizada para evaluación de los trasplantes de
aloinjertos osteocondrales frescos de rodilla:
Variabilidad Interobservador e Intraobservador**

**Eduard Ramírez Bermejo; Àlex Grau Blanes; Aranzazu
Gonzalez Osuna; Oscar Fariñas ; Pablo Gelber**

Congreso AEA-SEROD – Murcia – 01/06/22

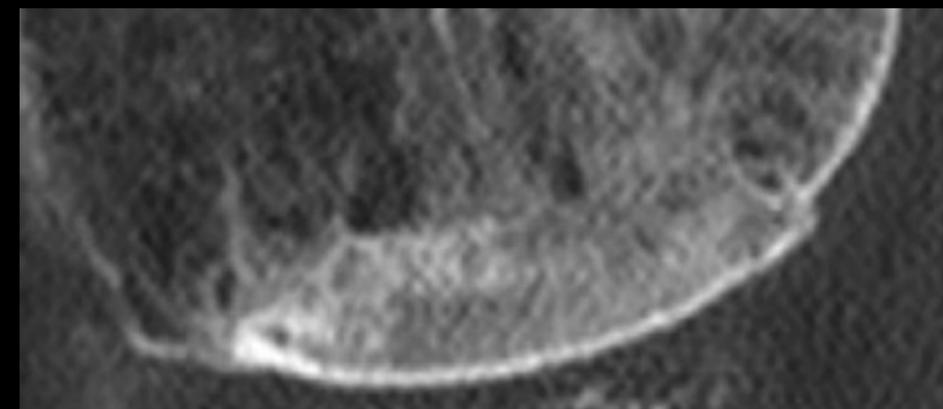
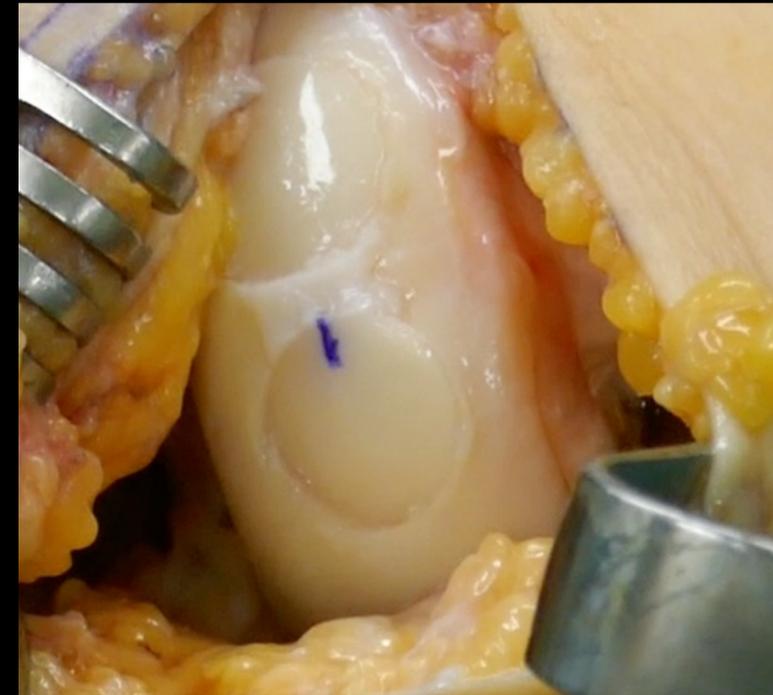
INTRODUCCIÓN



INTRODUCCIÓN

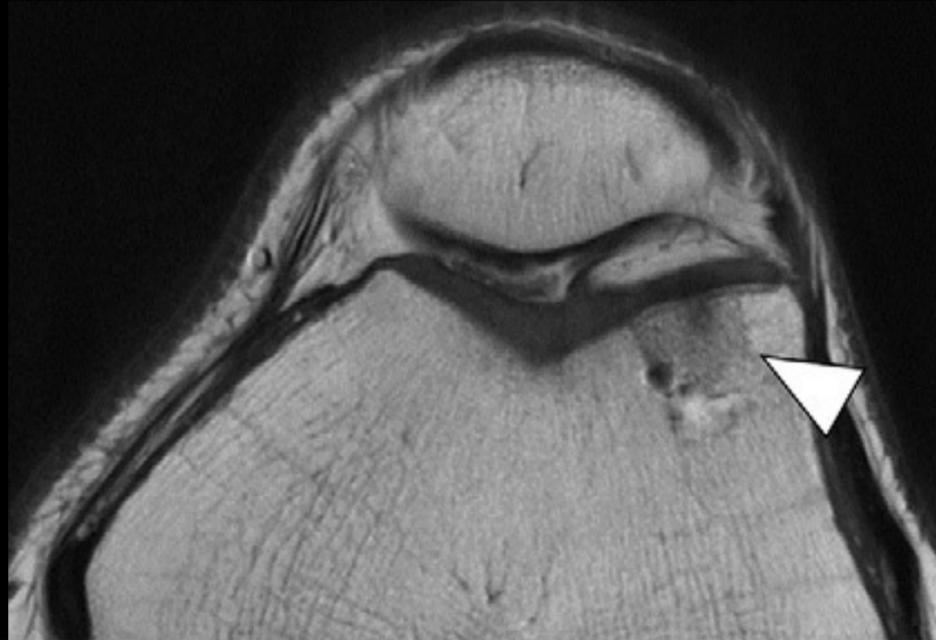


Condrocitos viables
Matriz extracelular
Osteointegración



Gross AE et al. Fresh osteochondral allografts for posttraumatic knee defects: long-term followup. *Clin Orthop Relat Res* 2008.

INTRODUCCIÓN



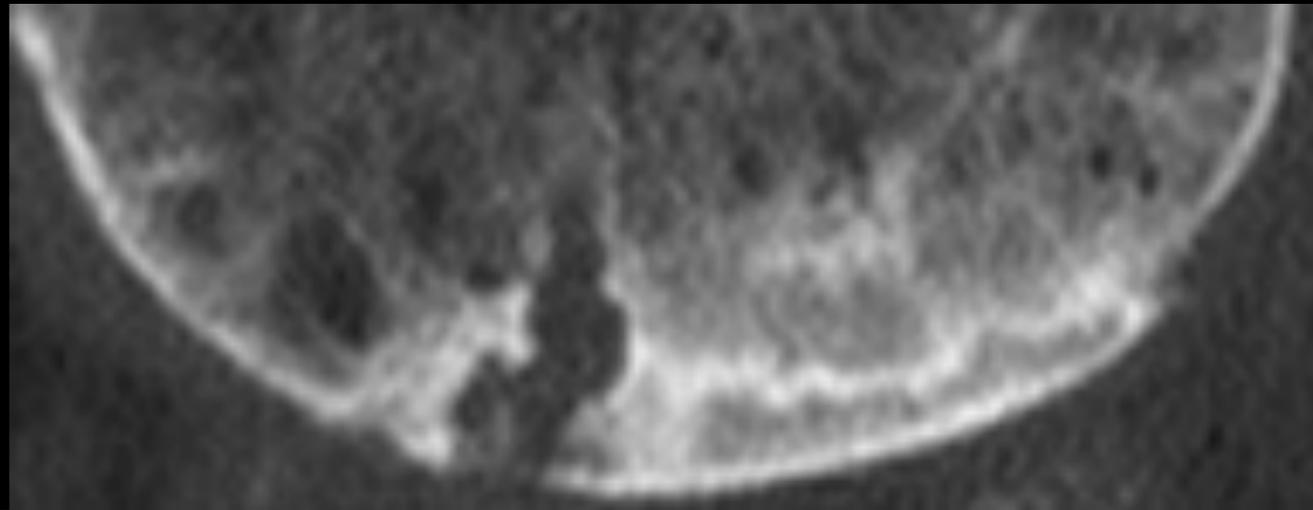
CORRELACIÓN



Resonancia Magnética

Wang T et al. Clinical and MRI outcomes of fresh osteochondral allograft transplantation after failed cartilage repair surgery in the knee. *J Bone Jt Surg* 2018

INTRODUCCIÓN



Tomografía Computarizada



Integración



Quistes óseos

Wang J et al. Improving spatial resolution at CT: development, benefits, and pitfalls.

Radiology 2018

OBJETIVO

Describir una nueva escala de TC para la evaluación de aloinjertos osteocondrales de la rodilla y evaluar su variabilidad intraobservador e interobservador

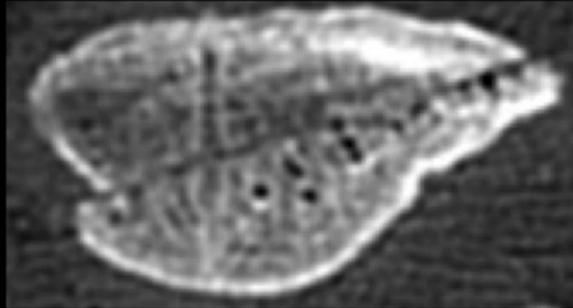
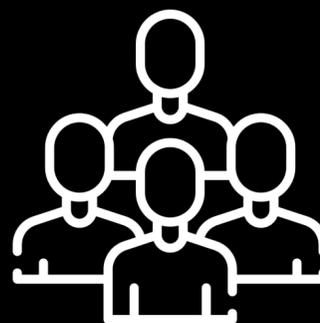


TABLE I Components of the TC scale

Features	Scoring
Cartilage features	
2. Cartilage "fill" of graft (percentage of volume)	1: 51% to 75% 2: <50%
3. Cartilage edge integration at host-graft junction	0: No discernible boundary 1: Discernible boundary 2: Discernible fissure >1 mm
4. Cartilage surface congruity of graft and host-graft junction	0: Flush 1: <50% offset of host cartilage 2: >50% offset of host cartilage
5. Calcified cartilage integrity of graft	0: Intact, thin, and smooth 1: Altered (disrupted, thickened, or blurred)
Bone features	
6. Subchondral bone plate congruity of graft and host-graft junction	0: Intact and flush 1: Disrupted or not flush by >1 subchondral thickness
7. Subchondral bone marrow signal intensity of graft relative to epiphyseal bone	0: Normal 1: Abnormal (bone marrow edema pattern or hypointensity on all sequences)
8. Osseous integration at host-graft junction	0: Crossing trabeculae 1: Discernible cleft
Ancillary features	
9. Presence of cystic changes of graft and host-graft junction	0: Absent 1: Present
10. Opposing cartilage	0: Normal 1: Abnormal
11. Meniscal tears	0: Absent 1: Present
12. Synovitis	0: Absent 1: Present
13. Fat pad scarring	0: Absent 1: Present



INTRAOBSERVADOR



INTEROBSERVADOR

ACTOCA

(Assesment CT Osteochondral Allograft)

Parámetros TC	TC SCORE
1. Densidad del injerto en relación con el hueso huésped	0: Equivalente
	1: Superior
	2: Inferior
2. Integración ósea en la unión huésped-injerto	0: Trabéculas cruzadas
	1: Hendidura discernible <3mm
	2: Hendidura discernible >3mm
3. Porcentaje de superficie con una hendidura discernible en la unión huésped-injerto	0: <30%
	1: >30%
4. Cambios quísticos del injerto y/o unión huésped-injerto	0: Ausente
	1: Presente <3mm
	2: Presente >3mm
5. Presencia de fragmentos intrarticulares	0: Ausente
	1: Presente

ACTOCA

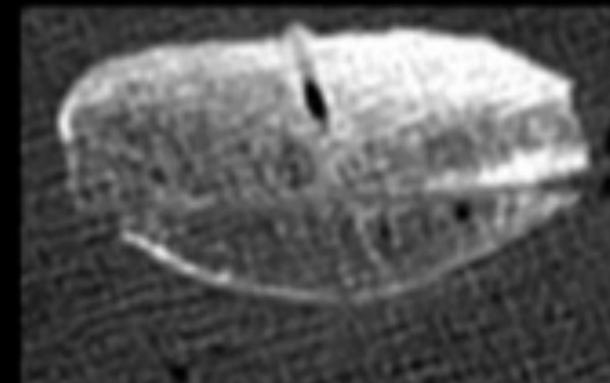
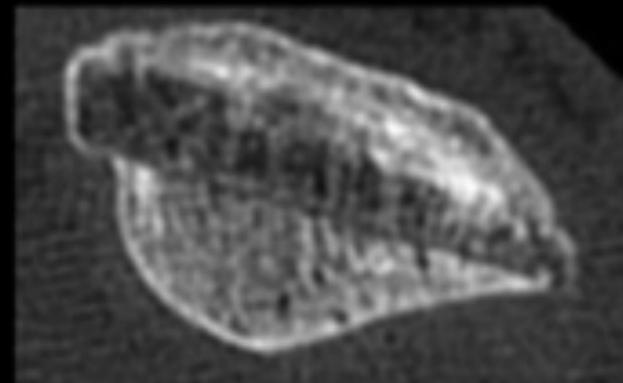
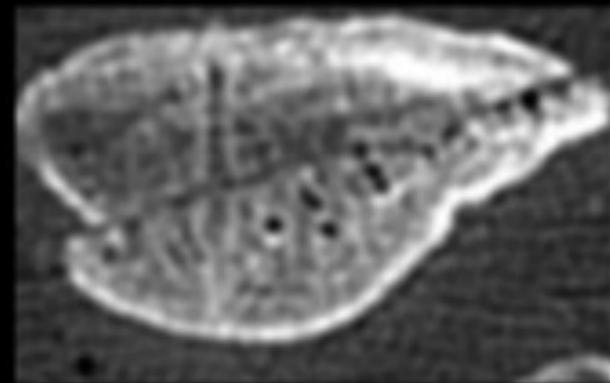
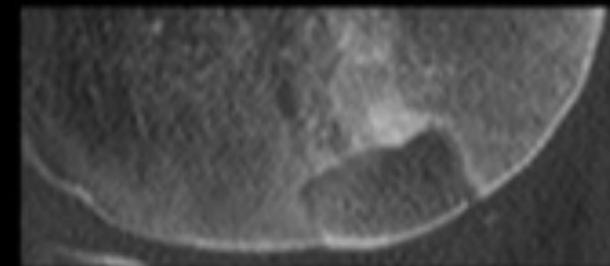
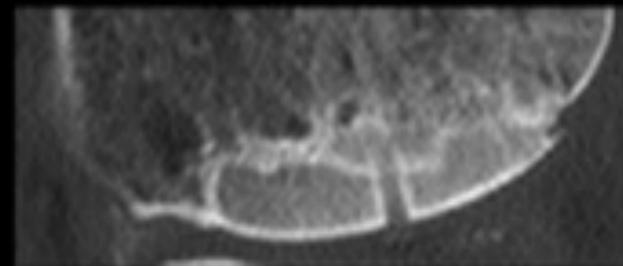
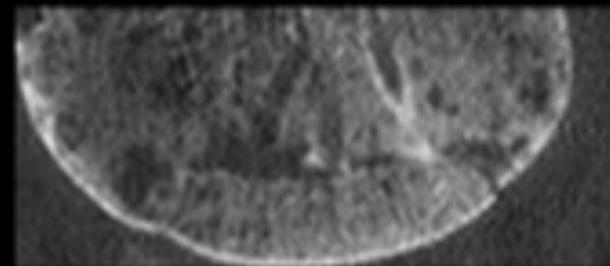
(Assesment CT Osteochondral Allograft)

I. Densidad del injerto en relación con el hueso huésped

0: Equivalente

1: Superior

2: Inferior



0

1

2

ACTOCA

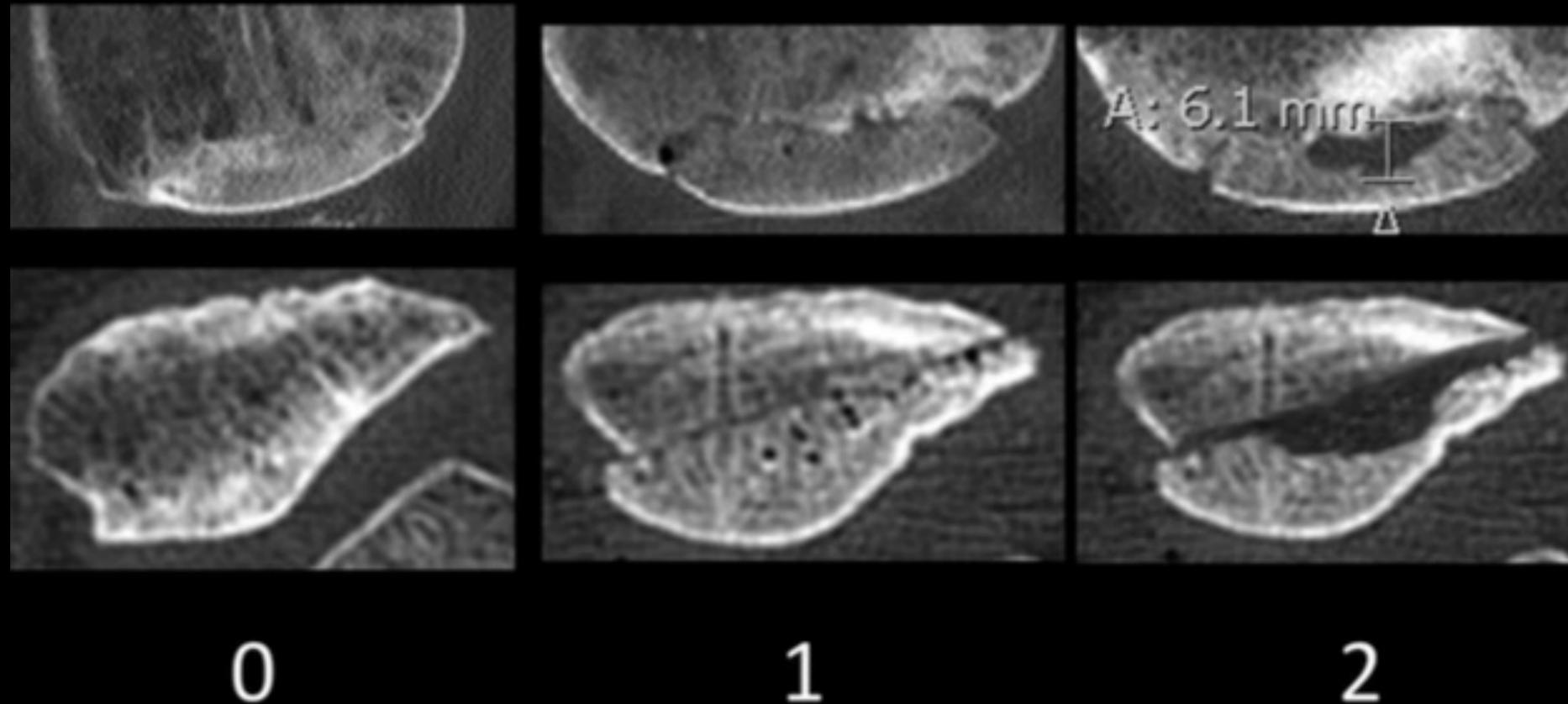
(Assesment CT Osteochondral Allograft)

2. Integración ósea en la unión huésped-injerto

0: Trabéculas cruzadas

1: Hendidura discernible <3mm

2: Hendidura discernible >3mm



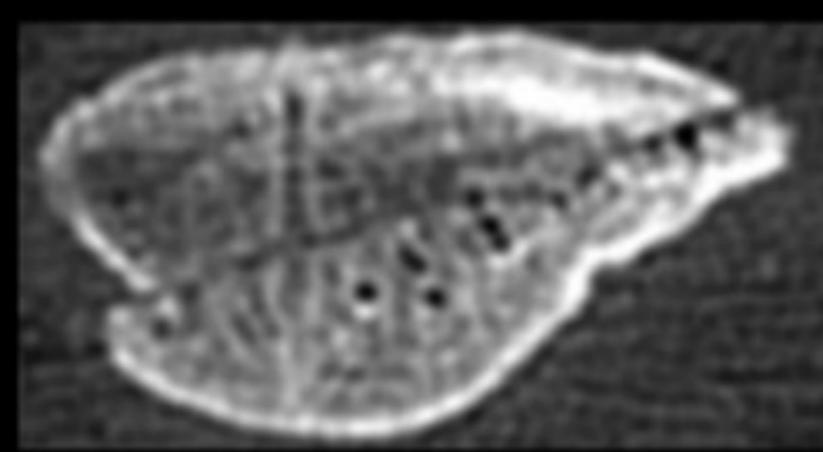
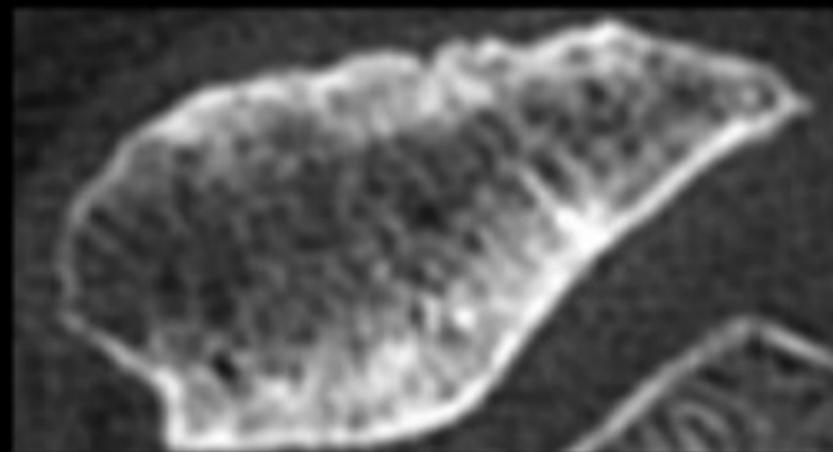
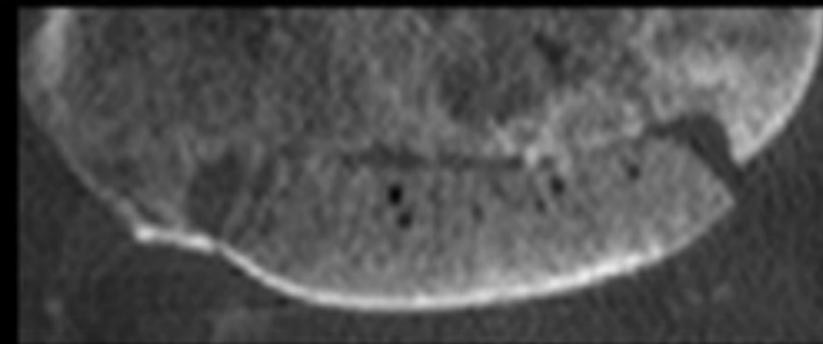
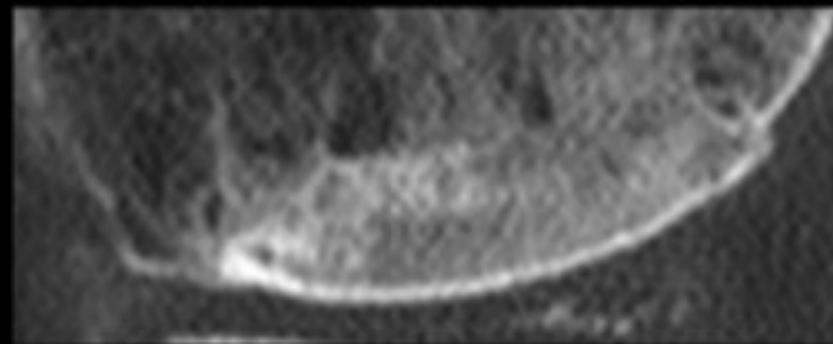
ACTOCA

(Assesment CT Osteochondral Allograft)

3. Porcentaje de superficie con una hendidura discernible en la unión huésped-injerto

0: <30%

1: >30%



0

1

ACTOCA

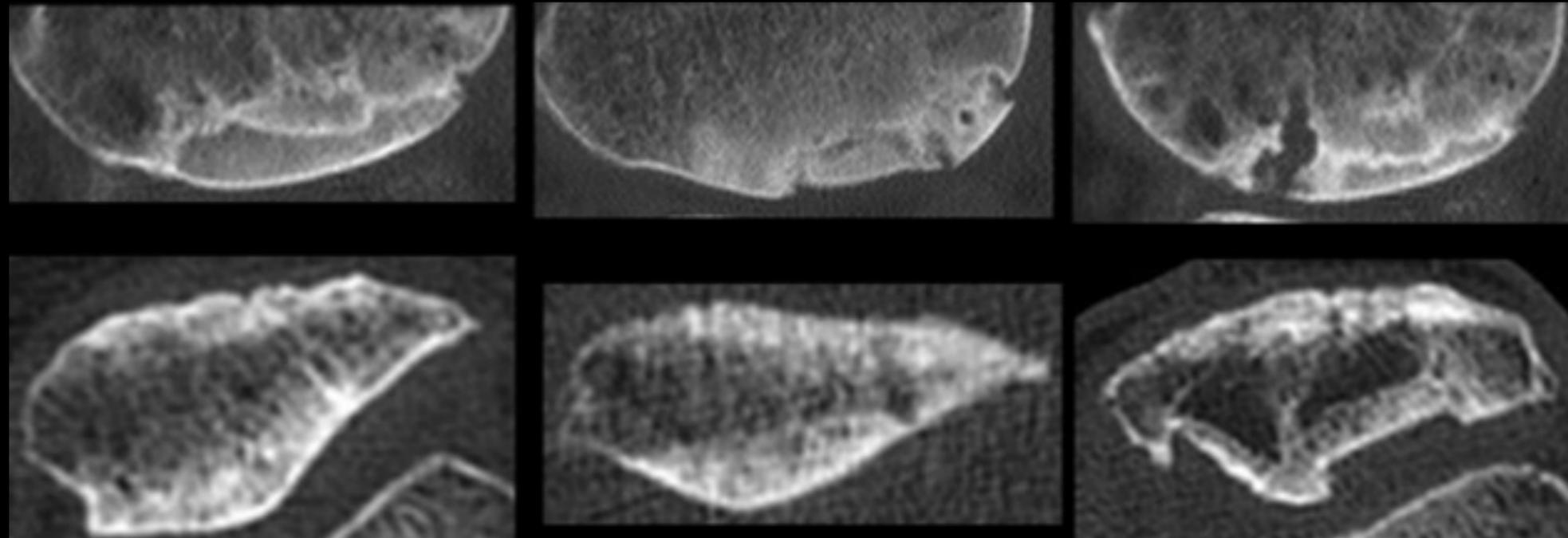
(Assesment CT Osteochondral Allograft)

4. Cambios quísticos del injerto y/o unión huésped-injerto

0: Ausente

1: Presente <3mm

2: Presente >3mm



0

1

2

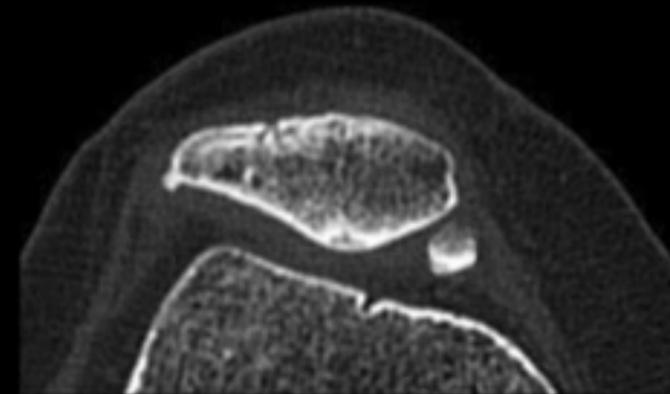
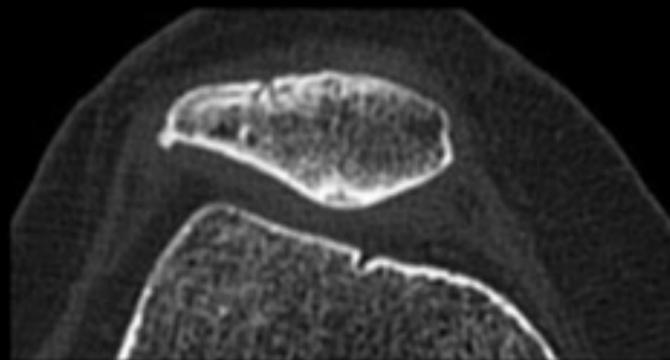
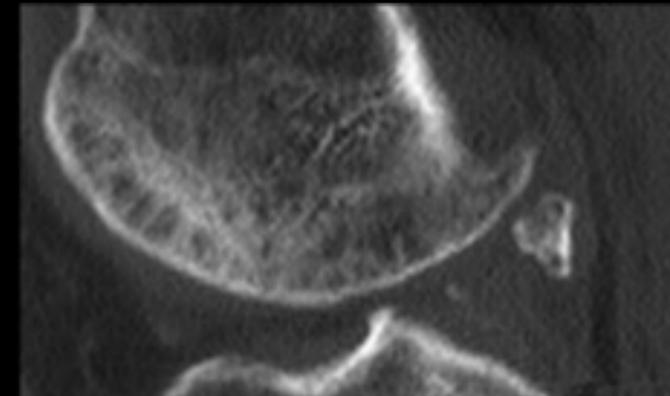
ACTOCA

(Assesment CT Osteochondral Allograft)

5. Presencia de fragmentos intrarticulares

0: Ausente

1: Presente



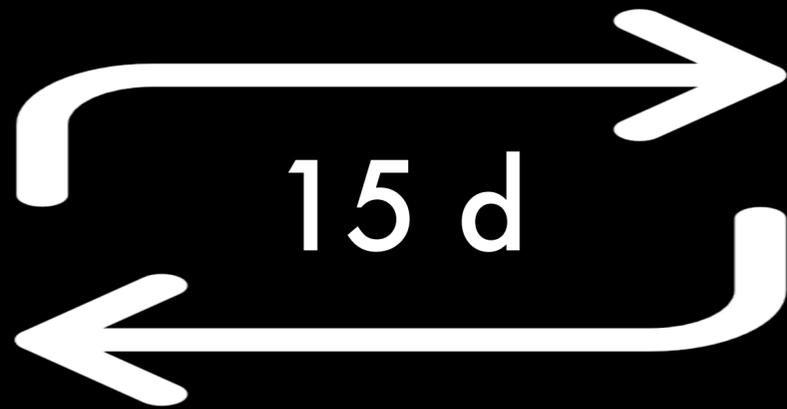
0

1

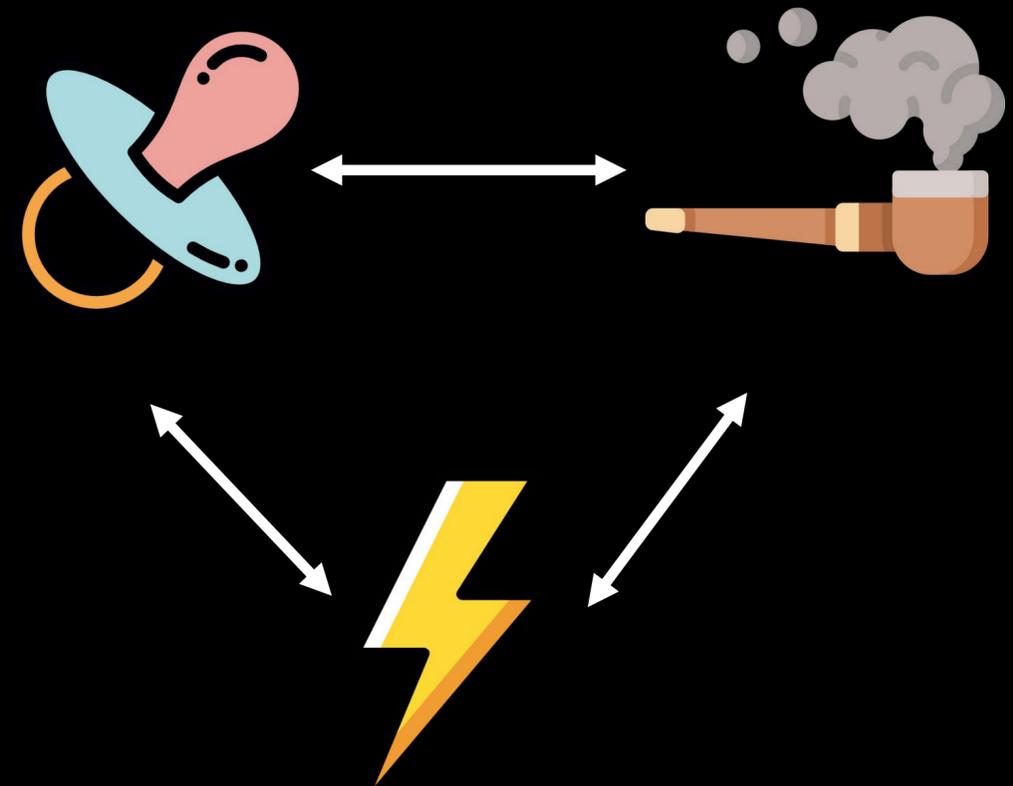
MATERIAL Y MÉTODOS



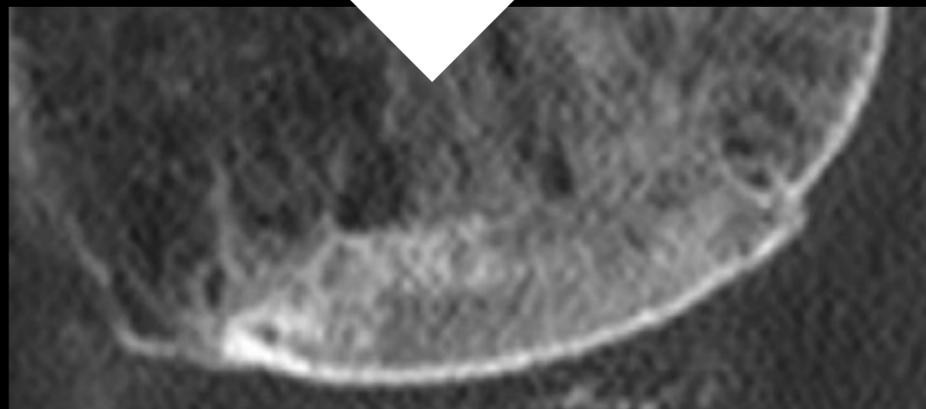
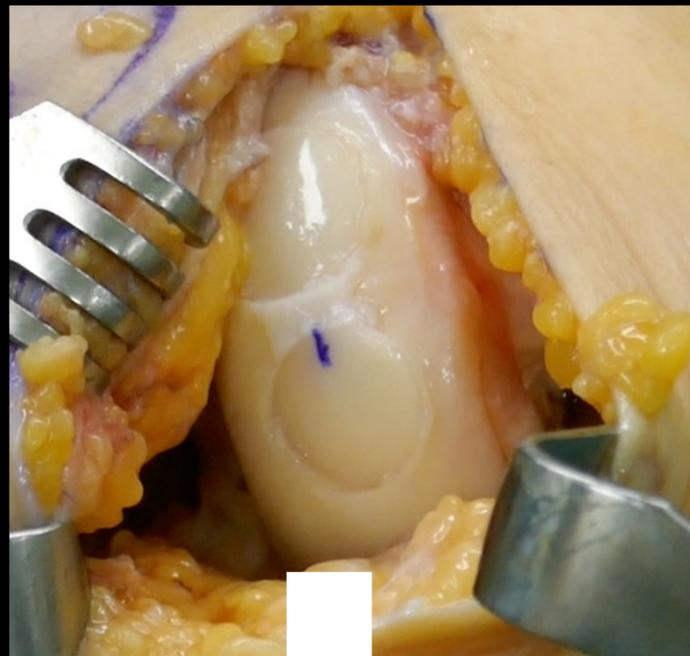
INTRA OBSERVADOR



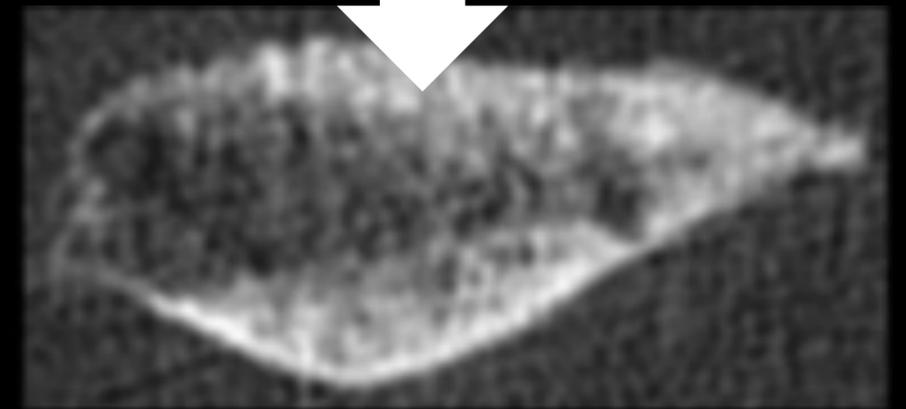
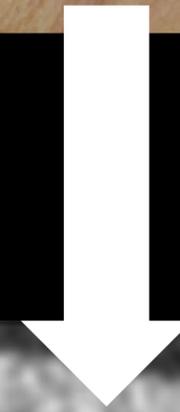
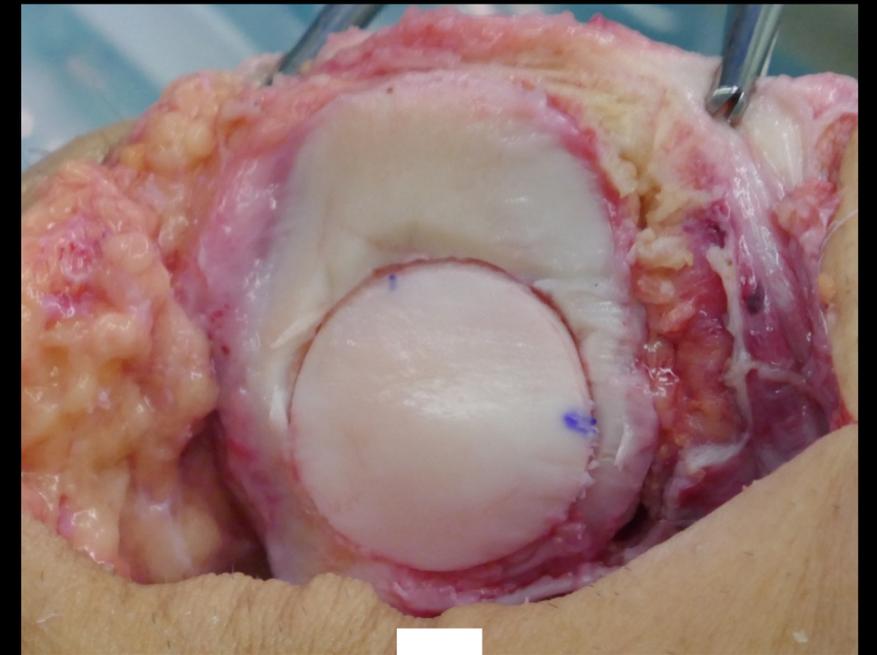
INTEROBSERVADOR



RESULTADOS



50



KAPPA	Grado de acuerdo
< 0.0	Sin acuerdo
0.00-0.20	Insignificante
0.21-0.40	Discreto
0.41-0.60	Moderado
0.61-0.80	Sustancial
0.81-1.00	Casi perfecto

RESULTADOS

Parámetros TC - ACTOCA	Concordancia INTRA (κ)	Concordancia INTER (κ)
1. Densidad del injerto en relación con el hueso huésped	I	0.537
2. Integración ósea en la unión huésped-injerto	I	0.778
3. Porcentaje de superficie con una hendidura discernible en la unión huésped-injerto	0.6	0.554
4. Cambios quísticos del injerto y/o unión huésped-injerto	0.677	0.646
5. Presencia de fragmentos intrarticulares	Perfecta	Perfecta

RESULTADOS



INTRA OBSERVADOR

MODERADO -
CASI PERFECTO



INTEROBSERVADOR

MODERADA -
SUSTANCIAL



$p < 0.05$

LIMITACIONES



Imagen TC fija



Protocolo de colimación

CONCLUSIONES

- ACTOCA → Escala confiable para evaluar aloinjertos osteocondrales de rodilla
- Estandarizar informes TC



CT features	CT Score
1. Graft signal density relative to host bone	0: equivalent 1: superior 2: inferior
2. Osseous integration at host-graft junction	0: crossing trabeculae 1: discernible cleft < 3 mm 2: discernible cleft > 3 mm
3. Surface percentage with a discernible cleft at junction	0: < 30% 1: > 30%
4. Cystic changes of graft	0: absent 1: present < 3 mm 2: present > 3 mm
5. Presence of intra-articular fluid	0: absent 1: present



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