

**Tratamiento de los defectos óseos en inestabilidad de hombro**

**¿Por qué tratar la  
lesión de Hill-Sachs  
off-track con  
Latarjet?**

**Juan Aguilar MD, FEBOT**



# 9 CONGRESO CONJUNTO AEA - SEROD

9th JOINT AEA-SEROD CONGRESS

30 CURSO  
de Enfermería  
en Artroscopia  
y Rodilla



MURCIA

1 - 3 DE JUNIO | 2022



 [juanaguilar.cot@gmail.com](mailto:juanaguilar.cot@gmail.com)

 [orcid.org/0000-0002-3253-8847](https://orcid.org/0000-0002-3253-8847)

 [JuanAguilar\\_COT](https://twitter.com/JuanAguilar_COT)

 [@juanaguilar\\_\\_](https://www.instagram.com/juanaguilar__)



09:00-09:55 h  
HOMBRO

MESA REDONDA  
**Tratamiento de los defectos óseos en  
inestabilidad de hombro**

*Moderador: Emilio Calvo (Madrid)*

- 09:00-09:08 h ¿Por qué tratar el defecto óseo glenoideo con injerto óseo libre?  
*Abdul-Ilah Hachem (Barcelona)*
- 09:08-09:16 h ¿Por qué tratar el defecto óseo glenoideo con Latarjet?  
*Gonzalo Samitier (Madrid)*
- 09:16-09:24 h ¿Por qué tratar la lesión de Hill-Sachs off-track con remplissage?  
*Giuseppe Milano (Italia)*
- 09:24-09:32 h ¿Por qué tratar la lesión de Hill-Sachs off-track con Latarjet?  
*Juan Aguilar (Madrid)*
- 09:32-09:40 h Comunicación libre
- 09:40-09:55 h Discusión casos



FUNDACION JIMENEZ DIAZ  
CLINICA DE LA CONCEPCION

9

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**MURCIA**

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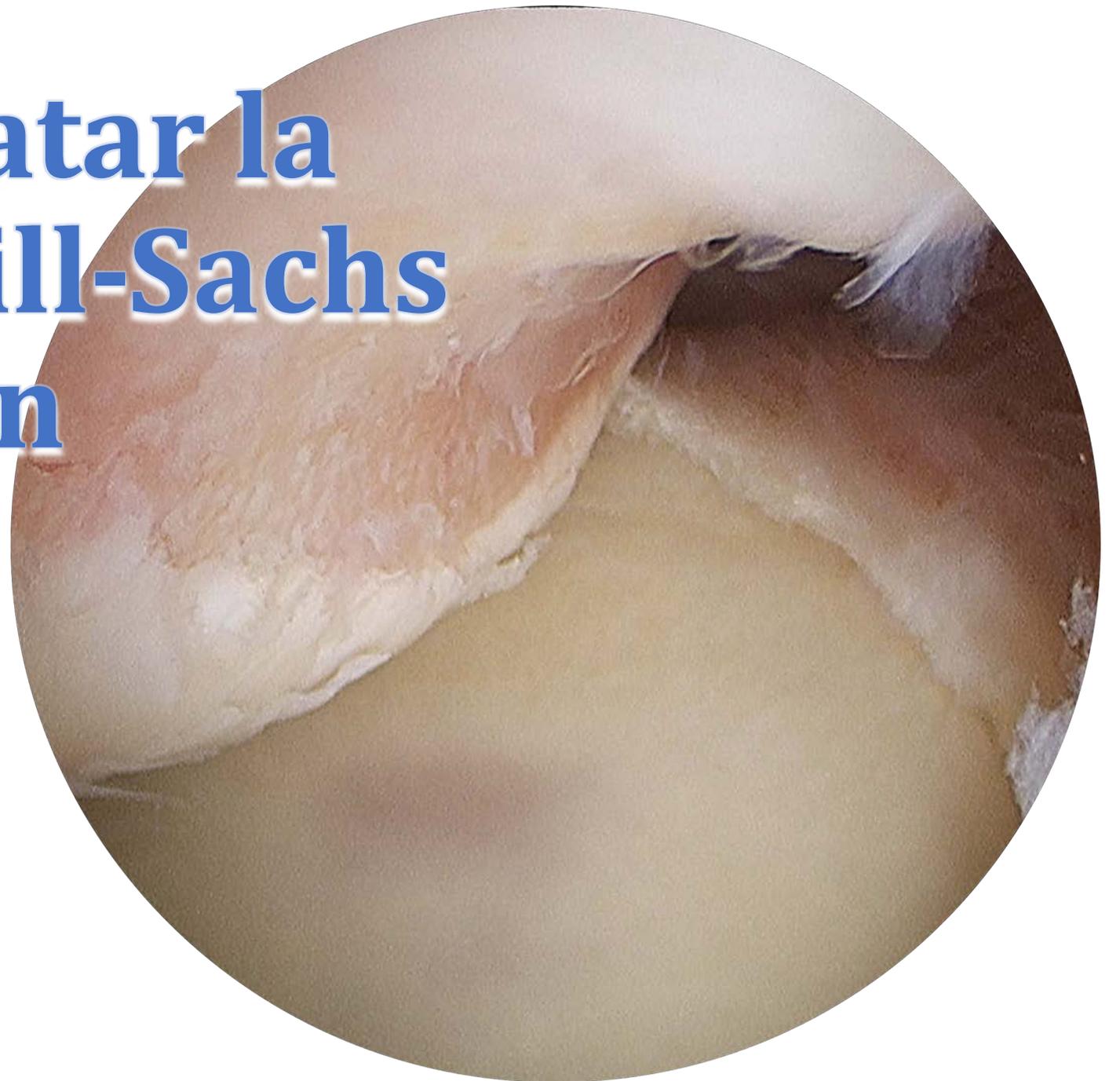
**30 CURSO**

de Enfermería  
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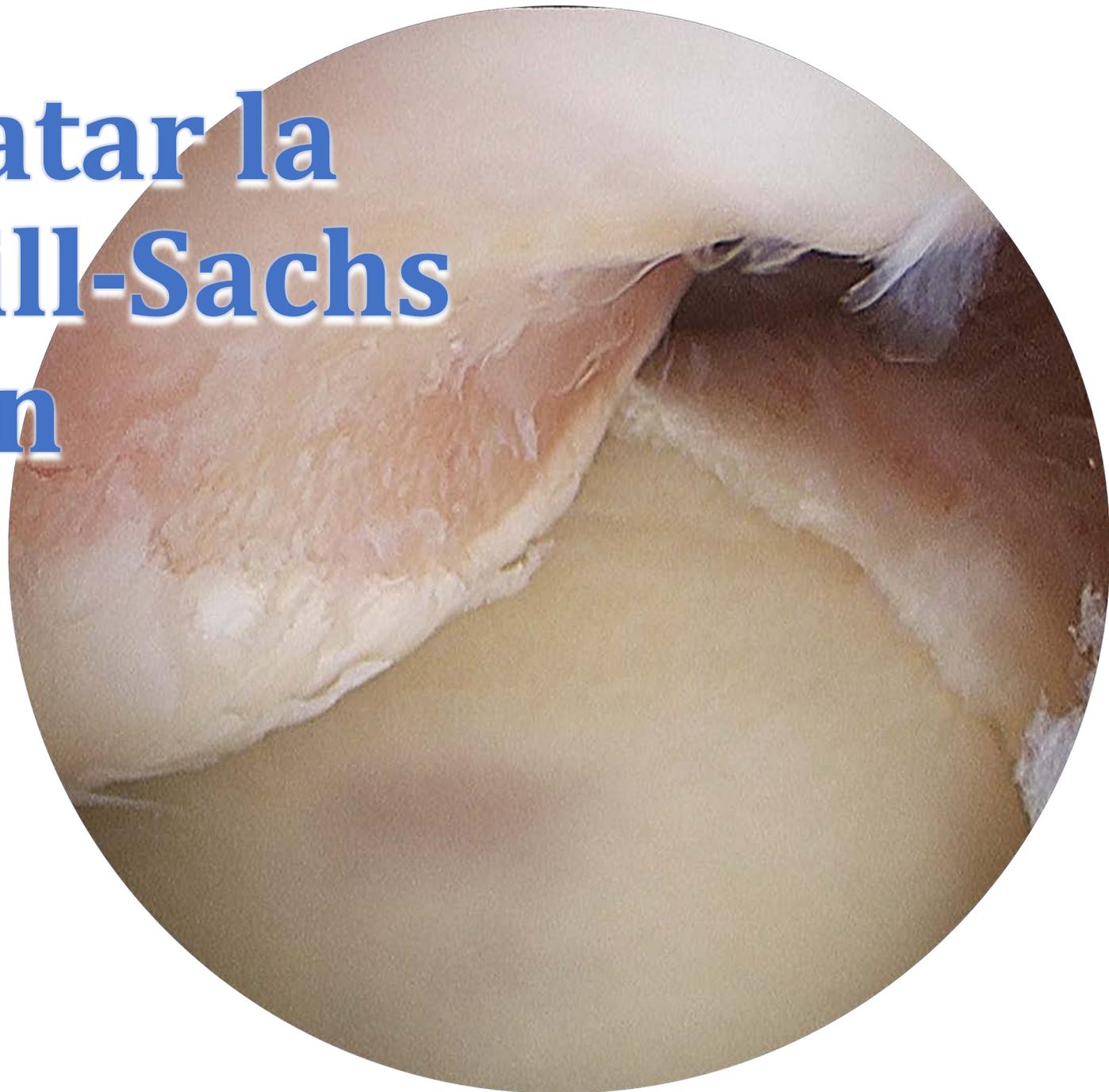
**Ningún conflicto de interés que declarar**

**¿Por qué tratar la  
lesión de Hill-Sachs  
off-track con  
Latarjet?**

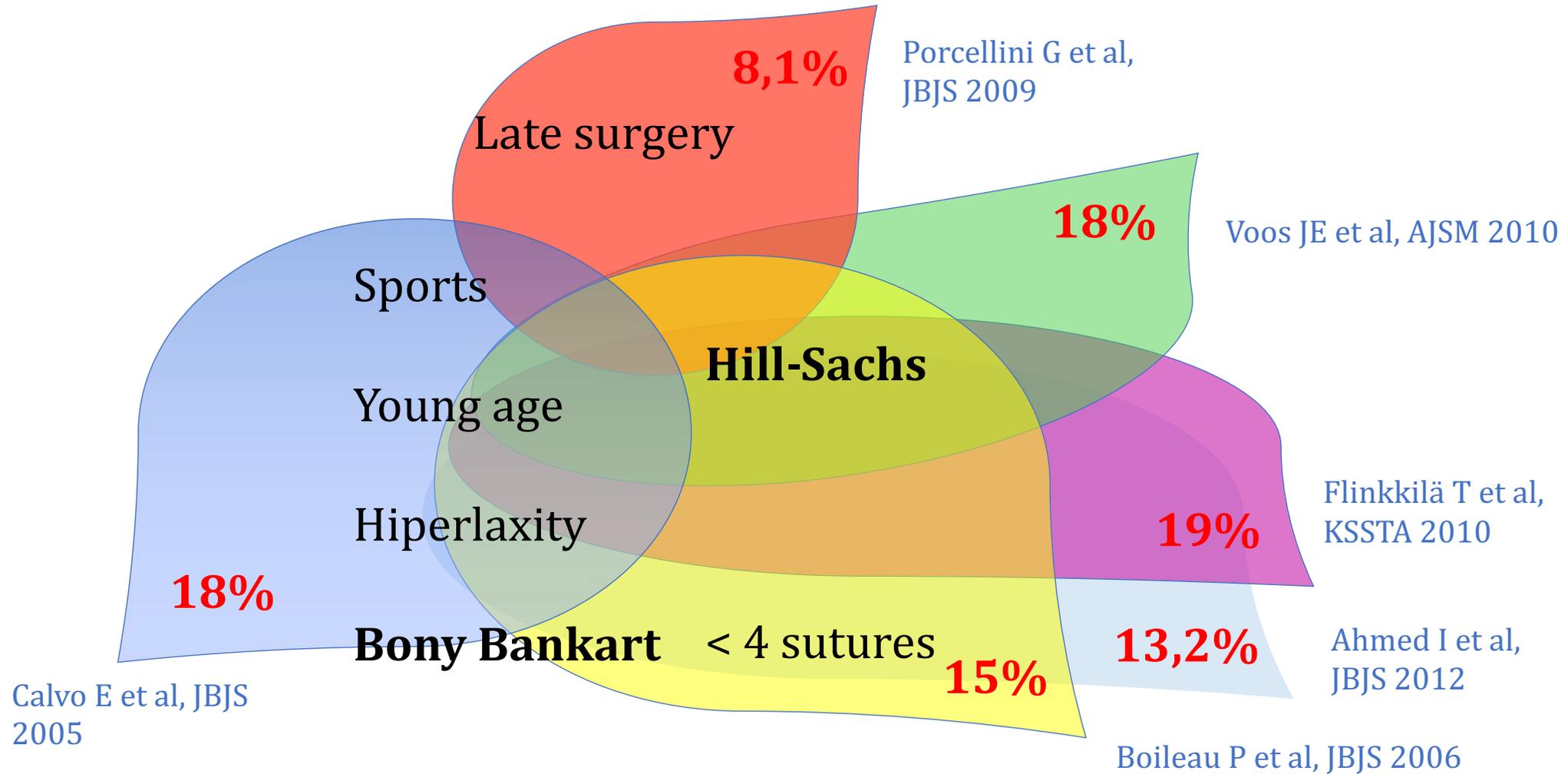


# ¿Por qué tratar la lesión de Hill-Sachs off-track con Latarjet?

**#3 premisas**



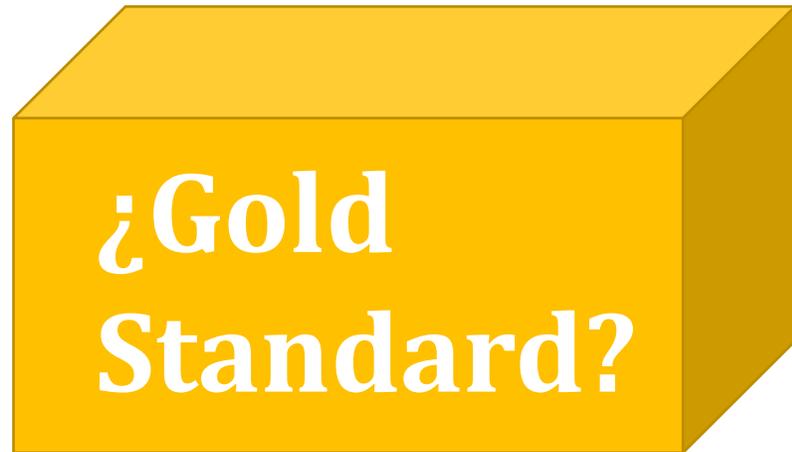
# Factores pronósticos: aumentan **recidiva inestabilidad**



**#1 La reparación convencional de partes blandas es insuficiente en muchos casos**

# Recidiva a largo plazo: Arthroscopic Bankart Repair

▣ >10a seguimiento



**Resultados  
inaceptables**

**18%**

Aboalata M et al. AJSM 2016

**30%**

Flinkkilä T et al. KSSTA 2010

**32%**

Aguilar J et al. SECEC Congress 2021

# Defectos óseos

## ¿Cómo son de frecuentes?

82-100% en inestabilidad recurrente

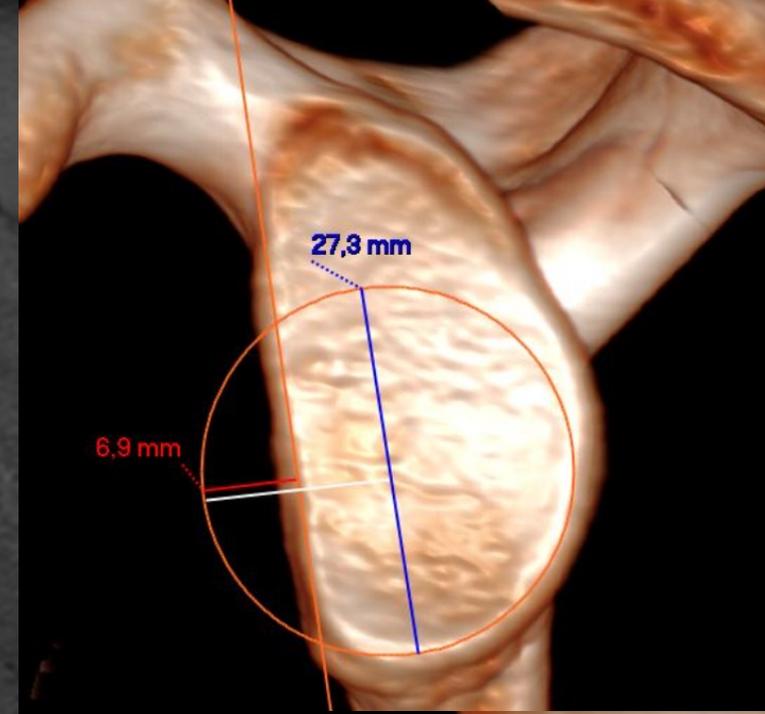
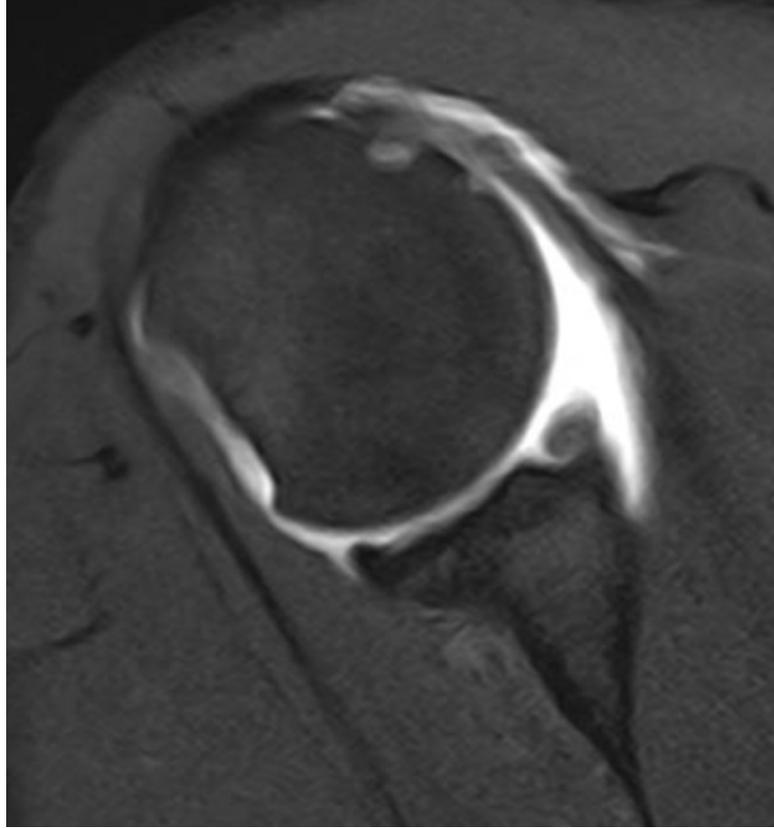
- Griffith JF et al, AJR Am Roentgenol 2015

82% lesiones bipolares

- Nakagawa S et al, AJSM 2015

## ¿Cómo son de relevantes?

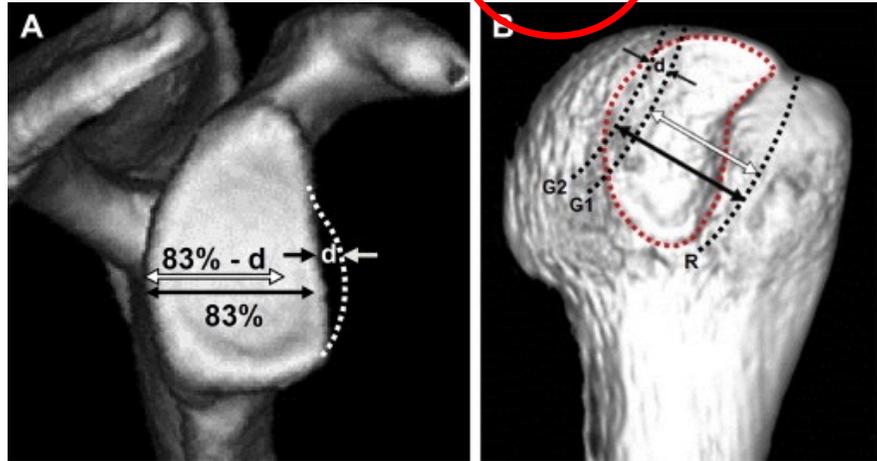
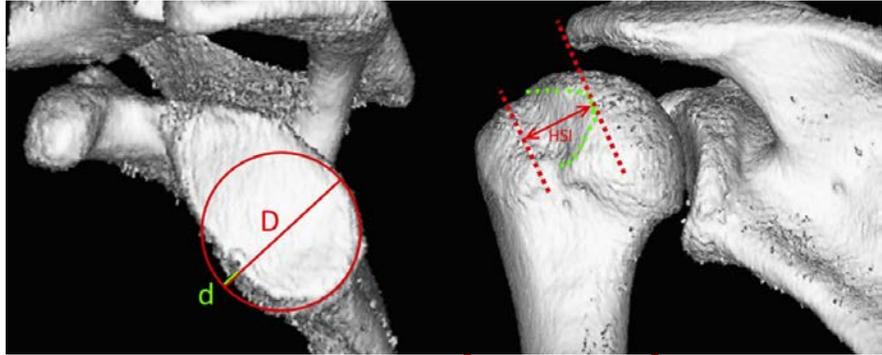
- Burkhart SS et al. Arthroscopy 2000
- Boileau P et al, JBJS 2006
- Shaha JS et al, AJSM 2015



**#2 Los defectos óseos son un factor pronóstico determinante y deben guiar el tratamiento.**

# El concepto del Glenoid Track

Yamamoto K et al, JSES 2007

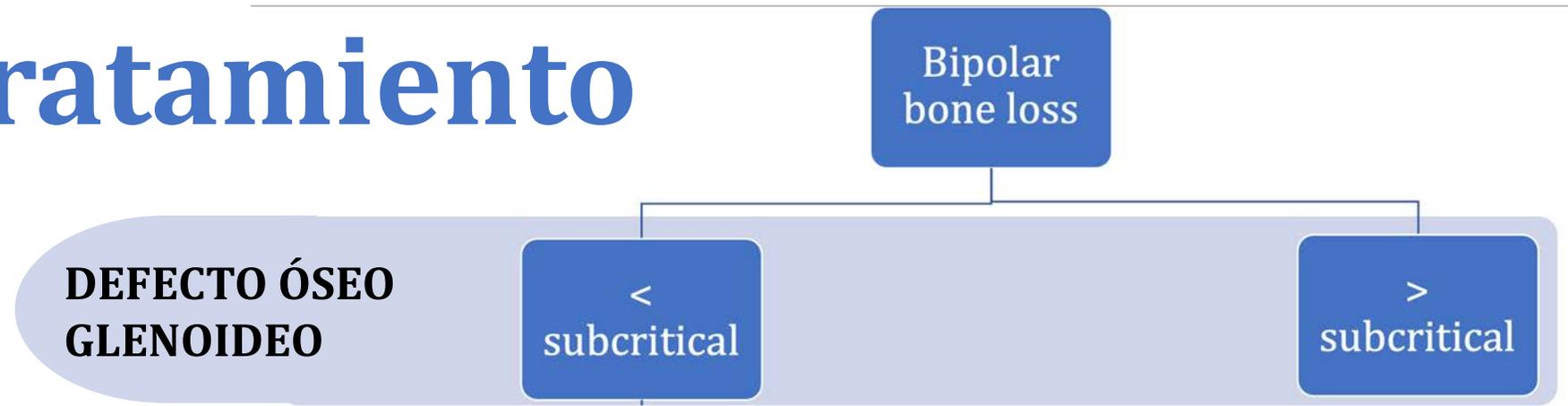


- Interacción dinámica
- Lesiones óseas bipolares interrelacionadas
- **Relevancia clínica**  
**Clasificación ontrack – offtrack:**  
ampliamente aceptada
  - Di Giacomo G et al, Arthroscopy 2014
  - Locher J et al, Arthroscopy 2016;
  - Shaha JS et al, Arthroscopy 2018;
  - Hatta T et al, JSES 2018

**#3 Se deben cuantificar ambas lesiones óseas, glenoidea y humeral**

# Plan de tratamiento

# Plan de tratamiento



# Plan de tratamiento

¿Cuál es el %  
límite de pérdida  
ósea glenoidea?

**DEFECTO ÓSEO  
GLENOIDEO**

<  
subcritical

Bipolar  
bone loss

10-15%

>  
subcritical

25

20

17

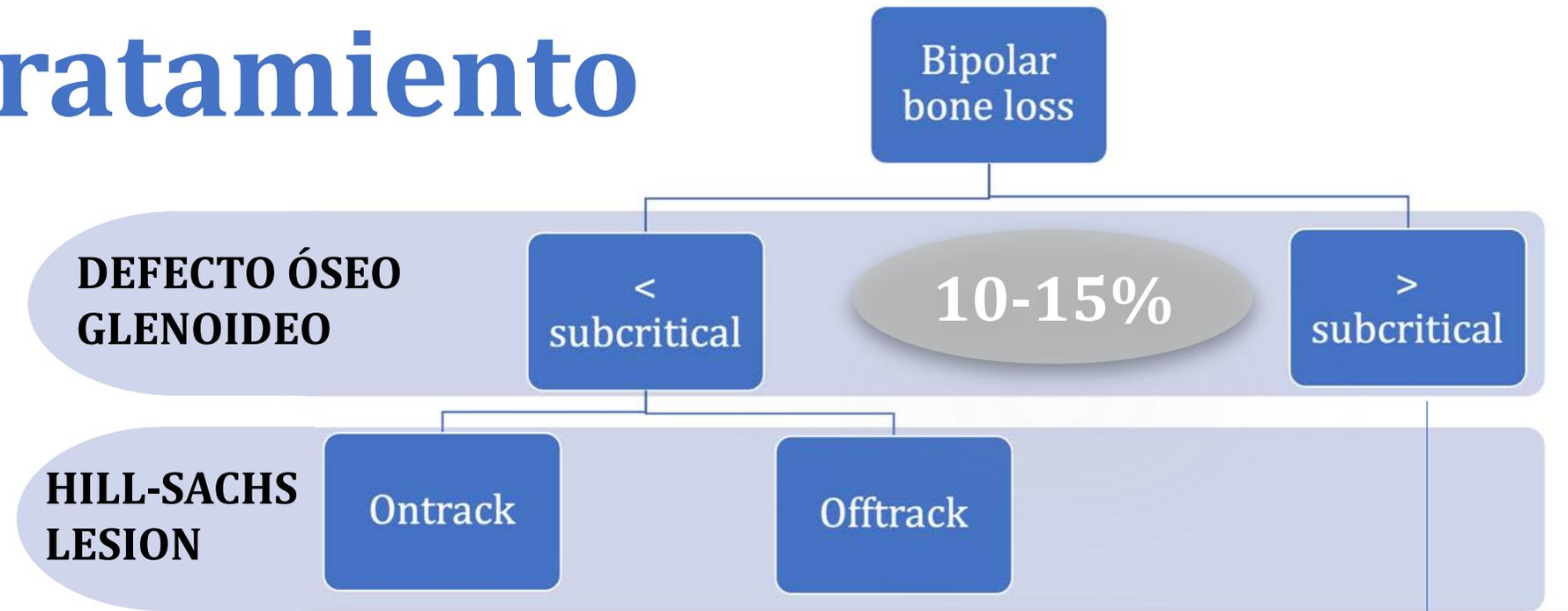
13,5

Shaha et al AJSM 2015

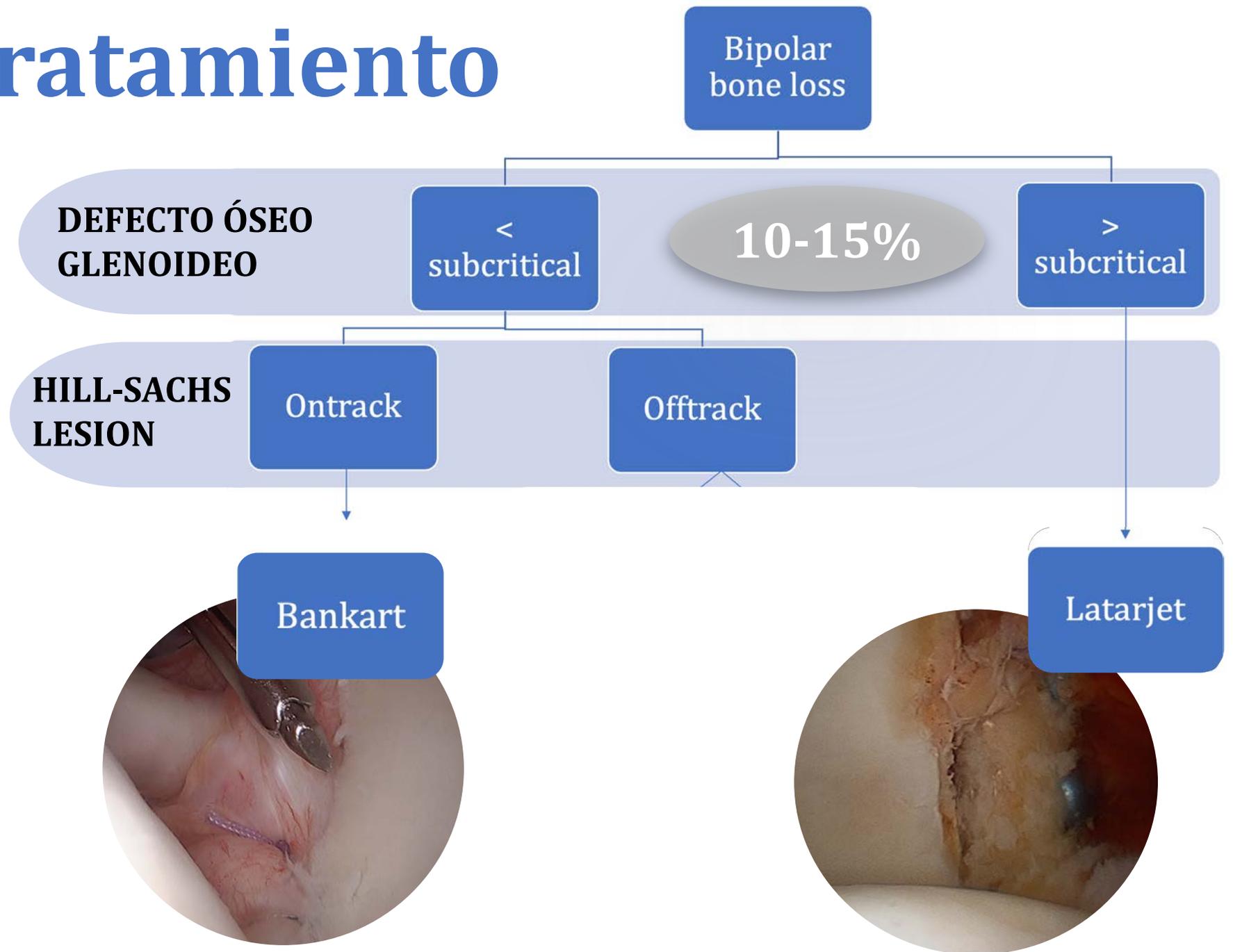
Latarjet



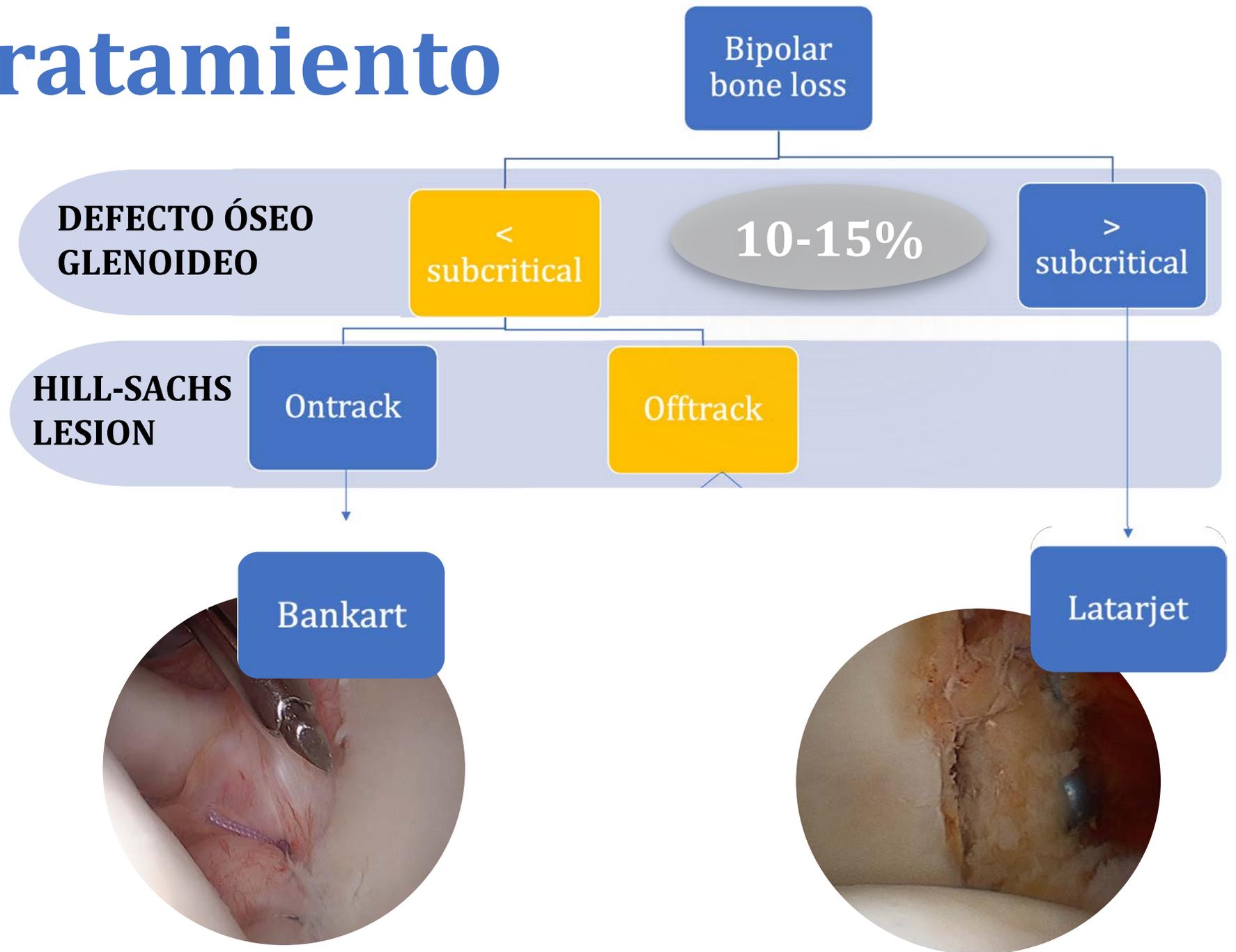
# Plan de tratamiento

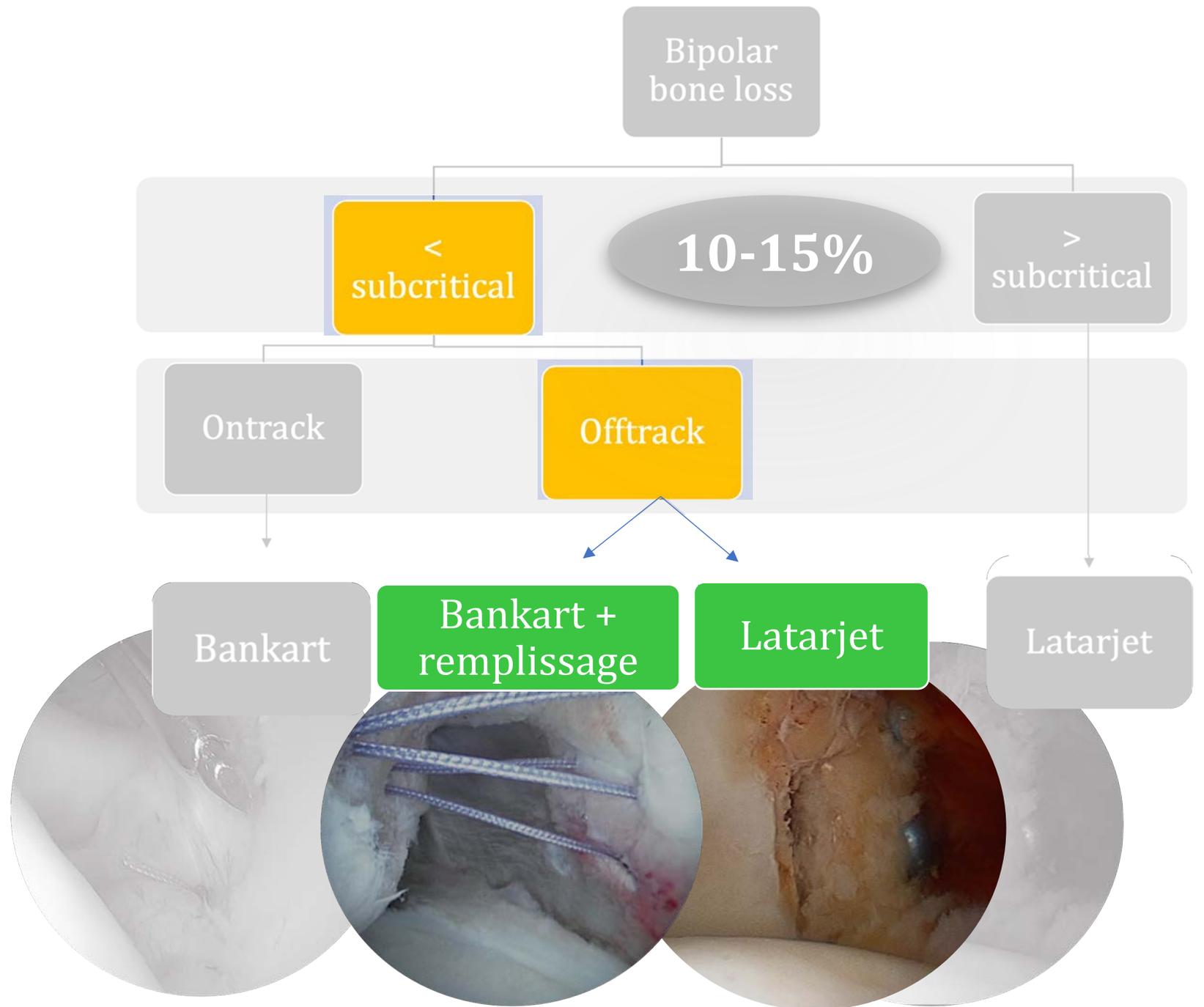


# Plan de tratamiento



# Plan de tratamiento



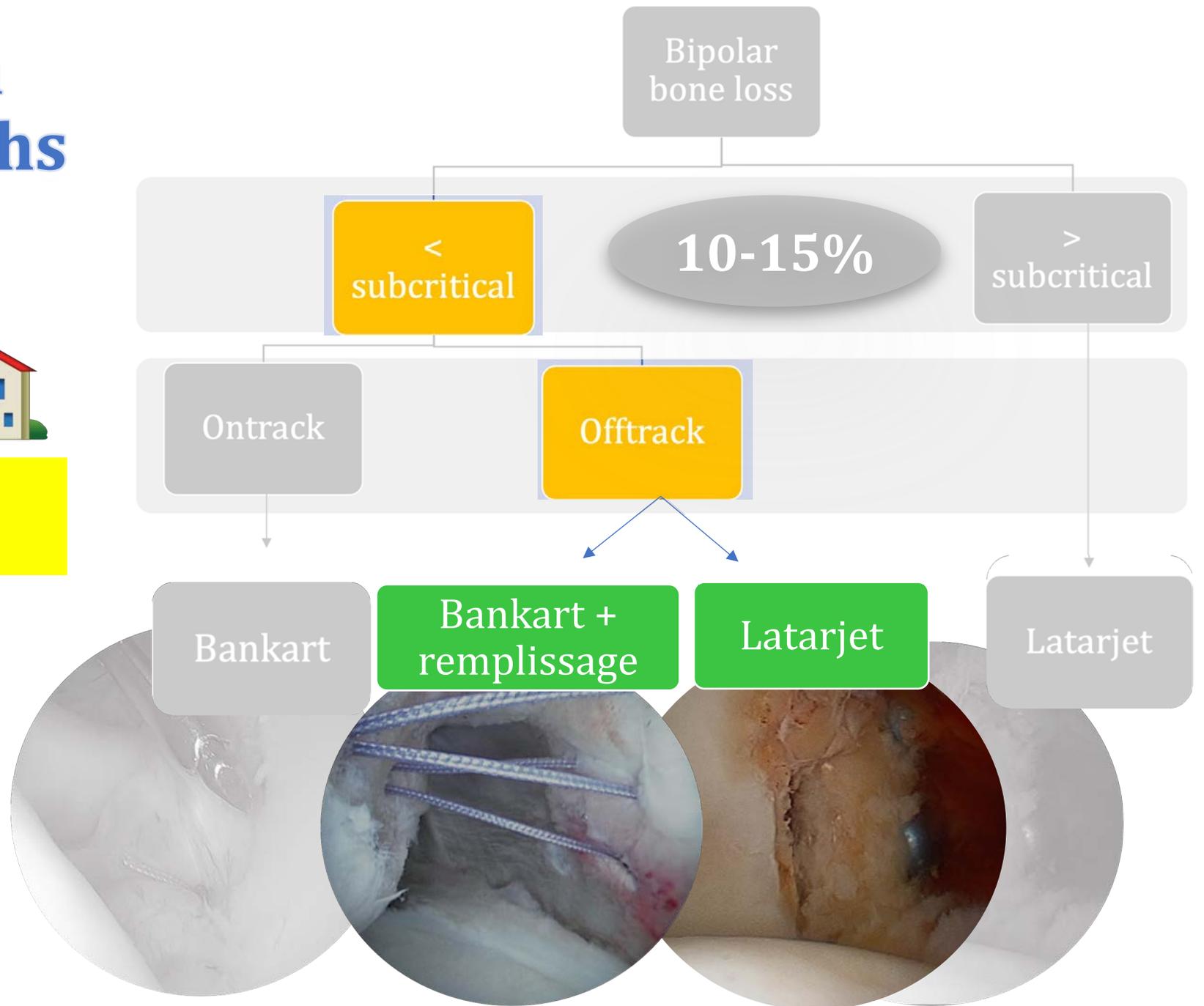


# ¿Por qué tratar la lesión de Hill-Sachs off-track con Latarjet?

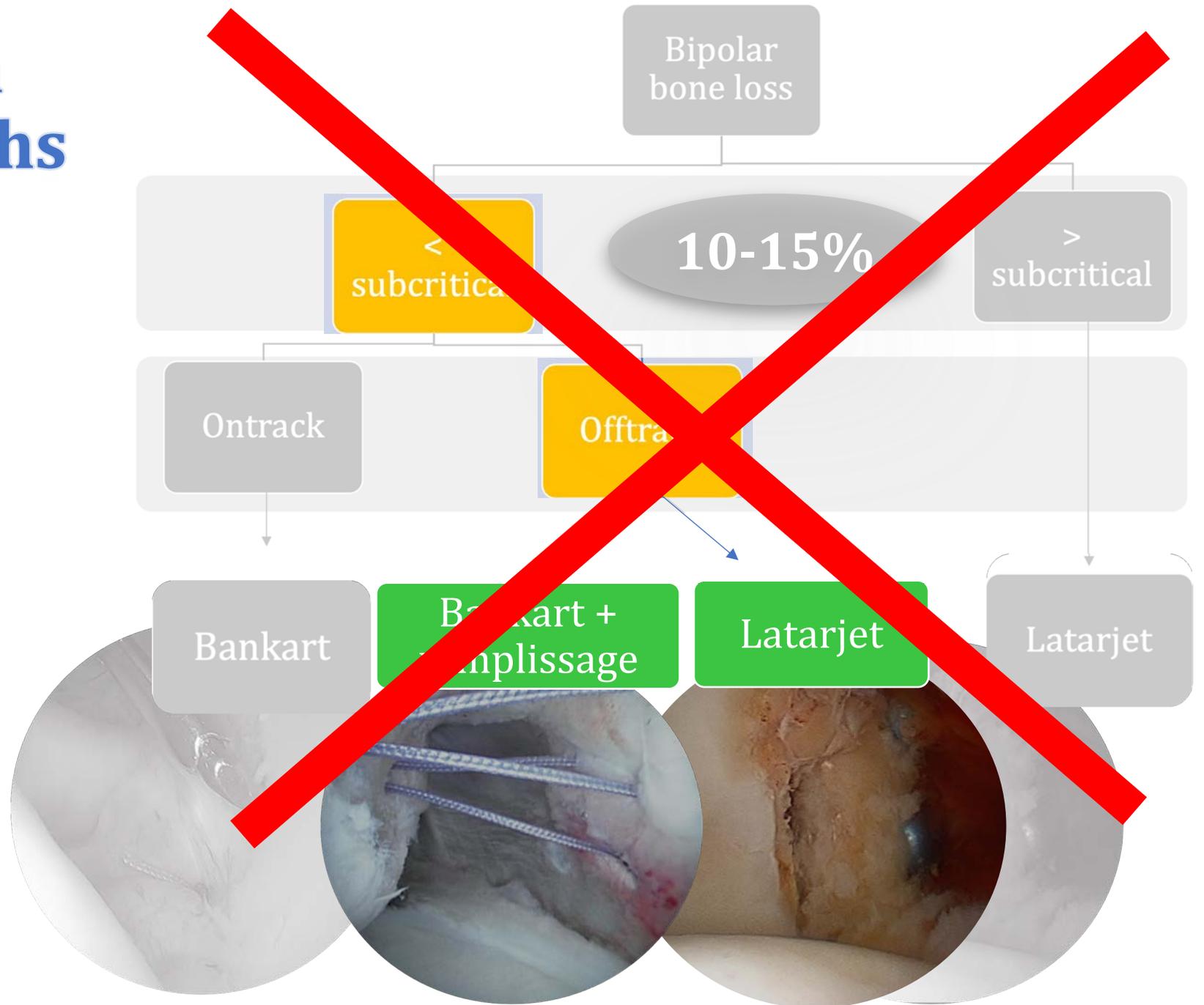
# To take home



**#8 mensajes**

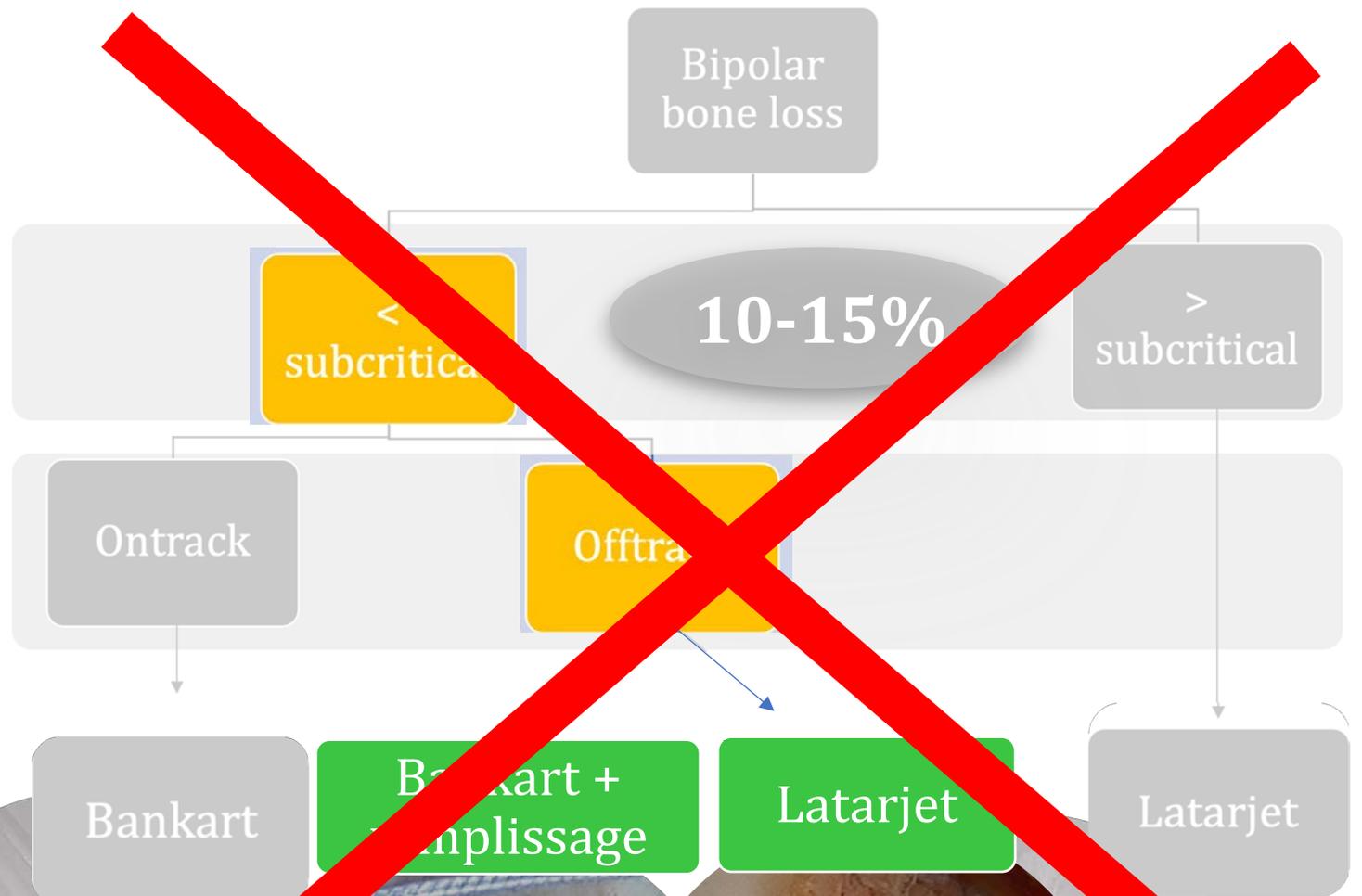


# ¿Por qué tratar la lesión de Hill-Sachs off-track con Latarjet?



# ¿Por qué tratar la lesión de Hill-Sachs off-track con Latarjet?

- Edad
- Hiperlaxitud
- Tipo actividad deportiva
- Nivel de competición



Criteria for arthroscopic treatment of anterior instability of the shoulder  
A PROSPECTIVE STUDY

Calvo E et al, JBJS 2005

Table II. Variables included in the stepwise logistic regression analysis (predictors of recurrence)

Variable	Odds ratio	95% confidence interval	p value	R	Score
Age < 28 yrs	8.59	(0.78 to 94.97)	0.08	0.14	1
Ligamentous laxity	6.01	(0.92 to 39.20)	0.06	0.16	1
Type-2 fracture of the anterior glenoid rim	81.106	(1.07 to NC)*	0.93†	0.01	5
Post-operative participation in contact or overhead sports	12.07	(1.71 to 85.24)	0.01	0.27	1

\* not calculable

† the statistical significance of this variable was poor because of the size of the sample

I was just looking for  
A simple answer

$C = 6A / 3.75 \times \pi$   $h/748 \times \sqrt{104} / 17^2 = 5$   
 $476, 722, 413, 903 \times 146 \times \pi \times C$  EXHIBITIAL

499.762557%  $\div -7.864117\%$  EQUAL TO OR LESS THAN  $\Delta \sqrt{41/13} + 11$   $\times \sqrt{2} + 2\sqrt{3} = 1091/8$  TO THE  $10^6$  BEARD

TO THE POWER OF INFINITY%  $\div 91\%$   $\div 3-575 \times \frac{3}{2}$   $\leq 80 \times 12.2 \times C \times \sqrt{6} / 14.75 \times \pi^2$  IF THEN  $\pi = 475, 1$

AXIS X TANGENT Y LESS THAN  $\pi \times C - 6b$   $176 / -3312\%$   $-r^2 + b^2 = \Delta$   $199-742 / 3.56$  TRAJECTORY  $\circ = 551.4994$  THE SUM OF  $829^2 + 6 = \pi \times 11$  OVER 7.1  
 $\frac{2^2 \times 10^4 - (17)^2}{(4b + 10^4)}$   $\frac{7727 \sqrt{10} + 17}{(4b + 10^4)}$   $\frac{19^2 + 246^2 (C) \times \pi \times 4^2 \times 10^4}{8 \times C^2 \times 91/47 + 766^2}$  THEN  $\frac{5r(61^2) = 12.4^2}{(n-r)^2} \Delta = \frac{2}{3} (C)$

$19/17, 130 \times 10^3 (C)$   $5r \sqrt{91.42} \times 125$  OVER  $(11.537) \times r^2 / 139 - (475 - 177^2) \div (C+d) - (n-b^2) / 1466 - 204 = 17 + 23.85^2 = n$

$X = \text{GRAVITY}$   $Y = (4n) \times O^2 = 435$  NUMBER  $C > 417$   $(x-y)$

$Y \times 7 + 3n$  IF  $C = ab^2 / Z \times 75$  - THE SUM OF  $(C-1)17$

$75r = \frac{1}{2} + \frac{1}{3} \times 91r = 1446 + 48 \times 11^2 \div 7(C+r)$   $r^2 = 9$   $n \dots 10 \dots 4$   $14 \times 15C = (n-g)^3$

$15 \div 4/C \times 4^2 > 4^2 C - 19^2 \times (r+r^2) \times 9^2 = 159 \times 15r^2 + 8^2 \times 4C^2 \times 104A \div 8032(C+n) = g$

$5514r \times (n^2) \div 745, 747$  AND THE OTHER  $(4-5)$   $17 + 97 - (11^2) \div (C+r) \sqrt{\downarrow \uparrow} = 1034 (D2E) + 11 + (d+g) / (C+r)^2 + 0$

$\frac{d-g-T}{45^2 r} + \frac{g}{r^2}$   $\frac{14 + 4(d)^3 / 15n}{25g \times 72^2 (nr)^2}$   $\frac{73/44/17/6+n=Z}{Z+r = 3\% \div 71^2}$   $\frac{10(n-7^2) - 91/(g) = Z}{(C+r)^2 + 0}$



Bill  
Abbott

# Plan tratamiento general

1

**Pérdida ósea  
glenoidea**



2

**Lesión de Hill  
Sachs: on-track  
/offtrack**



3

**Resto de factores de riesgo  
dependientes del paciente**

**#1**

**Valoración conjunta:**

- **PÉRDIDA ÓSEA BIPOLAR**
- **FACTORES RIESGO  
específicos paciente**

# Plan tratamiento general

**1** Pérdida ósea glenoidea



**2** Lesión de Hill Sachs: on-track /offtrack



**#1**

**Valoración conjunta:**

- **PÉRDIDA ÓSEA BIPOLAR**
- **FACTORES RIESGO específicos paciente**

Calvo E et al, JBJS 2005



Criteria for arthroscopic treatment of anterior instability of the shoulder  
A PROSPECTIVE STUDY

**3** Resto de factores de riesgo dependientes del paciente

Di Giacomo G et al, Arthroscopy 2020

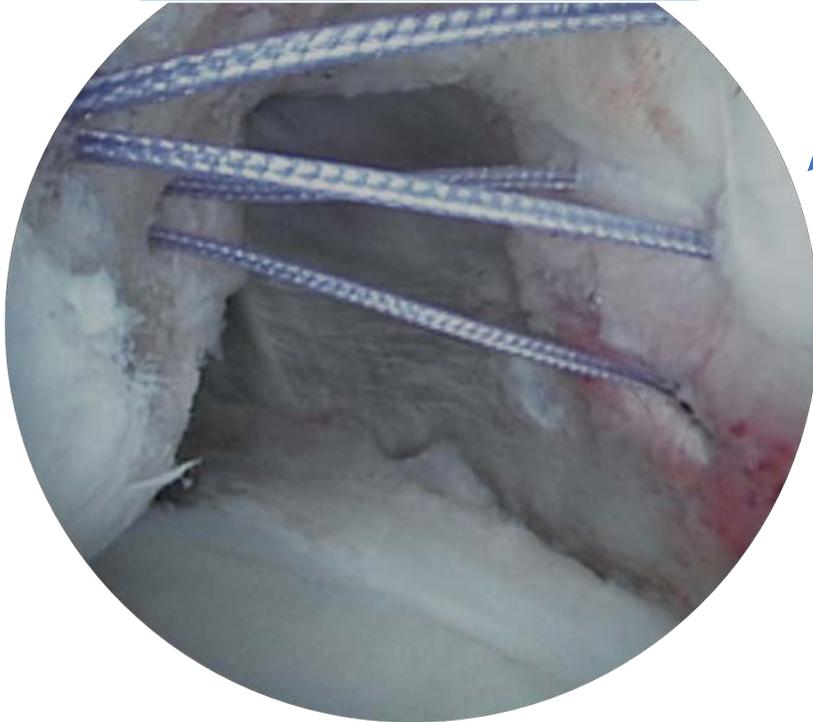
**Table 2.** Non-bone Loss Factors Were the Same in ISIS and GTIMS

GTIMS Prognostic Factors	Score
Age at surgery (years)	
≤ 20	2
> 20	0
Type of sport	
Contact or forced overhead	1
Other	0
Level of competition in sport	
Competitive	2
Recreational or none	0
Shoulder hyperlaxity	
Confirmed anterior or inferior hyperlaxity	1
Normal laxity	0
Evaluation of bone loss on 3D CT	
"On-Track"	0
"Off-Track"	4
Total GTIMS	10

NOTE. Bone loss was evaluated on 3D reconstructed shoulder CT scans and categorized as "on-track" or "off-track" in GTIMS.

3D, Three-dimensional; CT, computed tomography; GTIMS, Glenoid Track Instability Management Score.

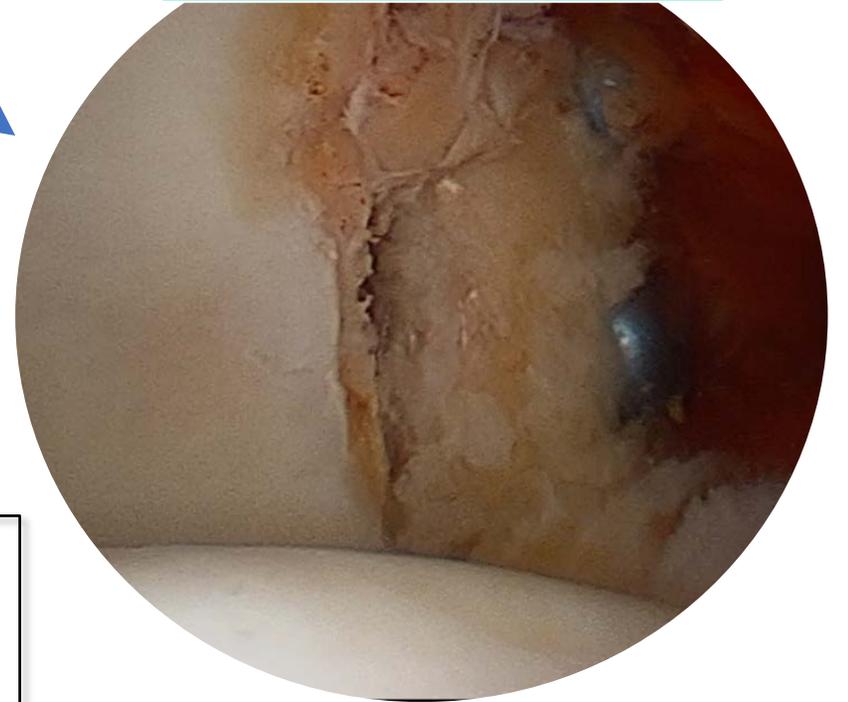
Bankart +  
remplissage



## Lesión de Hill Sachs **OFF-TRACK**



Latarjet



**#2**

¿Demandas  
funcionales?





**¿Qué le preocupa al paciente?**

# ¿Qué le preocupa al paciente?

**1** **Recidiva inestabilidad**

+

Capacidad para continuar  
con la misma actividad de  
forma segura

# ¿Qué le preocupa al paciente?

**1** **Recidiva inestabilidad**

**+**

Capacidad para continuar  
con la misma actividad de  
forma segura

**2** **Resultado funcional**

**Dolor**

**Movilidad**

**Fuerza**

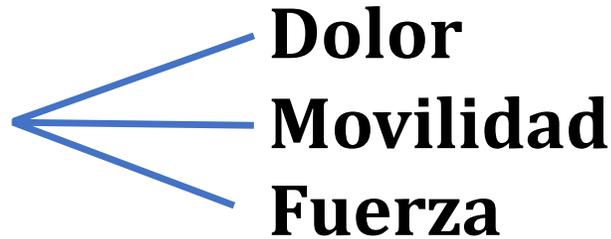
# ¿Qué le preocupa al paciente?

**1 Recidiva inestabilidad**



Capacidad para continuar  
con la misma actividad de  
forma segura

**2 Resultado funcional**

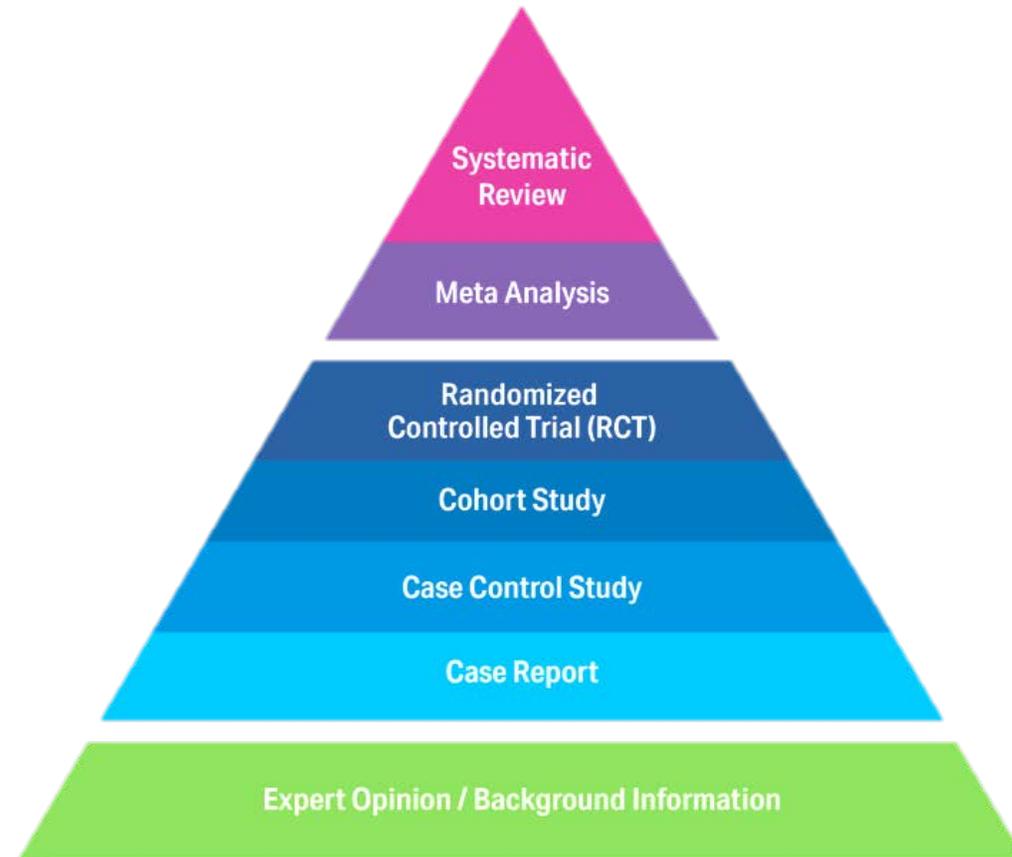


**3 Riesgo de otras  
complicaciones**

**Manejar expectativas**



# ¿Qué evidencia tenemos de los resultados de cada técnica quirúrgica?

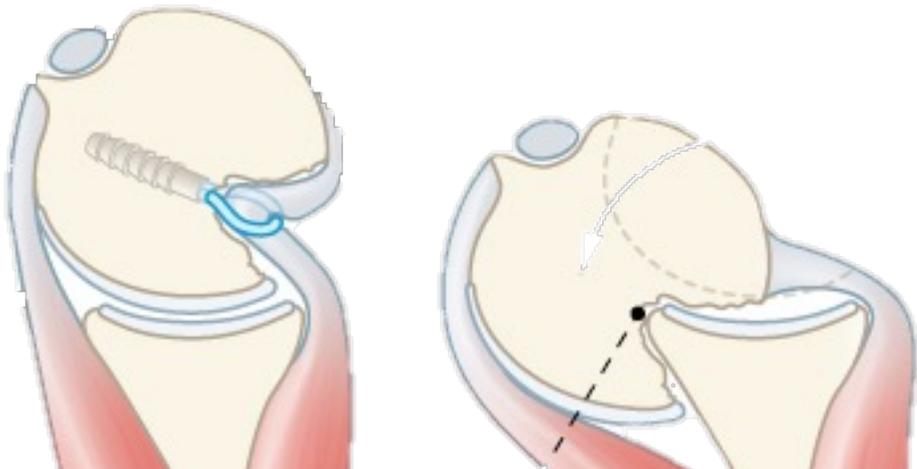


Wolf RP et al,  
Arthroscopy  
2008

# Remplissage



Capsulo-mio-tenodesis

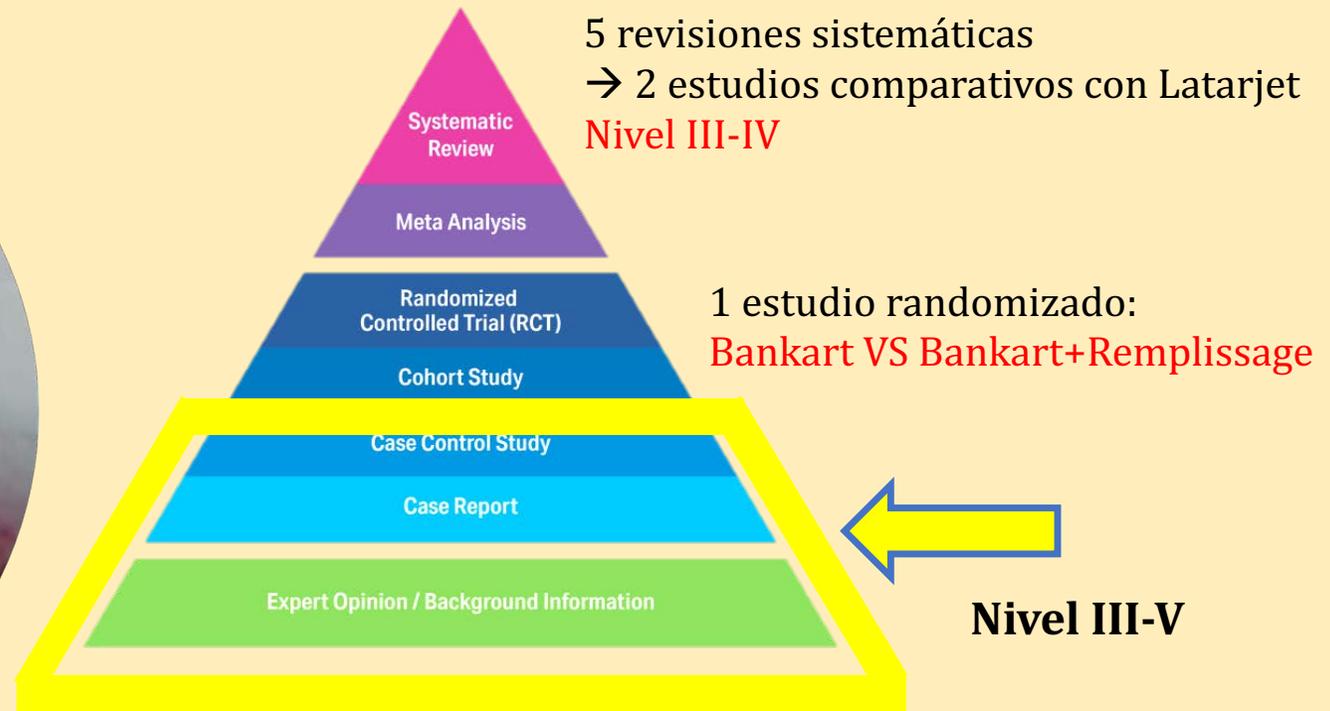
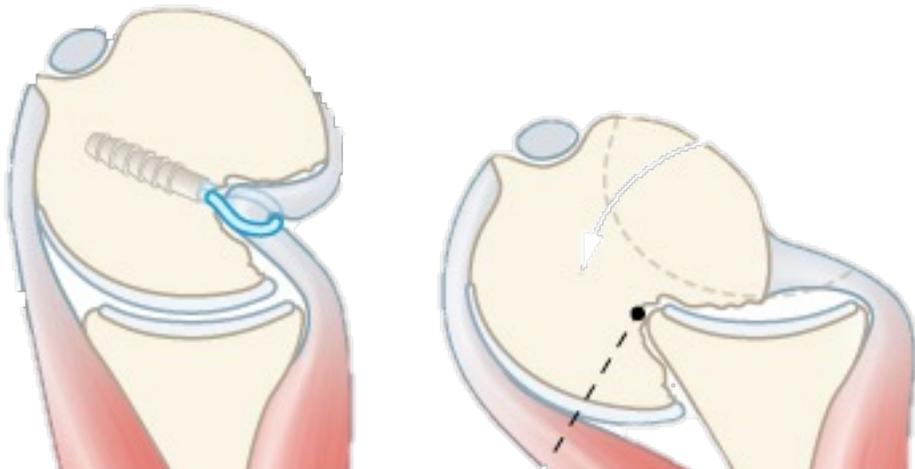


Wolf RP et al,  
Arthroscopy  
2008

# Remplissage



Capsulo-mio-tenodesis



Técnica “nueva”

■ **Seguimiento a corto plazo**

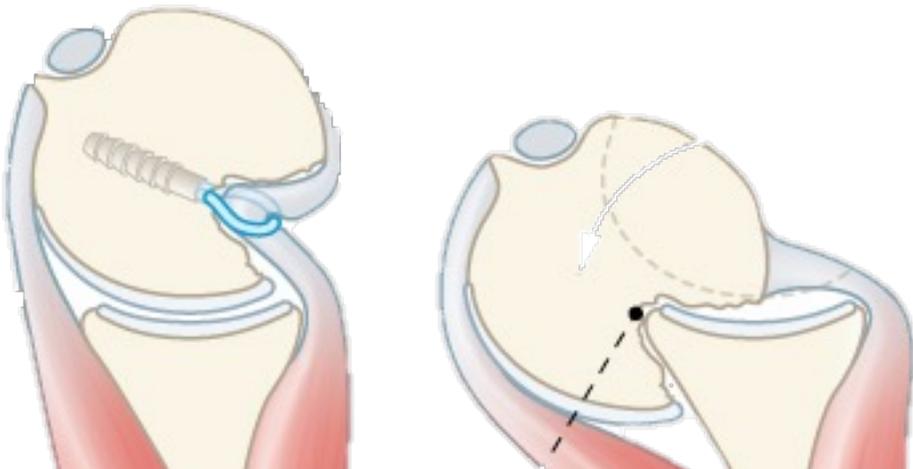
Recidiva ocurre a largo plazo  
Bottani CR et al, Am J Sports Med 2021

Wolf RP et al,  
Arthroscopy  
2008



# Remplissage

Capsulo-mio-tenodesis



5 revisiones sistemáticas  
→ 2 estudios comparativos con Latarjet  
**Nivel III-IV**

1 estudio randomizado:  
**Bankart VS Bankart+Remplissage**

**Nivel III-V**

Técnica “nueva”  
■ **Seguimiento a corto plazo**  
Recidiva ocurre a largo plazo  
Bottani CR et al, Am J Sports Med 2021

**#3** Evidencia para recomendar Remplissage frente a Latarjet: **LIMITADA**

Latarjet M, Lyon Chir 1954

Latarjet

El Latarjet es más predecible

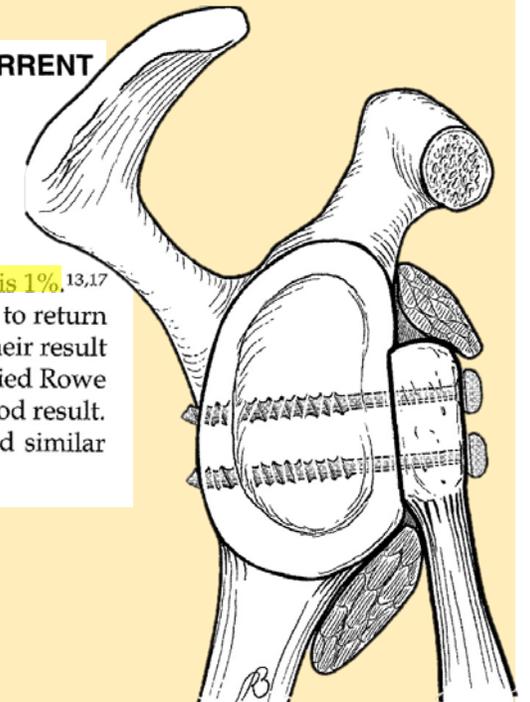
- Técnica consolidada
- Estudios seguimiento a largo plazo
  - >10 a Allain J et al, JBJS 1998
  - Hovelius L et al, JSES 2012
  - Hurley E et al, JSES 2018
  - ...

**THE LATARJET PROCEDURE FOR RECURRENT ANTERIOR SHOULDER INSTABILITY: RATIONALE AND TECHNIQUE**

T. BRADLEY EDWARDS, MD, and GILLES WALCH, MD

**RESULTS**

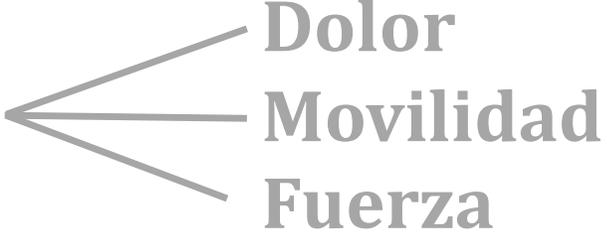
In more 1,000 cases, our recurrent instability rate is 1%.<sup>13,17</sup> Additionally, 83% of our patients have been able to return to sports at their preinjury level, and 98% rated their result as excellent or good. Objectively, using the modified Rowe score, 76% of patients achieved an excellent or good result. In their report of 58 shoulders, Allain et al found similar results with the Latarjet procedure.<sup>1</sup>



- N muy grandes

# ¿Por qué tratar la lesión de Hill-Sachs off-track con Latarjet?

**1** Recidiva

**2** Resultado funcional 

- Dolor
- Movilidad
- Fuerza

**3** Riesgo de otras complicaciones

# Recidiva

## Seguimiento a largo plazo



## Remplissage

Bastard C et al, Arthroscopy 2019

### Impact of Remplissage on Global Shoulder Outcome: A Long-Term Comparative Study

Claire Bastard, M.D., Olivier Herisson, M.D., Julien Gaillard, M.D., and  
Geoffroy Nourissat, M.D., Ph.D.

- **11 y** seguimiento ( 10-12,5)
- **Recidiva 0%**
- Comparativo con Bankart
- Media ISIS: 1,8

Martinez Catalán M et al, EJST 2022

### Long-term outcomes of arthroscopic Bankart repair and Hill-Sachs remplissage for bipolar bone defects

Natalia Martinez-Catalan <sup>1 2</sup>, Efi Kazum <sup>3</sup>, Frantzeska Zampeli <sup>4</sup>, Marco Cartaya <sup>5</sup>,  
Alexandre Cerlier <sup>6</sup>, Philippe Valenti <sup>7</sup>

- **7.3 y** seguimiento ( 4-11)
- **Recidiva 9,3%**
- <20% defecto óseo, ISIS: 3,6
- Sólo 9% pacientes offtrack
- **Off-track se asocia a un mayor riesgo de recidiva**

## Pacientes ISIS <4

**El remplissage da buenos resultados en cuanto a recidiva en pacientes de bajo riesgo.**

# Recidiva OFF-TRACK



Remplissage

¿Qué ocurre en los pacientes de más riesgo?

# Recidiva OFF-TRACK

¿Qué ocurre en los pacientes de más riesgo?



**Remplissage**

**REVISIONES  
SISTEMÁTICAS,  
METANÁLISIS**

# Recidiva OFF-TRACK

## ¿Qué ocurre en los pacientes de más riesgo?



# Remplissage

## REVISIONES SISTEMÁTICAS, METANÁLISIS

Gouveia K et al, Arthroscopy 2021

Arthroscopic Bankart Repair With Remplissage in Comparison to Bone Block Augmentation for Anterior Shoulder Instability With Bipolar Bone Loss: A Systematic Review

Kyle Gouveia, B.Sc., Syed Kumail Abidi, B.Sc., Saif Shamshoon, M.D., Chetan Gohal, M.D., Kim Madden, Ph.D., Ryan M. Degen, M.D., M.Sc., F.R.C.S.C., Timothy Leroux, M.D., M.Ed., F.R.C.S.C., Bashar Alolabi, M.D., M.Sc., F.R.C.S.C., and Moin Khan, M.D., M.Sc., F.R.C.S.C.

- 145 estudios (71,7% nivel 4)
- Seguimiento a corto plazo
- 0-25% pérdida ósea glenoidea
- **No especifica presencia o grado lesión Hill Sachs**

Hurley ET et al, JSES 2020

Remplissage for anterior shoulder instability with Hill-Sachs lesions: a systematic review and meta-analysis

Eoghan T. Hurley, MB, BCh, MCh<sup>a,b,\*</sup>, James P. Toale, MB, BCh<sup>a,b</sup>, Martin S. Davey, MB, BCh, MCh<sup>a,b</sup>, Christopher A. Colasanti, MD<sup>c</sup>, Leo Pauzenberger, MD<sup>a</sup>, Eric J. Strauss, MD<sup>c</sup>, Hannan Mullett, MCh, FRCSI (Tr & Orth)<sup>a</sup>

- 12 estudios (nivel 3)
- **Incluye cualquier Hill Sachs**

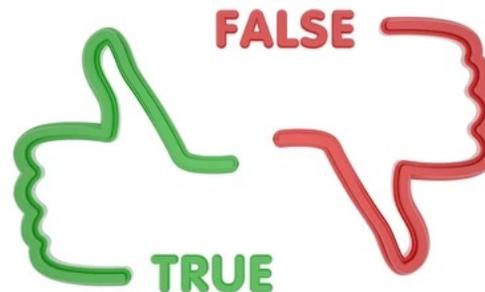
Haroun HK et al, JSES 2020

Arthroscopic Bankart repair with remplissage versus Latarjet procedure for management of engaging Hill-Sachs lesions with subcritical glenoid bone loss in traumatic anterior shoulder instability: a systematic review and meta-analysis

Haitham K. Haroun, MD\*, Mohamed H. Sobhy, MD, Amr A. Abdelrahman, MD

- 4 estudios (nivel 2 y 3)
- **Dudosa definición de “engaging” Hill-Sachs**
- Medición en %, intraoperatoria...

*Igual de efectivo que Latarjet*



# Recidiva



Remplissage

*What is an engaging Hill Sachs?*

OFF-TRACK  $\neq$  ENGAGING

- Hill Sachs = enganante por definición
- Enganche reproducible intraoperatorio
- Off-track: Se debe medir de forma preoperatoria mediante imagen

# Recidiva OFF-TRACK



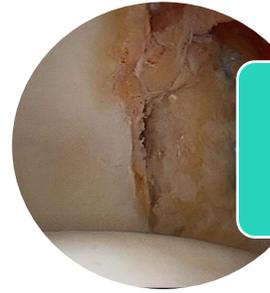
**Remplissage**

**¿Qué ocurre en los pacientes de más riesgo?**

**#4**

**No existen datos fiables de recurrencia a largo plazo tras Remplissage en pacientes off-track**

# Recidiva



# Latarjet

#5

**Latarjet:  
EFECTIVO  
+ ESTABILIZACIÓN  
+ EVITAR  
RECIDIVA**

**The effect of capsular repair, bone block healing, and position on the results of the Bristow-Latarjet procedure (study III): long-term follow-up in 319 shoulders**  
Lennart Hovelius, MD, PhD<sup>a,b,\*</sup>, Björn Sandström, MD<sup>b</sup>, Anders Olofsson, MD<sup>b</sup>, Olle Svensson, MD, PhD<sup>a</sup>, Hans Rahme, MD, PhD<sup>c</sup>  
<sup>a</sup>Division of Surgery and Perioperative Science, Department of Orthopedics, Umeå University, Umeå, Sweden  
<sup>b</sup>Department of Orthopedics, Gävle Hospital, Gävle, Sweden  
<sup>c</sup>Department of Orthopedics, Elisabeth Hospital, Uppsala, Sweden

Hovelius L et al, JSES 2012  
15 años seguimiento  
5% recurrencia, 1% re-intervención

REVIEW ARTICLE  
**Long-term outcomes of the Latarjet procedure for anterior shoulder instability: a systematic review of studies at 10-year follow-up**  
Eoghan T. Hurley, MB, BCh<sup>a,b,\*</sup>, M. Shazil Jamal, MB, BCh<sup>a,b</sup>, Zakariya S. Ali<sup>a,b</sup>, Connor Montgomery, MB, BCh, MSc<sup>a</sup>, Leo Pauzenberger, MD<sup>a</sup>, Hannan Mullett, MCh, FRCSI (Tr, Orth)<sup>a</sup>

Hurley et al, JSES 2018  
15 años seguimiento, N= 845  
8,5% recurrencia, 3,7% re-intervención

**Repair Versus Latarjet Procedure for Recurrent Anterior Shoulder Instability**  
**A Systematic Review and Meta-analysis of 3275 Shoulders**  
Mohamed A. Imam,<sup>\*†</sup> MD, MSc(Hons), PhD, Mohamed S.A. Shehata,<sup>‡</sup> MD, Alexander Martin,<sup>§||</sup> BMedSci(Hons), BMBS (Hons), MRCS, Hamdy Attia,<sup>¶</sup> MD, Muhammad Sinokrot,<sup>‡</sup> MD, Eshak I. Bahbah,<sup>‡</sup> MD, Stephen Gwilym,<sup>§</sup> MBBS, BSc, PhD, FRCS, Joshua Jacob,<sup>\*</sup> MBBS, D.Orth, MSc, FRCS, A. Ali Narvani,<sup>\*</sup> BSc, MBBS(Hons), MSc, FRCS, FSEM, and Dominik C. Meyer,<sup>\*\*</sup> MD  
Investigation performed at Rowley Bristow Orthopaedic Center, Ashford and St Peter's University Hospitals, Chertsey, UK

Imam MA et al, JSES 2020  
Revisión sistemática.  
Comparativo Latarjet VS Bankart  
N= 3275

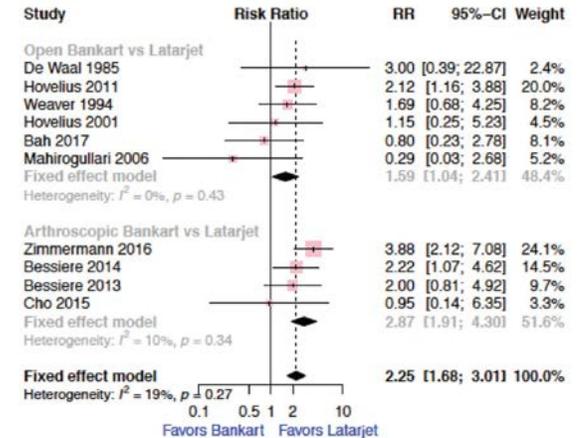


Figure 2. Forest plot for recurrence. MD, mean difference; NA, not applicable.

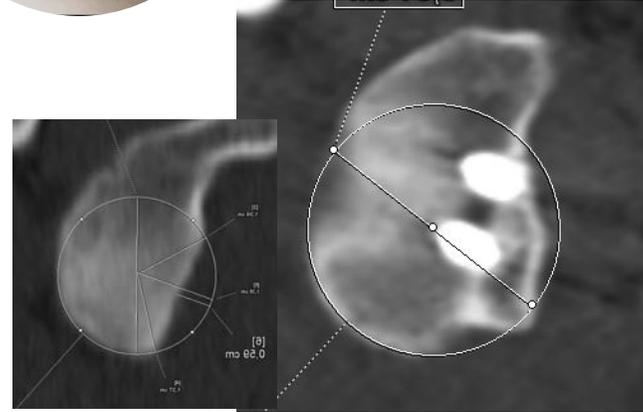
# Recidiva

■ **RESTAURACIÓN  
GLENOID TRACK**

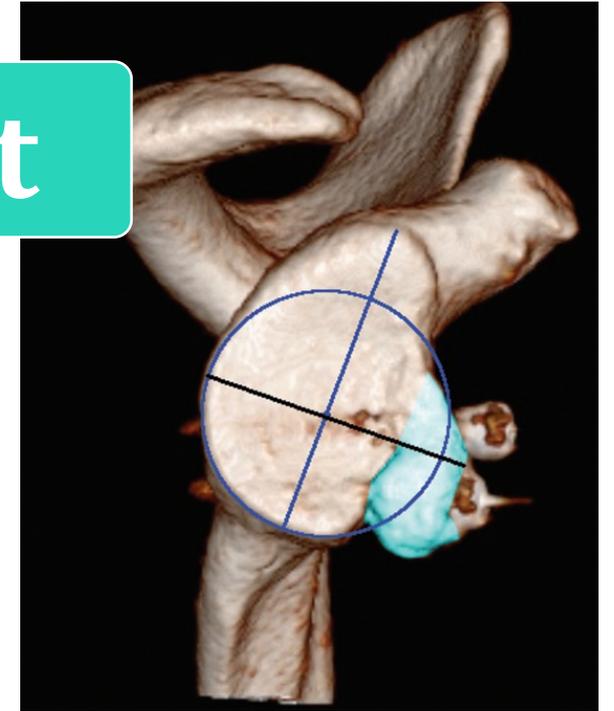
■ **“SLING EFFECT”**  
Yamamoto N et al, JBJS 2013



## Latarjet



Calvo et al, AJSM 2021



Plath JE et al, AJSM 2017



### The Stabilizing Mechanism of the Latarjet Procedure

A Cadaveric Study

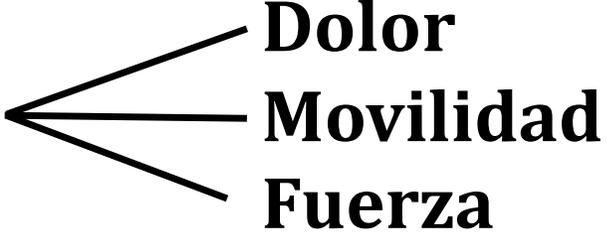
Nobuyuki Yamamoto, MD, PhD, Takayuki Muraki, PhD, Kai-Nan An, PhD, John W. Sperling, MD, Robert H. Cofield, MD, Eiji Itoi, MD, PhD, Gilles Walch, MD, and Scott P. Steinmann, MD

*Investigation performed at the Mayo Clinic, Rochester, Minnesota*

**Conclusions:** The main stabilizing mechanism of the Latarjet procedure was the sling effect at both the end-range and the mid-range arm positions.

# ¿Por qué tratar la lesión de Hill-Sachs off-track con Latarjet?

1 Recidiva

2 **Resultado funcional** 

- Dolor
- Movilidad
- Fuerza

3 Riesgo de otras complicaciones

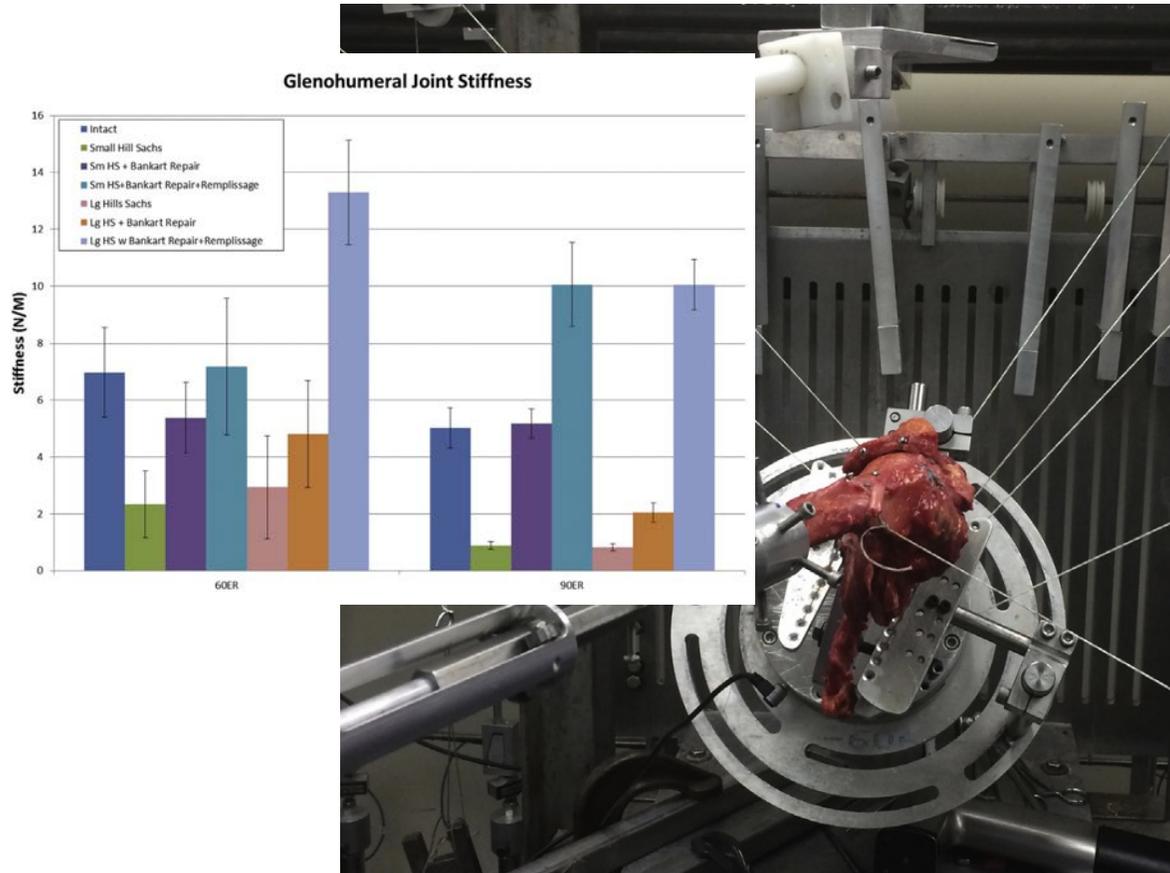
# Dolor y movilidad



Remplissage

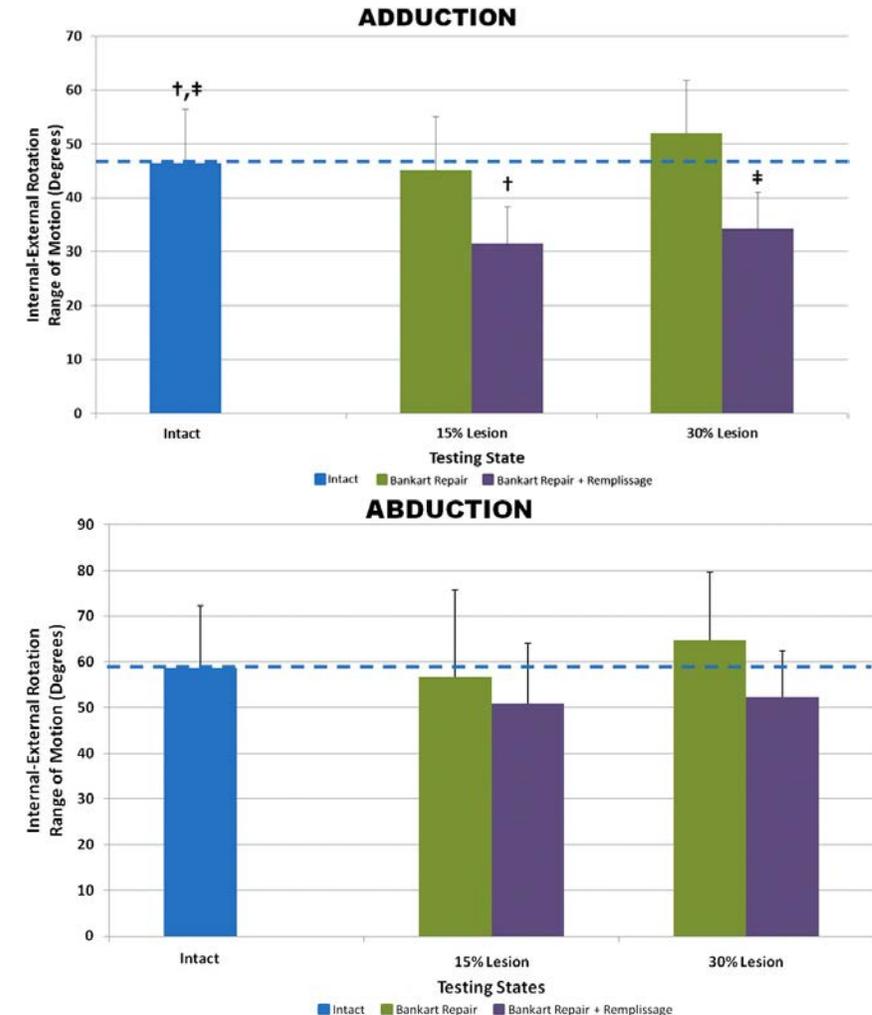
Estudios biomecánicos

Hartzler RU et al, Arthroscopy 2016



vs 7.0 N/m,  $P > .99$ ). **Conclusions:** The patterns of engagement of Hill-Sachs lesions with a 15% glenoid defect in this model give support to the glenoid track concept. BR plus remplissage resulted in supraphysiological shoulder stiffness but was necessary to prevent engagement of off-track bipolar bone lesions. **Clinical Relevance:** This biomechanical study provides evidence to aid in surgical decision making by examining the effects of bipolar bone loss and soft-tissue reconstruction on shoulder stability.

Elkinson I et al, JBJS 2012



# Dolor y movilidad

## Estudios clínicos comparativos Remplissage VS Latarjet

Yang J et al, AJSM 2018

### Remplissage Versus Modified Latarjet for Off-Track Hill-Sachs Lesions With Subcritical Glenoid Bone Loss

Justin Shu Yang,<sup>\*†</sup> MD, Nima Mehran,<sup>†</sup> MD, Augustus D. Mazzocca,<sup>†</sup> MD, Michael L. Pearl,<sup>†</sup> MD, Vincent W. Chen,<sup>†</sup> MD, and Robert A. Arciero,<sup>†</sup> MD  
Study performed at Kaiser Permanente Los Angeles Medical Center, Los Angeles, California, USA

TABLE 2  
Subjective and Objective Outcomes<sup>a</sup>

	Overall (N = 189)	Group A: Remplissage (n = 98)	Group B: Latarjet (n = 91)	P Value <sup>b</sup>
WOSI	382 ± 330	411 ± 258	352 ± 286	.164
SANE	86.8 ± 14.5	88.1 ± 13.9	85.3 ± 9.6	.111
VAS pain	1.89 ± 2.01	2.2 ± 2.4	1.55 ± 1.88	.041
Range of motion, deg				
External rotation at the side	48.2 ± 17.8	50.1 ± 15.6	46.1 ± 19.9	.242
External rotation in abduction	64.4 ± 27	68.2 ± 23.5	60.3 ± 13.8	.147
Internal rotation in abduction	46.8 ± 23.8	40.9 ± 28.6	53.2 ± 22	.006
Forward flexion	164 ± 11.3	166 ± 28.9	161 ± 15.7	.172

- **Remplissage:**
- Pérdida de rotación interna y dolor residual
- **Mayor índice de cirugía de revisión para descompresión subacromial**

#6

**Remplissage: mayor riesgo:  
+ PÉRDIDA DE MOVILIDAD  
+ DOLOR RESIDUAL**

Bah A et al, OTSR 2017

### Chronic anterior shoulder instability with significant Hill-Sachs lesion: Arthroscopic bankart with remplissage versus open latarjet procedure

A. Bah<sup>a,\*</sup>, G.M. Lateur<sup>b</sup>, B.T. Kouevidjin<sup>a</sup>, J. Bassinga<sup>c</sup>, M. Issa<sup>a</sup>, A. Jaafar<sup>c</sup>, E. Beaudouin<sup>a</sup>

<sup>a</sup> Secrétariat d'orthopédie, centre hospitalier métropole Savoie-de-Chambéry, 7, square Massalez, 73000 Chambéry, France

<sup>b</sup> Sports orthopaedic surgery and traumatology, Grenoble university hospital, hôpital Sud, Grenoble, France

<sup>c</sup> Orthopaedic and trauma surgery I, Mohammed V de Rabat military training hospital, avenue des Forces-Armées-Royales, Hay Riad, 10100 Rabat, Morocco

**Patients and methods:** An observational non-randomised retrospective cohort study was conducted at two surgical centres in patients treated for chronic anterior shoulder instability with a significant Hill-Sachs defect between January 2009 and July 2014. The study compared 43 patients managed by arthroscopic Bankart repair and remplissage and 43 patients managed with open Latarjet. The two groups were matched on age at surgery and on follow-up duration. All patients were evaluated by independent observers based on a questionnaire including recurrences, range of motion, and functional outcomes (Shoulder Subjective Value [SSV], Walch-Duplay score, and Rowe score).

**Results:** Mean follow-up was 47.3 months (range, 24-67 months). The recurrence rate at last follow-up was not significantly different between the two groups (9.3% versus 11.2%;  $P=0.67$ ). The Bankart group had significantly greater loss of external rotation and a significantly higher proportion of patients with residual pain (21% versus 9%,  $P=0.023$ ). The SSV, Walch-Duplay score, and Rowe score values were similar between groups.

- **Remplissage:**
- **Pérdida de rotación externa**
- **Dolor residual en 21 % pacientes (VS 9% en Latarjet)**

# Return to sports

Garcia GH et al. AJSM 2016

## Outcomes of the Remplissage Procedure and Its Effects on Return to Sports

### Average 5-Year Follow-up

Grant H. Garcia,<sup>\*†</sup> MD, Hao-Hua Wu,<sup>†</sup> BA, Joseph N. Liu,<sup>†</sup> MD,  
G. Russell Huffman,<sup>§</sup> MD, MPH, and John D. Kelly IV,<sup>§</sup> MD

*Investigation performed at the University of Pennsylvania, Philadelphia, Pennsylvania, USA*

- **95.5% return to sport**
- Pérdida rotación externa
- **65% problemas lanzamiento**



Remplissage

#7

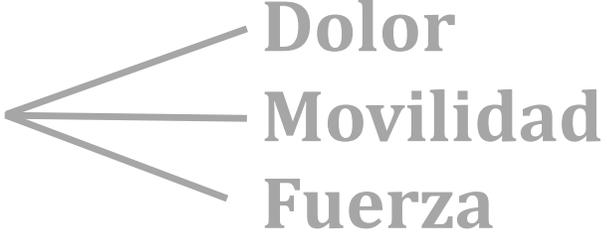
## Remplissage: limitación DEPORTES DE LANZAMIENTO

- Pérdida movilidad
- Modificación brazo palanca I.E.



# ¿Por qué tratar la lesión de Hill-Sachs off-track con Latarjet?

1 Recidiva

2 Resultado funcional 

- Dolor
- Movilidad
- Fuerza

3 **Riesgo de otras complicaciones**

# Complicaciones



## Latarjet

*“El Latarjet tiene mayor frecuencia de complicaciones que la cirugía de partes blandas”*

Shah AA et al. JBJS 2012

### Short-Term Complications of the Latarjet Procedure

Anup A. Shah, MD, R. Bryan Butler, MD, James Romanowski, MD, Danny Goel, MD,  
Dimitrios Karadagli, FRCS, and Jon J.P. Warner, MD

*Investigation performed at Massachusetts General Hospital/Harvard Medical School, Boston, Massachusetts*

**25%**

**N=48**

3 grupos:

- Recidiva: 8%
- Infección: 6%
- Neurológicas: 10%

# Complicaciones



## Latarjet

*“El Latarjet tiene mayor frecuencia de complicaciones que la cirugía de partes blandas”*

Hurley E et al, JSES 2021

### Short-term complications of the Latarjet procedure: a systematic review



Eoghan T. Hurley, MB, BCh, MCh<sup>\*1</sup>, Luke B. Schwartz, BS<sup>1</sup>, Edward S. Mojica, BS, Kirk A. Campbell, MD, Bogdan A. Matache, MD, Robert J. Meislin, MD, Laith Jazrawi, MD

NYU Langone Health, Division of Sports Medicine, Department of Orthopaedic Surgery, New York, NY, USA

# 6-7%

N=7175

+ frec: Graft related

**Results:** Overall, 89 studies (Level of Evidence [LOE] I: 2, LOE II: 2, LOE III: 24, LOE IV: 61) met inclusion criteria, with 7175 shoulders. Following the open Latarjet procedure, the overall complication rate was 6.1%, with a 1.9% occurrence of graft-related complications, 1.1% hardware, 1.1% wound, 0.9% nerve, and 1.1% other complications. Following the arthroscopic Latarjet procedure, the overall complication rate was 6.8%, with a 2.2% occurrence of graft-related complications, 1.9% hardware, 0.5% wound, 0.7% nerve, and 0.5% other complications. Complications were reported in 7 studies comparing 379 patients treated with the open Latarjet and 531 treated with the arthroscopic Latarjet, with no statistically significant difference between the two ( $P = .81$ ).

**Conclusion:** Our study established that the overall complication rate following the Latarjet procedure was 6%-7%, with the most common complication being graft-related. Furthermore, based on the current evidence, there is no significant difference in the complication rate between the open and arthroscopic Latarjet procedures.

# Complicaciones

## Latarjet

Hurley E et al, JSES 2021

### Short-term complications of the Latarjet procedure: a systematic review

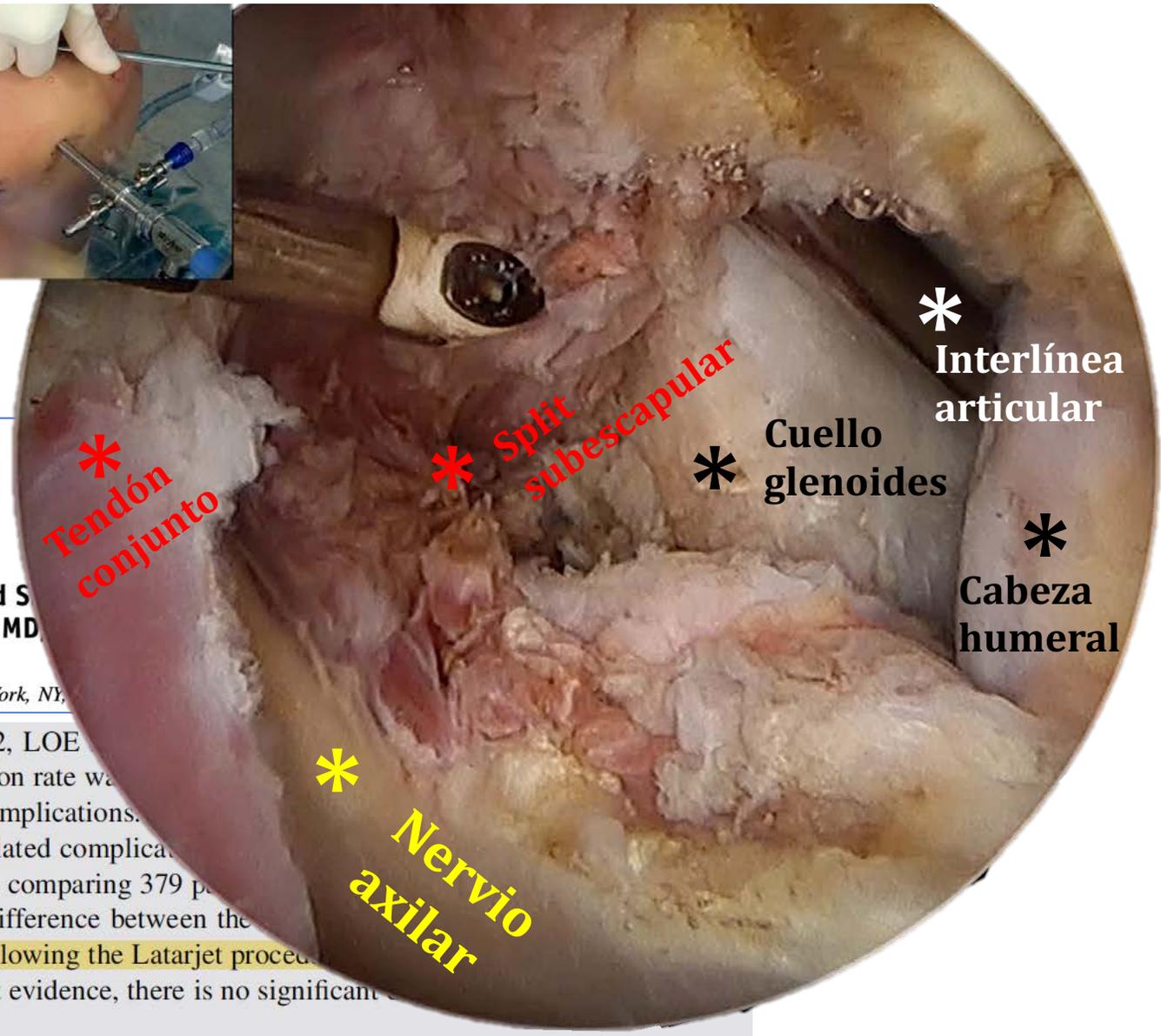
Eoghan T. Hurley, MB, BCh, MCh<sup>\*1</sup>, Luke B. Schwartz, BS<sup>1</sup>, Edward S. Kirk A. Campbell, MD, Bogdan A. Matache, MD, Robert J. Meislin, MD, Laith Jazrawi, MD

NYU Langone Health, Division of Sports Medicine, Department of Orthopaedic Surgery, New York, NY

**Results:** Overall, 89 studies (Level of Evidence [LOE] I: 2, LOE II: 2, LOE III: 3) were included. The overall complication rate was 6.8%, with 1.1% hardware, 1.1% wound, 0.9% nerve, and 1.7% other complications.

and 0.5% other complications. Complications were reported in 7 studies comparing 379 patients treated with the arthroscopic Latarjet, with no statistically significant difference between the

**Conclusion:** Our study established that the overall complication rate following the Latarjet procedure is low, with the most common complication being graft-related. Furthermore, based on the current evidence, there is no significant difference in the overall complication rate between the open and arthroscopic Latarjet procedures.



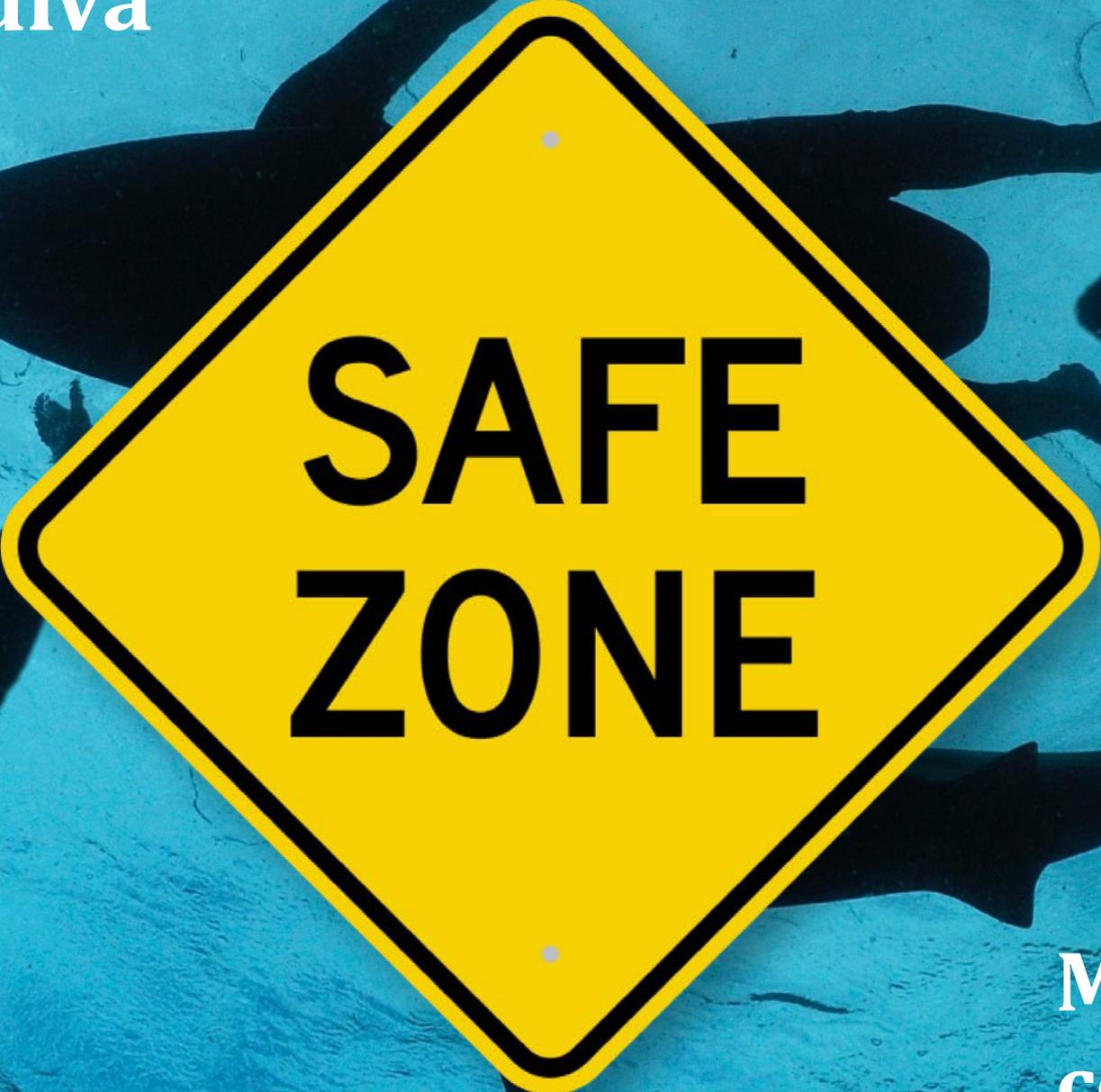


**ARTROPATÍA**

**RECIDIVA**

**RE-INTERVENCIONES**

**Evitar recidiva**



**SAFE  
ZONE**

**ARTROPATÍA**

**RE-INTERVENCIONES**

**Minimizar otras  
complicaciones**

Evitar recidiva

#8

**Latarjet:**

- **Mayor índice de otras complicaciones**
- **Mayor seguridad para estabilizar el hombro**

**SAFE  
ZONE**

**ARTROPATÍA**

# No esperar al fracaso de la cirugía de partes blandas

Van Iersel TP et al, JSES 2022

Review > J Shoulder Elbow Surg. 2022 Apr 14;S1058-2746(22)00352-4.

doi: 10.1016/j.jse.2022.02.044. Online ahead of print.

## **Bony Reconstruction after Failed Labral Repair is Associated with Higher Recurrence Rates Compared to Primary Bony Reconstruction: a Systematic Review and Meta-analysis of 1319 Shoulders in Studies with a Minimum of 2-Year Follow-up**

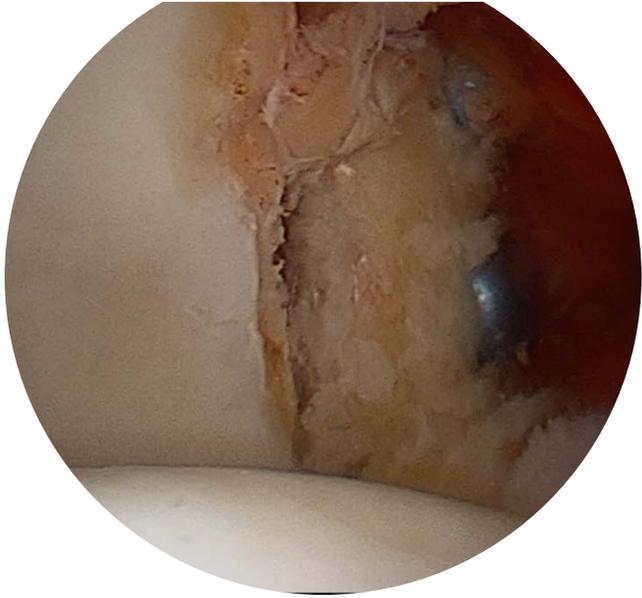
Theodore P van Iersel <sup>1</sup>, Sanne H van Spanning <sup>2</sup>, Lukas P E Verweij <sup>3</sup>, Simone Priester-Vink <sup>4</sup>,  
Derek F P van Deurzen <sup>5</sup>, Michel P J van den Bekerom <sup>6</sup>

Affiliations + expand

PMID: 35430365 DOI: 10.1016/j.jse.2022.02.044

Latarjet de rescate  
empeora resultados

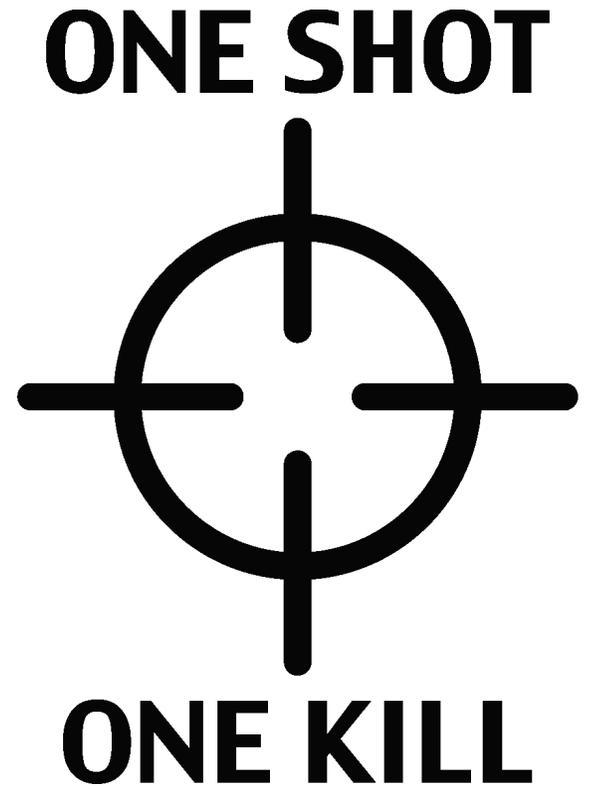
Latarjet



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# Conclusiones

# To take home 

**En pacientes con lesión de Hill Sachs off-track:**

# Conclusiones

# To take home 

## En pacientes con lesión de Hill Sachs off-track:

**Valoración conjunta: PÉRDIDA ÓSEA BIPOLAR+ FACTORES RIESGO específicos paciente**

**EVIDENCIA LIMITADA para recomendar Remplissage frente a Latarjet  
No datos fiables de recidiva a largo plazo**

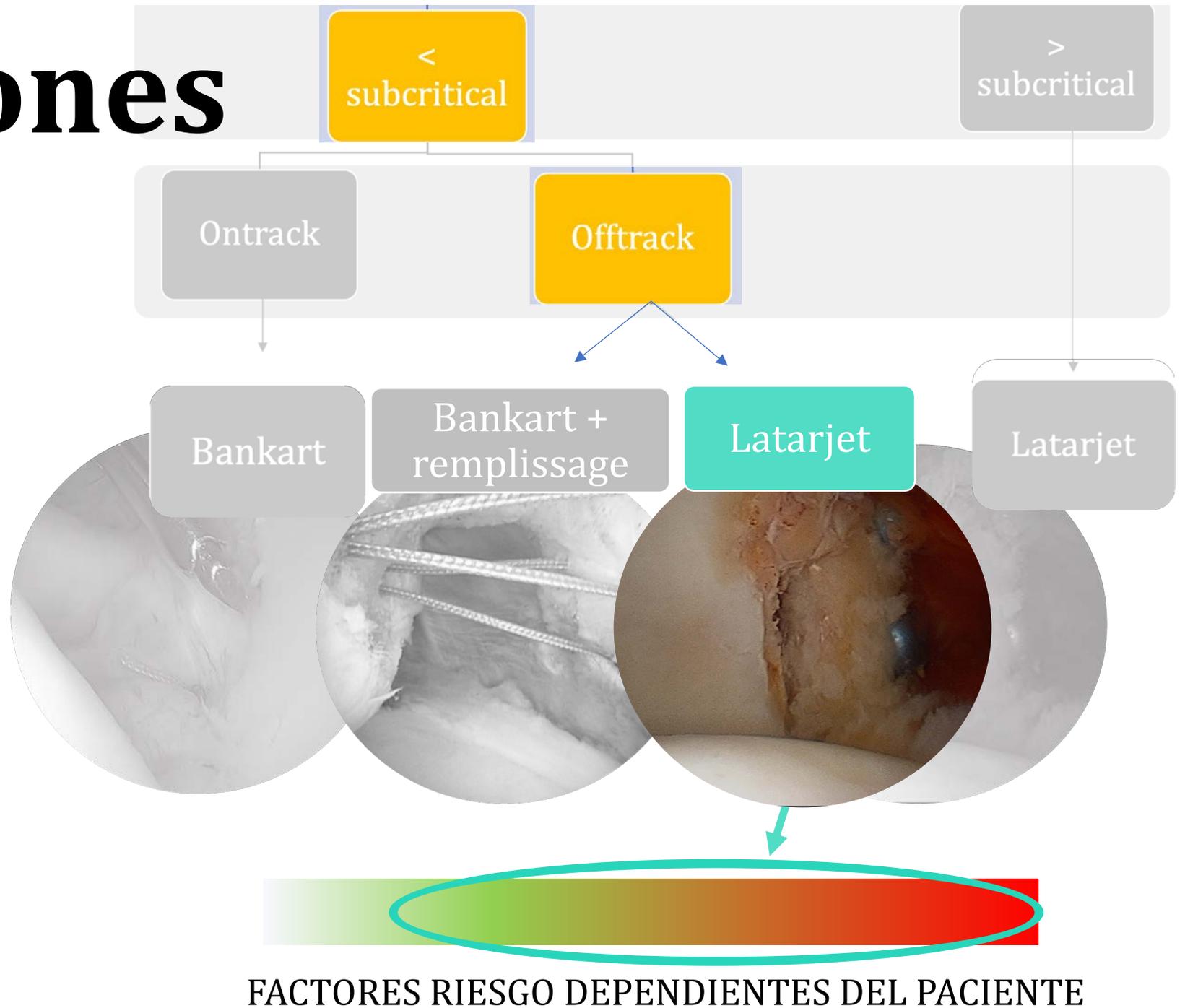
**REPLISSAGE: PÉRDIDA DE MOVILIDAD, DOLOR RESIDUAL POSTEROLATERAL**

**LATARJET: técnica más predecible: ESTABILIZACIÓN + EVITAR RECIDIVA**

**Sólo es cierto que el Latarjet tiene más complicaciones que la cirugía de partes blandas si no se cuenta la recidiva como complicación.**

# Conclusiones

Hay que tratar la lesión de Hill-Sachs off-track con Latarjet

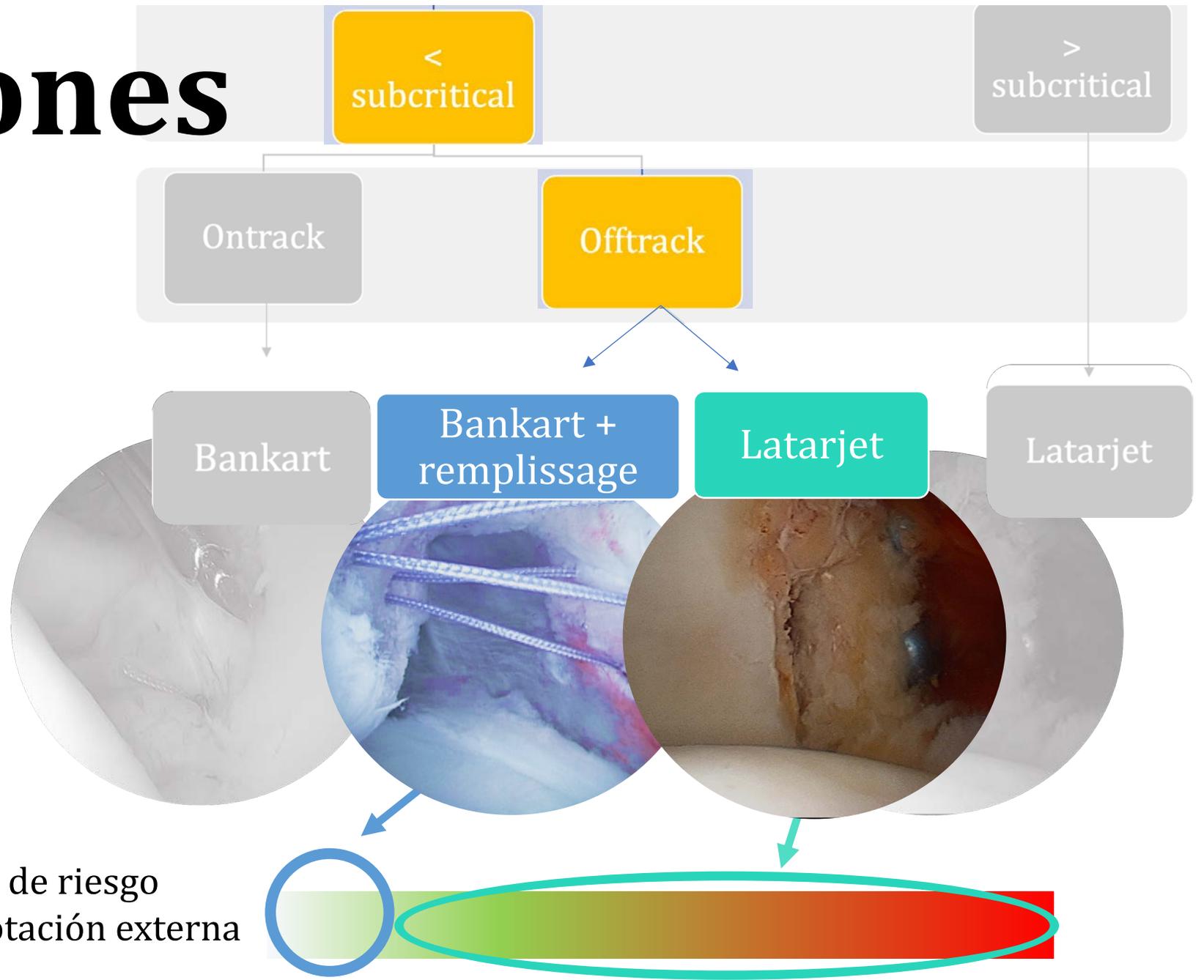


# Conclusiones

Hay que tratar la lesión de Hill-Sachs off-track con Latarjet

#excepción

- Pacientes sin factores de riesgo
- Aceptar pérdida de rotación externa



FACTORES RIESGO DEPENDIENTES DEL PACIENTE

# THANK YOU!



[juanaguilar.cot@gmail.com](mailto:juanaguilar.cot@gmail.com)



[orcid.org/0000-0002-3253-8847](https://orcid.org/0000-0002-3253-8847)



[JuanAguilar\\_COT](https://twitter.com/JuanAguilar_COT)



[@juanaguilar\\_\\_](https://www.instagram.com/juanaguilar__)

