

# DIU d'Arthroscopie session Epaule

13 mars 2020

PARIS

Score ISIS Intérêt et limites

Dr Quentin Baumann

## The instability severity index score

A SIMPLE PRE-OPERATIVE SCORE TO SELECT PATIENTS FOR ARTHROSCOPIC OR OPEN SHOULDER STABILISATION

F. Balg,  
P. Boileau

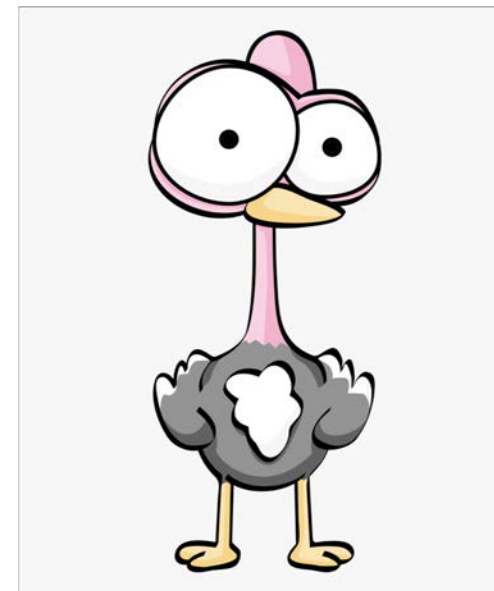
From University of  
Nice-Sophia  
Antipolis, Nice,  
France

There is no simple method available to identify patients who will develop recurrent instability after an arthroscopic Bankart procedure and who would be better served by an open operation.

We carried out a prospective case-control study of 131 consecutive unselected patients with recurrent anterior shoulder instability who underwent this procedure using suture anchors. At follow-up after a mean of 31.2 months (24 to 52) 19 (14.5%) had recurrent instability. The following risk factors were identified: patient age under 20 years at the time of surgery; involvement in competitive or contact sports or those involving forced overhead activity; shoulder hyperlaxity; a Hill-Sachs lesion present on an anteroposterior radiograph of the shoulder in external rotation and/or loss of the sclerotic inferior glenoid contour.

These factors were integrated in a 10-point pre-operative instability severity index score and tested retrospectively on the same population. Patients with a score over 6 points had an unacceptable recurrence risk of 70% ( $p < 0.001$ ). On this basis we believe that an arthroscopic Bankart repair is contraindicated in these patients, to whom we now suggest a Bristow-Latarjet procedure instead.

# Naissance du score ISIS



<b>Prospective Studies</b>	<b>n</b>	<b>min FU</b>	<b>recurrence</b>
Calvo et al (2003)	61	> 2y	18%
Boileau et al (2006)	91	> 2y	15.3%
Porcellini et al (2009)	385	> 2y	8.1%
Voos et al (2010)	83	> 2y	18%
Boileau (2012)	51	5 y	24%



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# Naissance du score ISIS

Etude clinique rétrospective  
2007

131 patients opérés d'un @Bankart  
19 récurrences  
recul moyen 31 mois (24 – 52)

Objectif : Identifier les **facteurs de risque de récurrence** clinique et radiologique détectable lors de la visite préopératoire pour créer un score de sévérité



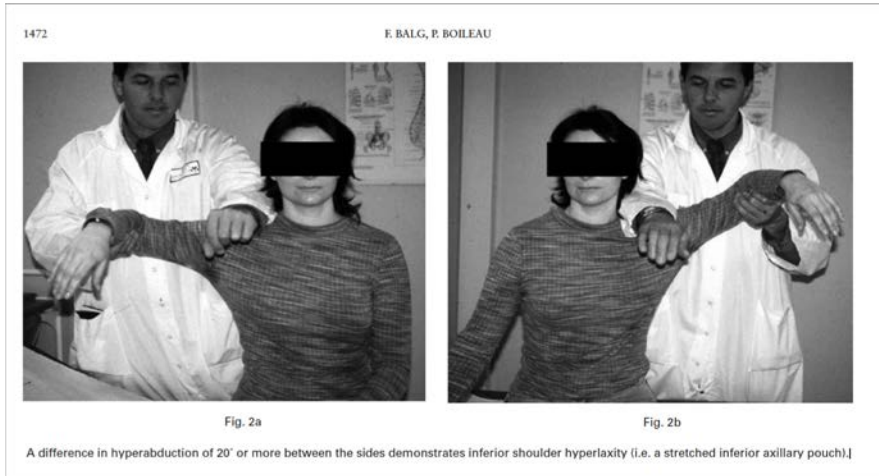
THE INSTABILITY SEVERITY INDEX SCORE

Table III. Recurrence factor analysis

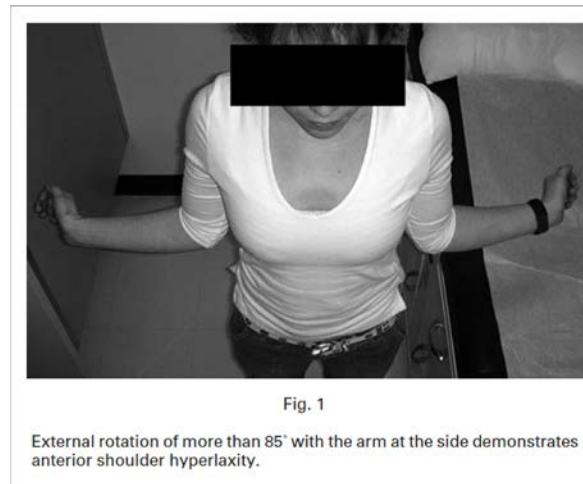
Risk factors	No recurrence (%)	Recurrence (%)	p-value*				
				Shoulder hyperlaxity			
				No	39 (95.1)	2 (4.9)	0.036
				Yes (anterior or inferior)	73 (81.1)	17 (18.9)	
Gender				Hill-Sachs on AP† radiograph			
Male	86 (83.5)	17 (16.5)	0.363	No	20 (95.2)	1 (4.8)	0.195
Female	26 (92.9)	2 (7.1)		Internal or neutral rotation	70 (89.8)	8 (10.2)	
Dominance				External rotation	22 (68.8)	10 (31.3)	0.002
Dominant	67 (81.7)	15 (18.3)	0.131	Glenoid lesion on AP radiograph			
Non-dominant	45 (91.8)	4 (8.2)		No	77 (89.5)	9 (10.5)	
Mean age (range) (yrs)	28.2 (15 to 62) (10.2)	22.2 (14 to 37) (5.7)	0.014	Loss of contour	12 (63.2)	7 (36.8)	0.011
≤ 20	24 (68.6)	11 (31.4)	0.001	Avulsion fracture	23 (88.5)	3 (11.5)	
> 20	88 (91.7)	8 (8.3)		Glenoid lesion on AP radiograph			
Type of instability				No or avulsion-fracture	100 (89.3)	12 (10.7)	0.003
Dislocation	30 (88.2)	4 (11.8)		Loss of contour	12 (63.2)	7 (36.8)	
Subluxation	40 (83.3)	8 (16.7)	0.823	Number of anchors (intra-operative)			
Both	42 (85.7)	7 (14.3)		Fewer than four	11 (61.1)	7 (38.9)	0.002
Mean number of episodes (range)				Four or more	101 (89.4)	12 (10.6)	
Total	18.7 (1 to 51)	12.9 (1 to 200)	0.423	Anterior translation (intra-operative)			
Dislocation	2.8 (0. to 12)	1.5 (0 to 40)	0.287	No dislocation	86 (87.8)	12 (12.2)	0.206
Subluxation	15.8 (0 to 50)	11.5 (0 to 200)	0.542	Dislocation	26 (78.8)	7 (21.2)	
Traumatic first event				Detrisac (intra-operative)			
Yes	92 (83.6)	18 (16.4)	0.307	Type 1	8 (88.9)	1 (11.1)	
No	20 (95.2)	1 (4.8)		Type 2	58 (85.3)	10 (14.7)	0.956
Bilateral instability				Type 3	37 (84.1)	7 (15.9)	
Unilateral	93 (84.5)	17 (15.5)	0.737	Type 4	9 (90.0)	1 (10.0)	
Bilateral	19 (90.5)	2 (9.5)		Post-operative degree of sports practised			
Type of sports (pre-op)				Competitive	5 (50.0)	5 (50.0)	0.013
Contact or forced overhead	66 (82.5)	14 (17.5)	0.310	Recreation or none	40 (85.1)	7 (14.9)	
Other	46 (90.2)	5 (9.8)		Post-operative type of sports practised			
Degree of sport practised (pre-op)				Contact or forced-overhead	18 (66.7)	9 (33.3)	0.072
Competitive	22 (73.3)	8 (26.7)	0.031	Other	26 (86.7)	4 (13.3)	
Recreation or none	90 (89.1)	11 (10.9)					

\* Pearson's chi-squared or Fisher's exact tests for categorical values, and independent Student's t-test for means  
 † AP, anteroposterior

# Comment définit-on un hyperlaxité ?



Différence d'abduction  $>20^\circ$



RE  $> 85^\circ$

**Table IV.** Instability severity index scores based on a pre-operative questionnaire, clinical examination and radiographs

Prognostic factors	Points
Age at surgery (yrs)	
≤ 20	2
> 20	0
Degree of sport participation (pre-operative)	
Competitive	2
Recreational or none	0
Type of sport (pre-operative)	
Contact or forced overhead	1
Other	0
Shoulder hyperlaxity	
Shoulder hyperlaxity (anterior or inferior)	1
Normal laxity	0
Hill-Sachs on AP* radiograph	
Visible in external rotation	2
Not visible in external rotation	0
Glenoid loss of contour on AP radiograph	
Loss of contour	2
No lesion	0
<b>Total (points)</b>	<b>10</b>

\* AP, anteroposterior

Retesté sur la population initiale

Tableau II : Valeurs seuils du Score ISIS

Score ISIS (points)	Taux de Récidive de l'instabilité	p-value
< 3	5%	< 0.001
< 6	10%	< 0.001
> 6	70%	< 0.001

À un recul moyen de 31 mois ...

**ISIS < 3**  
No bone loss visible on Radiographs

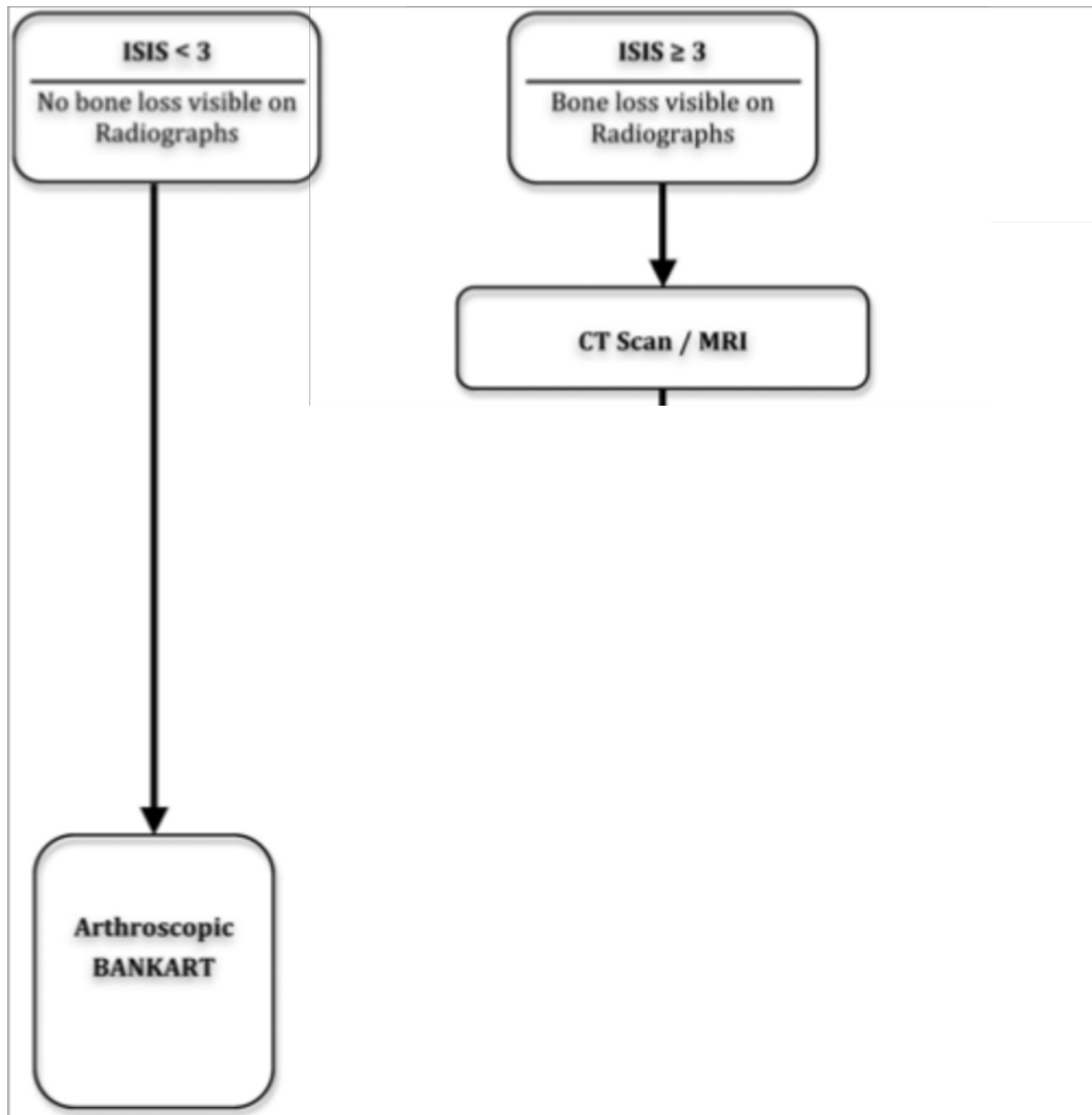


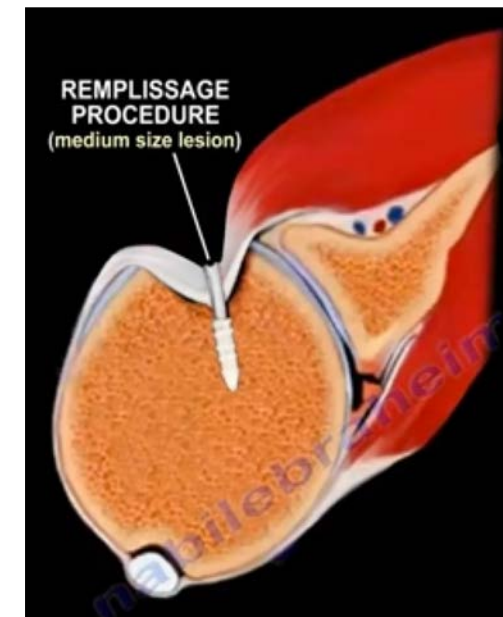
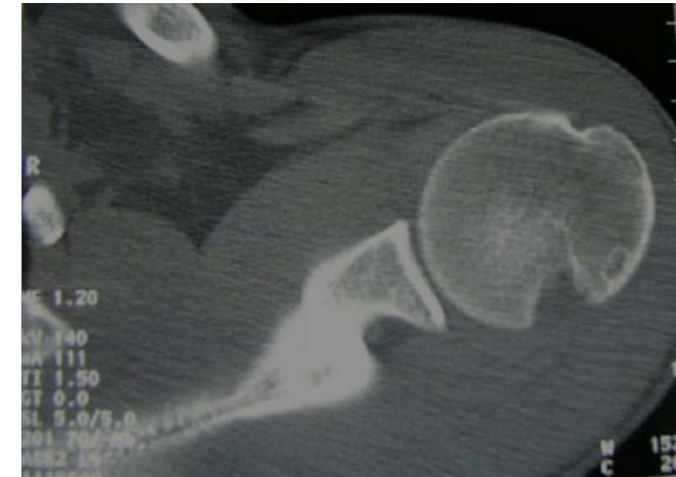
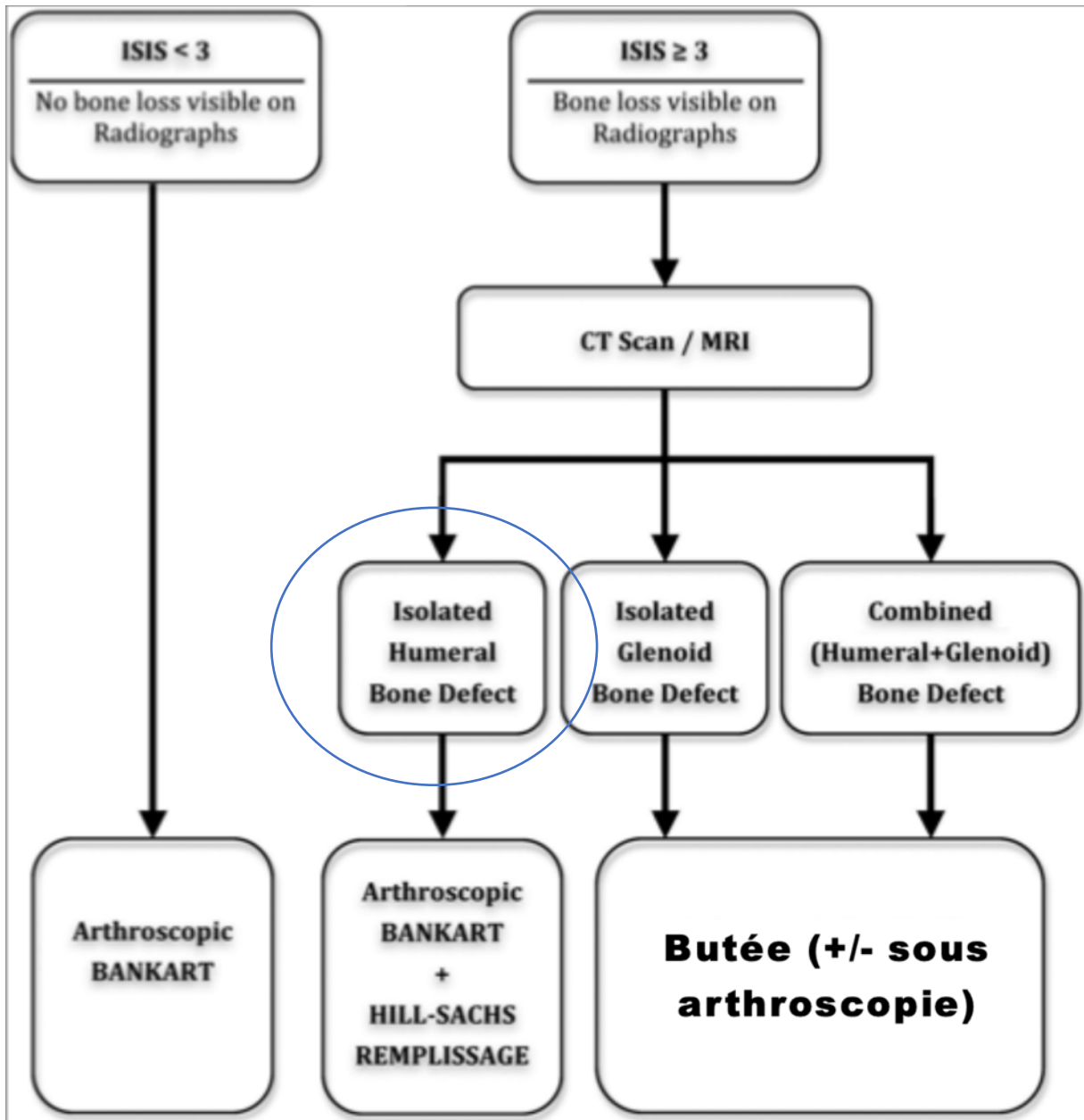
**Arthroscopic  
BANKART**

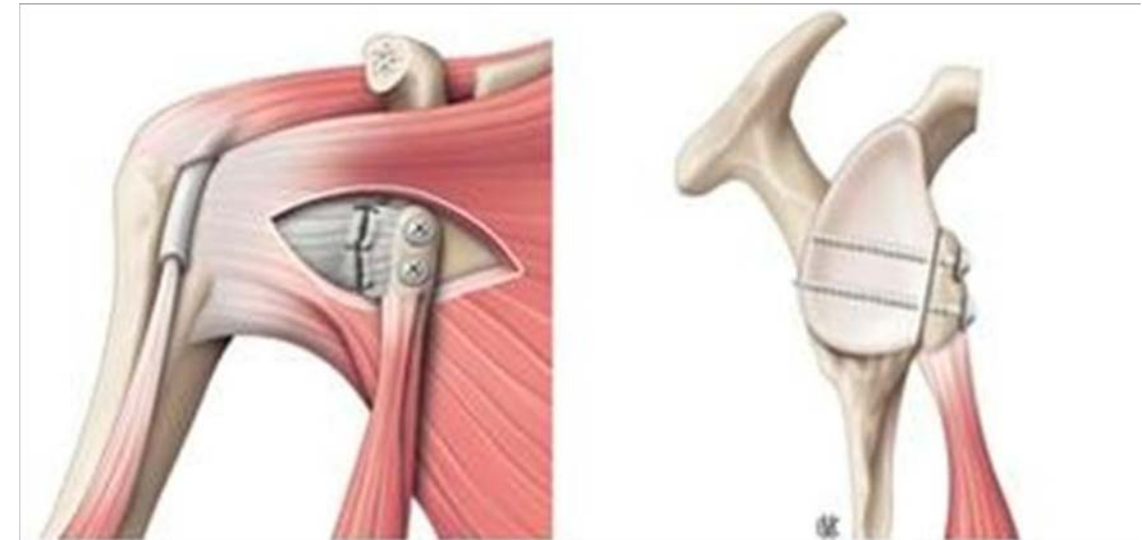
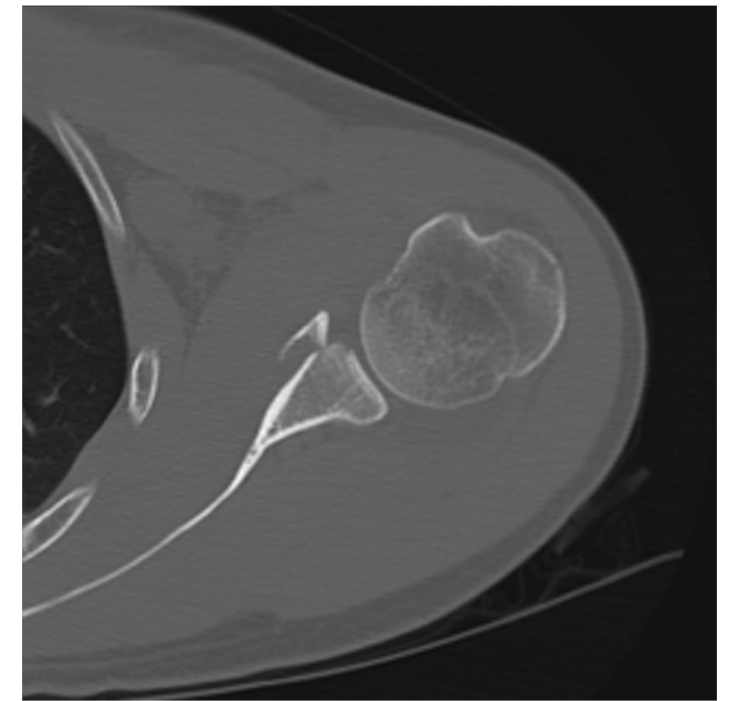
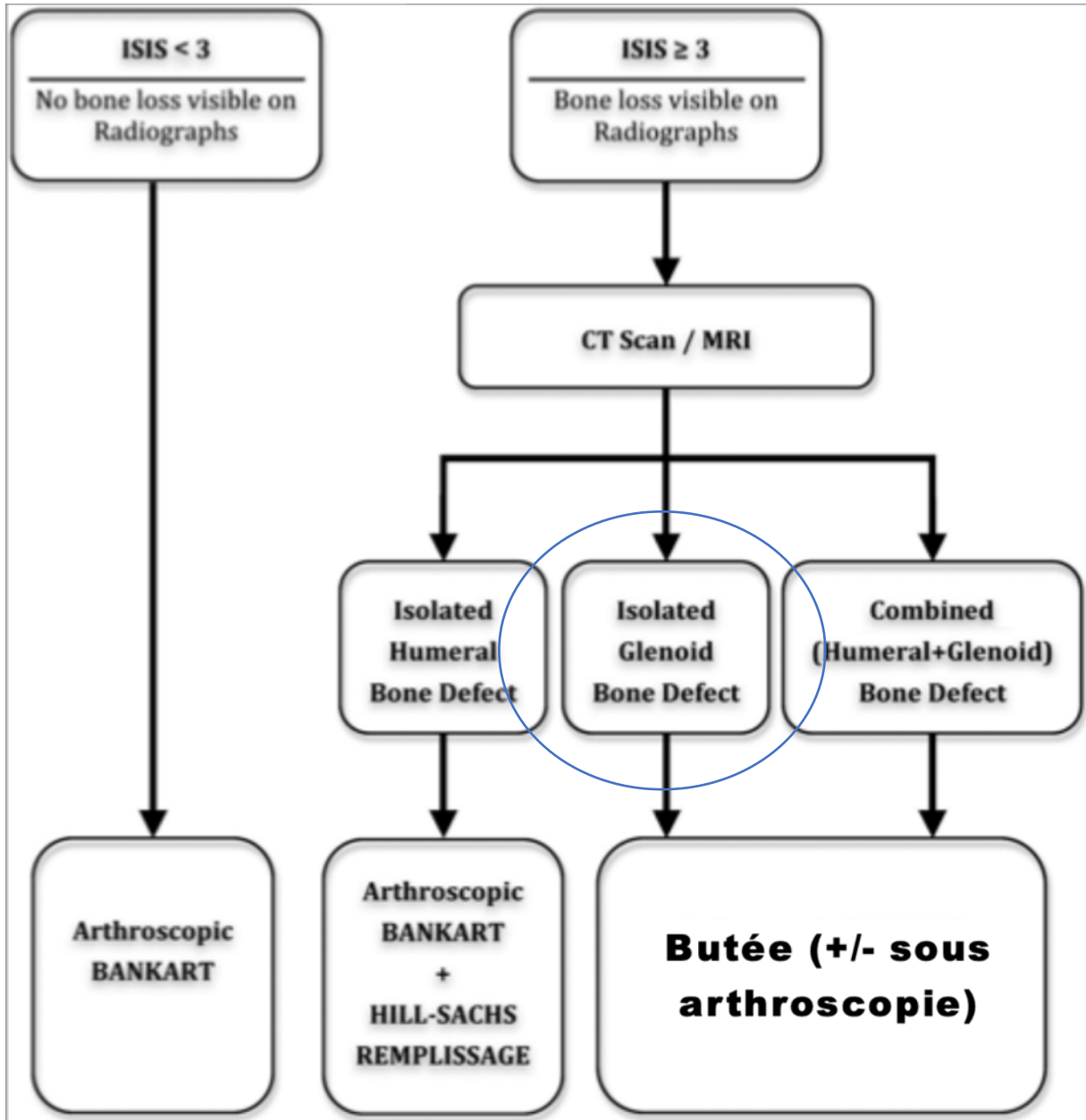
**ISIS ≥ 3**  
Bone loss visible on Radiographs

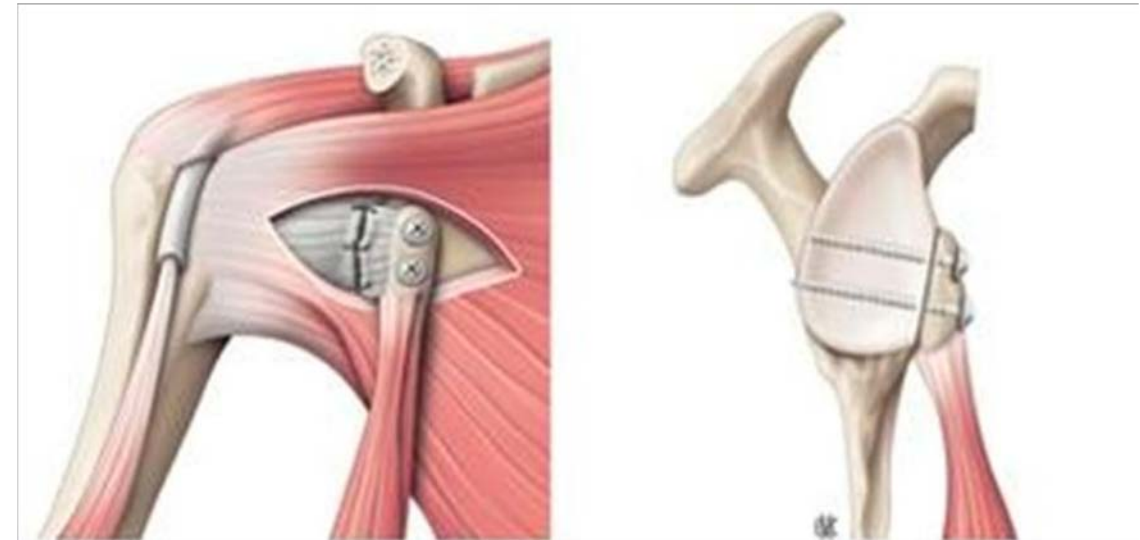
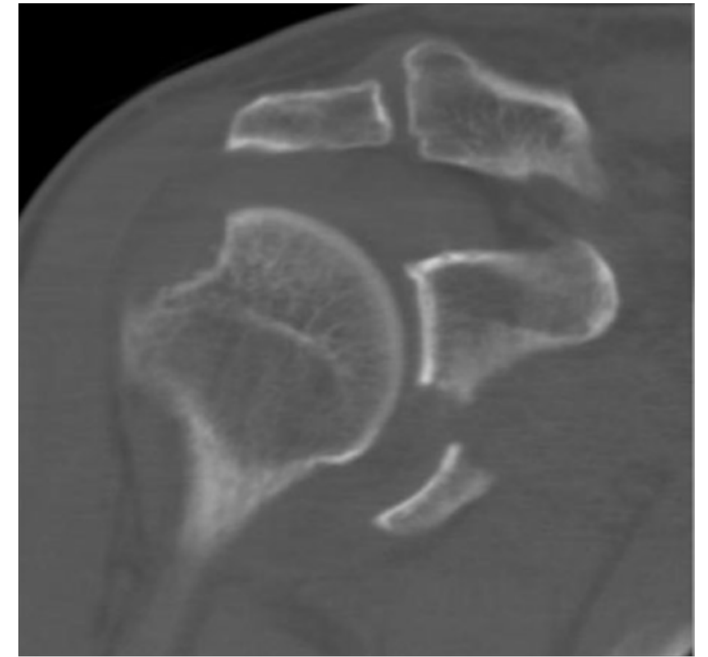
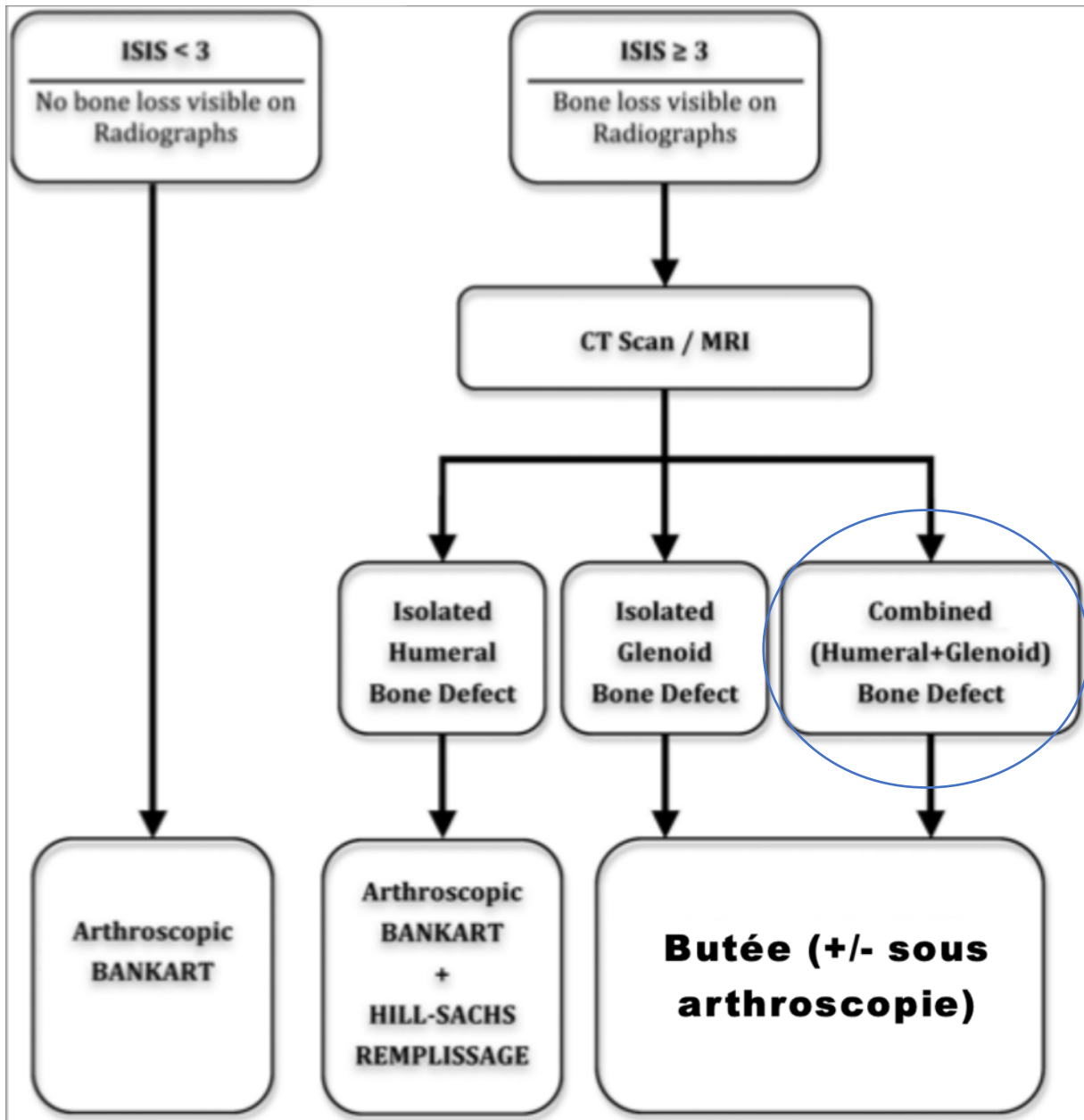
















## Quelles limites pour le "Bankart arthroscopique" ? - Intérêt d'un score pronostique préopératoire : Le score ISIS (Instability Severity Index Score)

Par P. Boileau\*, F. Balg\*\* dans la catégorie MISE AU POINT

\* Centre Hospitalier Universitaire de Nice • Hôpital de l'Archet-2 • 151, route Saint-Antoine-de-Gin - boileau.p@chu-nice.fr

Les techniques de stabilisation arthroscopiques de l'épaule sont actuellement bien codifiées : la plupart des chirurgiens utilisent des ancres avec sutures pour réinsérer le labrum et retendre le hamac capsulaire antéro-inférieur. Cependant, la récurrence de l'instabilité représente encore aujourd'hui la principale complication des stabilisations antérieures de l'épaule sous arthroscopie. Une analyse soignée et extensive de la littérature nous a montré que même avec les avancées techniques les plus récentes, le taux de récurrence de l'instabilité après stabilisation arthroscopique varie entre 10 et 30%. Après avoir mis au point une technique standardisée et reproductible, nous avons nous-même évalué et rapporté nos résultats après stabilisation arthroscopique de l'épaule : nous avons trouvé un taux de récurrence de 15% au recul minimum de deux ans.

Paru dans le numéro ► N°174 - Mai 2008  
Article consulté 4630 fois

Le LGHI peut être comparé à un hamac attaché du côté glénoïdien (l'arbre) et du côté huméral (le rocher)



## Aphorisme 5

"Rien ne sert de rattacher le hamac à un arbre cassé ou absent"

Ecurement sévère de glène = contre-indication absolue au Bankart @



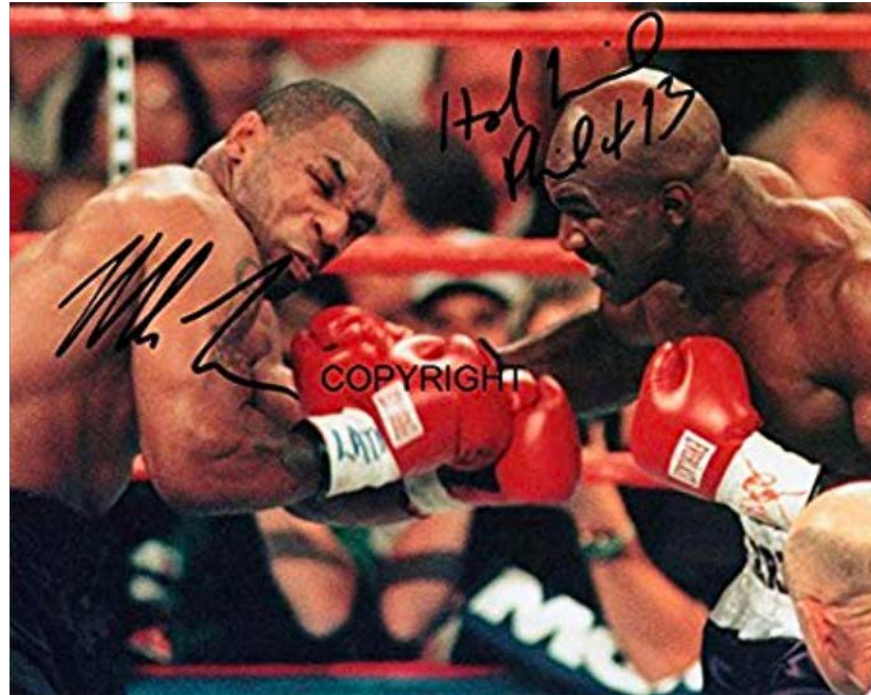


## ISIS Score : les limites

### 10 THE INSTABILITY SEVERITY INDEX SCORE IN ARTHROSCOPIC INSTABILITY SURGERY (ISIS): FAILURE TO VALIDATE ITS PREDICTIVE VALUE IN THE SELECTION OF ARTHROSCOPIC INSTABILITY SURGERY

*Stephen C. Weber, MD, Sacramento Knee and Sports Medicine, Sacramento, California, USA*

Rétrospectif  
Uni centrique  
Valeur prédictive avec un recul moyen de 31 mois  
Point de vue français



Editorial > [Arthroscopy](#), 35 (2), 367-371 Feb 2019

### Editorial Commentary: Which Patients Are Likely to Undergo Redislocation After an Arthroscopic Bankart Repair? Preoperative Instability Severity Index Scoring Over 3 Points–The Game Is Over!

[Pascal Boileau](#)<sup>1</sup>, [Devin B Lemmex](#)<sup>1</sup>

Affiliations + expand

PMID: 30712616 DOI: [10.1016/j.arthro.2018.11.028](#)

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### Is the Instability Severity Index Score a Valid Tool for Predicting Failure After Primary Arthroscopic Stabilization for Anterior Glenohumeral Instability?

[Mattia Loppini](#)<sup>1</sup>, [Giacomo Delle Rose](#)<sup>2</sup>, [Mario Borroni](#)<sup>2</sup>, [Emanuela Morengi](#)<sup>3</sup>, [Dario Pitino](#)<sup>2</sup>, [Cristián Domínguez Zamora](#)<sup>4</sup>, [Alessandro Castagna](#)<sup>5</sup>

Affiliations + expand

PMID: 30611589 DOI: [10.1016/j.arthro.2018.09.027](#)

> [Am J Sports Med](#), 43 (8), 1983-8 Aug 2015

### Utility of the Instability Severity Index Score in Predicting Failure After Arthroscopic Anterior Stabilization of the Shoulder

[Joideep Phadnis](#)<sup>1</sup>, [Christine Arnold](#)<sup>2</sup>, [Ahmed Elmorsy](#)<sup>2</sup>, [Mark Flannery](#)<sup>2</sup>

Affiliations + expand

PMID: 26122385 DOI: [10.1177/0363546515587083](#)

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Affiliations + expand

PMID: 30712616 DOI: [10.1016/j.arthro.2018.11.028](#)

## ISIS Score : à long terme ?

> Am J Sports Med, 47 (5), 1057-1061 Apr 2019

### Long-term, Prospective, Multicenter Study of Isolated Bankart Repair for a Patient Selection Method Based on the Instability Severity Index Score

Hervé Thomazeau <sup>1</sup>, Tristan Langlais <sup>2</sup>, Alexandre Hardy <sup>3</sup>, Jonathan Curado <sup>4</sup>, Olivier Herisson <sup>5</sup>, Jordane Mouton <sup>6</sup>, Christophe Charousset <sup>7</sup>, Olivier Courage <sup>8</sup>, French Arthroscopy Society, Geoffroy Nourissat <sup>9</sup>

Méthodologie solide

Prospectif multicentrique (11 centres)

Même technique opératoire, même protocole post opératoire, pas d'autres gestes associées

125 patients avec **ISIS 4 ou < 4**

suivis à M3, M6, A1, A3, A9

critère d'échec = luxation ou subluxation



**TABLE 3**  
**Studies of Arthroscopic Bankart Repair With a Minimum of 10 Years of Follow-up**

Study	No. of Shoulders	Loss to Follow-up, %	Mean Follow-up, y (range)	Recurrence Rate, %
Flinkkilä et al <sup>5</sup>	167	19	12.2 (10-16)	30
Zimmermann et al <sup>14</sup>	271	38	12.2	13
Aboalata et al <sup>1</sup>	143	37	13.3	18.2
Zaffagnini et al <sup>13</sup>	49	28	13.7 (10-17)	12.5
Kavaja et al <sup>6</sup>	81	14	13 (11-15)	22
Privitera et al <sup>8</sup>	20	12	13.5 (10.75-17.5)	25
Castagna et al <sup>4</sup>	31	12	10.9 (9.8-14.3)	22
van der Linde et al <sup>12</sup>	68	2	9 (8-10)	35
<b>Total</b>	<b>830</b>	<b>30 (n = 252)</b>	<b>12.2</b>	<b>22.2</b>

Kaplan-Meier Curve

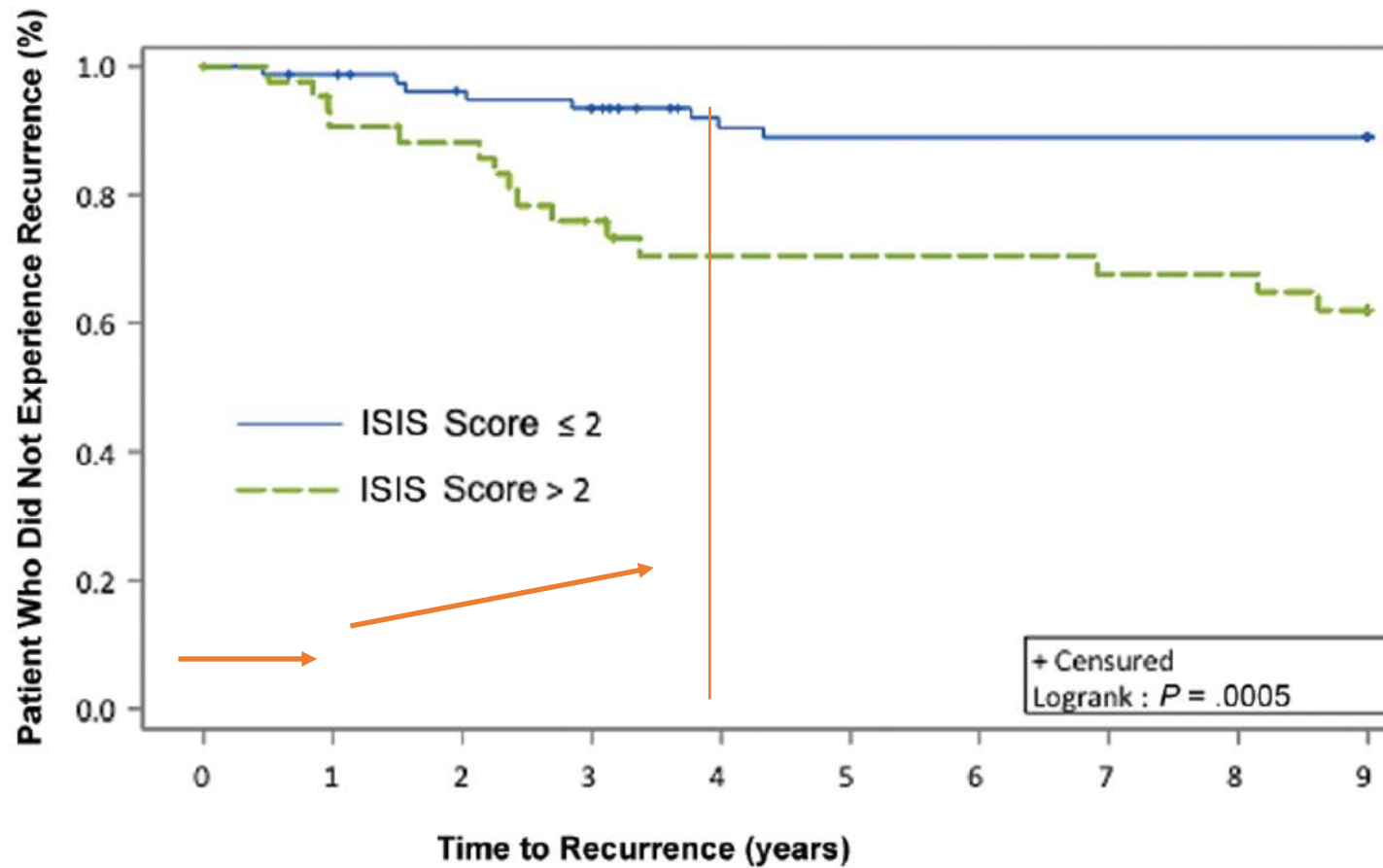
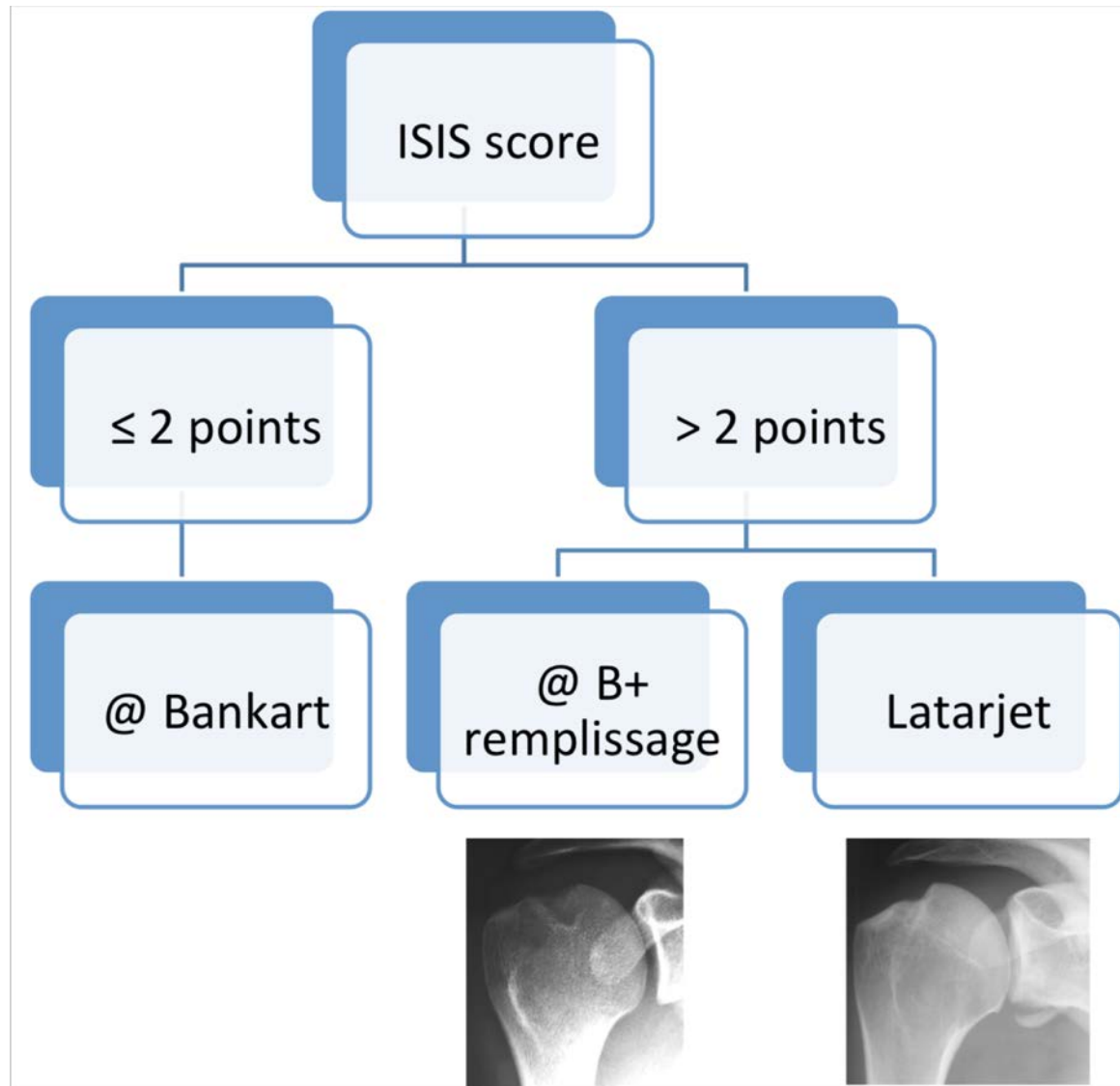


TABLE 2  
 Recurrence Rates Related to Preoperative  
 Instability Severity Index Score<sup>a</sup>

	0, 1, and 2 points	3 and 4 points
Recurrence rate ( $P = .0005$ )	10%	35.6%





**Q6 :** Hô, 19a, présente une instabilité antérieure chronique de l'articulation gléno-humérale droite (10 lux/sublux). Il pratique le rugby en club. Il présente une RE1 à 60°. La Rx de face en RE est la suivante.



- Quel est votre analyse de sa Rx ?
- Détailler son score ISIS
- Discuter la ou les meilleures options thérapeutiques pour ce jeune hô qui vient vous voir en cs et qui veut reprendre le rugby
- Une chirurgie de Bankart @ isolée est décidée. Quel est son risque d'échec ?
- Le patient revient vous voir 2 ans après avoir été opéré de son épaule par bankart @ en raison d'une récurrence. Quels étaient les principaux risques d'échecs de cette chir ?
- Reprise. Quelles sont les meilleures options chir pour ce patient désormais
- Quels sont les risques encourus par votre patient à l'issue de de cette nouvelle intervention ?

# LATARJET BUT HOW

- Material removal first cause of reoperation
  - Up to 46% Lebus OJSM 2017
- Lower  $\alpha$  angle
  - $>10^\circ$  increased risk suprascapular Laderman Arthroscopy
  - $>15^\circ$  increased non union
- **↘** screw length 20% too long Boileau Arthroscopy 2017
  - CT Planning : 30-32 Hardy KSSTA 2016
  - Unicortical screws are enough Shin Arthroscopy 2017

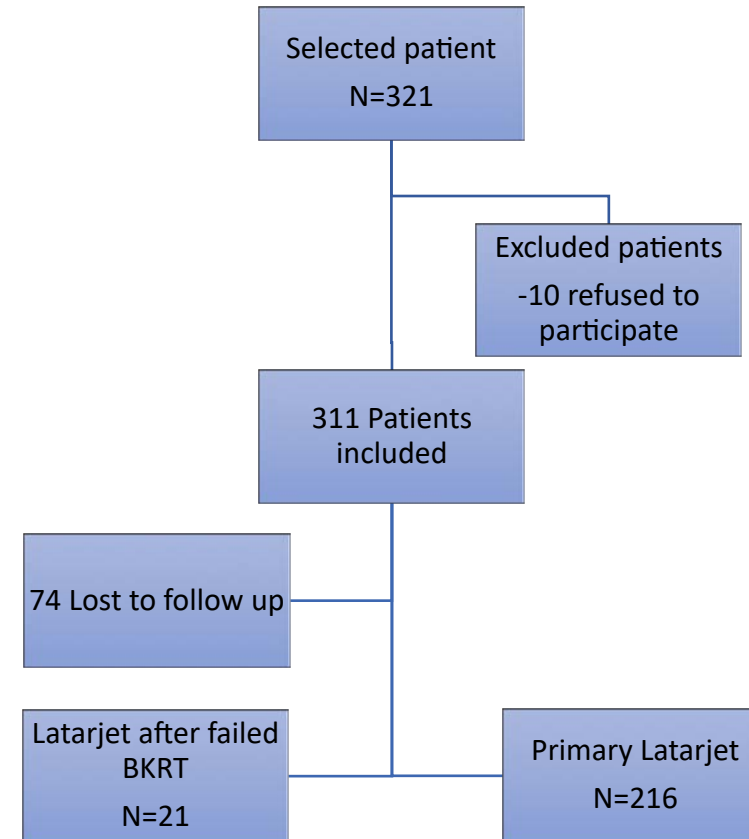


# Why so many Latarjet in FRANCE?

- “BKRT does not burn any bridge”

# MATERIAL ET METHODS Hardy AJSM 2019

- Retrospective comparative multicentred
- Low rate of lost to follow up
- Patients' filled forms
- 2-5 years follow up
- Open/Arthro Latarjet





# RESULTS

- No difference for
  - Recurrence (3.9%)
  - Reoperation (6%)

BUT

☐ ↗ pain after BKRT failure

☐ Lower WD score

		Total (N=309)	Primary LTJ (N=216)	Failed BKRT (N=21)	p-value
Recurrence	No	297 (96.1%)	211 (97.7%)	20 (95.2%)	p = 0.50
	Yes	12 (3.9%)	5 (2.3%)	1 (4.8%)	
Reoperation	No	294 (95.1%)	202 (93.5%)	21 (100%)	p = 0.23
	Yes	15 (4.9%)	14 (6.5%)	0 (0.0%)	
Residual pain	Mean (std)	1.3 (1.9)	1.2 (1.7)	2.5 (2.6)	p = 0.01
Walch-Duplay	Mean (std)	71.4 (25.3)	72.2 (25.0)	51.4 (24.6)	p = 0.0004
Follow up	Mean (std)	3.4 (0.8)	3.4 (0.8)	3.5 (1.0)	p = 0.53



# JJA 2020

**JOURNÉE DES JEUNES ARTHROSCOPISTES**

**WHEN:** 29 MAI 2020

**WHERE:** VAL de GRÂCE, PARIS

**WHAT:** Tips and tricks de l'épaule, traumatisme du poignet, chirurgie du cartilage, chirurgie du sportif...



## JJA 2020 - PROGRAMME - PROGRAMME

- 7:30 ACCUEIL DES PARTICIPANTS
- 8:00 MOT DES PRÉSIDENTS  
Johannes BARTH, Corentin PANGAUD
- 8:10 TIPS & TRICKS EN ARTHROSCOPIE D'ÉPAULE  
Arnaud GODENECHÉ, Philippe CLAVERT
- 9:10 EASYMEDSTAT : COMMENT ÇA MARCHE ?  
Mickaël CHELLI
- 9:50 BATTLE CLINICAT VERSUS ASSISTANTAT  
Elise LOOCK, Edouard HARLY
- 10:00 PAUSE
- 10:30 L'ARTHROSCOPIE DE POIGNET EN TRAUMATO  
Marion BURNIER
- 11:00 ARTHROQUIZZ  
Romain LETARTRE, Olivier BARBIER
- 12:00 PAUSE DÉJEUNER

LES PERTES DE SUBSTANCES CARTILAGINEUSES AU GENOU  
Thomas GICQUEL, Olivier BARBIER

LES INTERNES NE SAVENT PLUS EXAMINER LEURS PATIENTS  
EXAMEN CLINIQUE DE LA CHEVILLE  
Thomas BAUER

MON ARTHRO EN 180 SECONDES  
Concours de la meilleure vidéo d'arthroscopie

PAUSE

COMMENT GÉRER LES BLESSURES CHEZ UN SPORTIF DE HAUT NIVEAU ?  
Romain LETARTRE, équipe de kiné

TOPO CHIRURGIE MILITAIRE (NOM DU TOPO ?)  
Olivier BARBIER

REMISE DES PRIX  
PRÉSENTATION DU BUREAU  
CLÔTURE DU CONGRÈS

