Reconstrucción Capsular Anterior por Microinestabilidad Iatrogénica tras Artroscopia de Cadera

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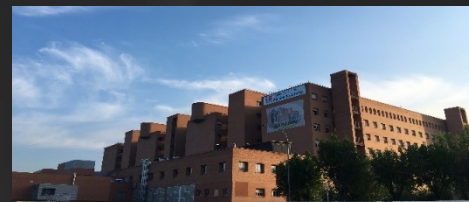
Hospital Príncipe de Asturias. Madrid

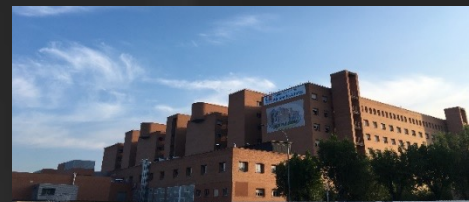


Historia Clínica

- Paciente de 38 años que en 2019 fue intervenida en otro centro de artroscopia de cadera derecha con diagnóstico de CFA (desbridamiento del labrum y osteoplastia femoral)

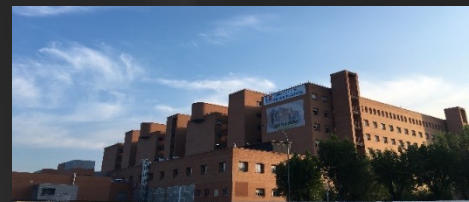
- Persistencia de dolor en la cadera, muy limitante para su vida diaria, y que le impide trabajar.

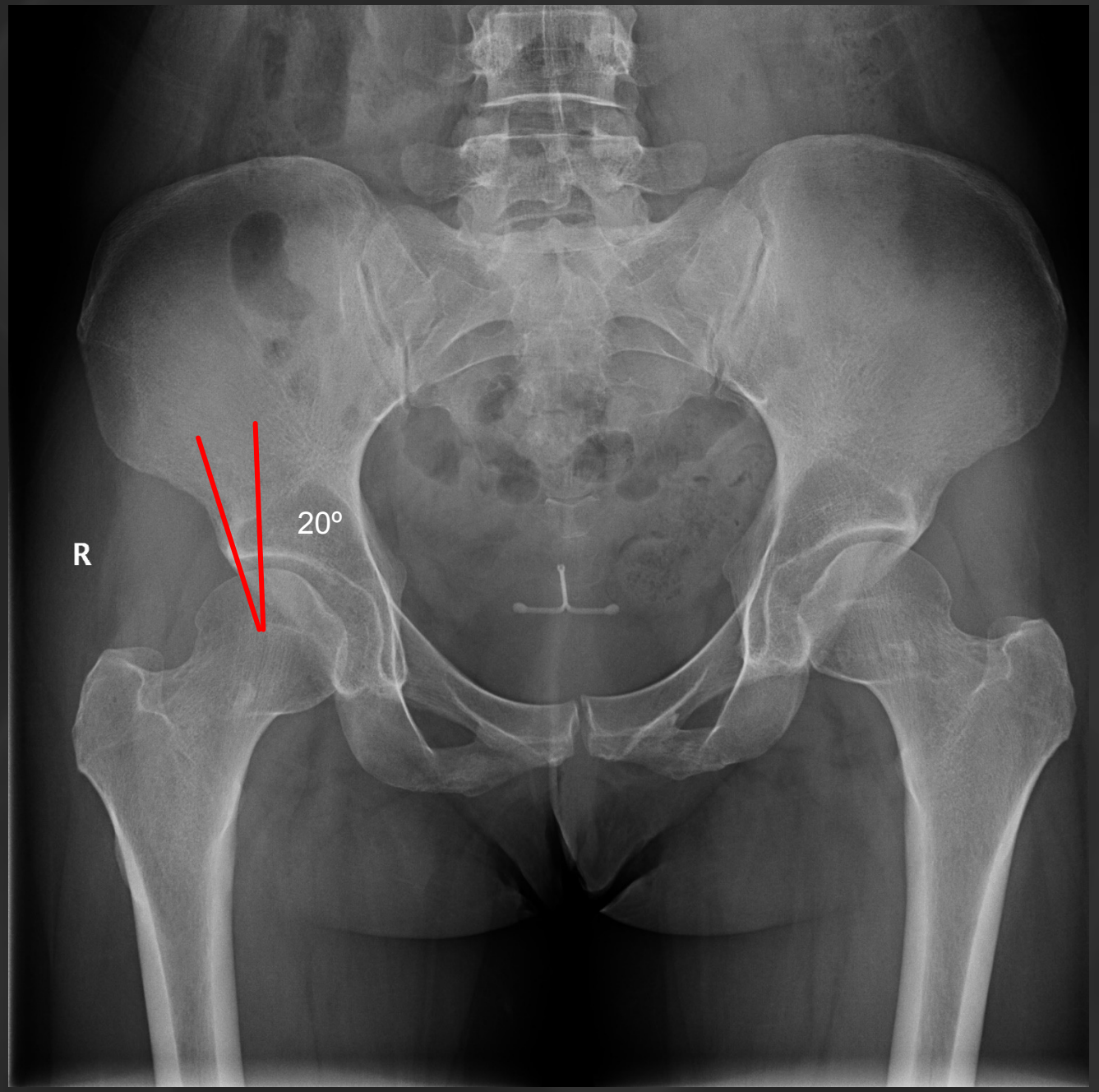
- Sensación de inestabilidad y subluxación de la cadera.



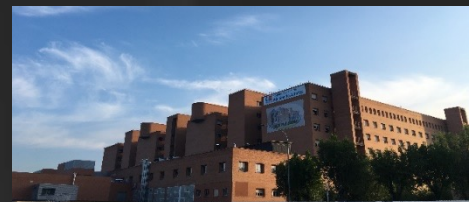
Exploración

- DIAL test +++
- DIRI +++
- FABER +++
- Aprehensión +++
- AB-HEER test +++
- Psoas +++
- Trocanter –
- BA limitado por el dolor, pero completo (hiperlaxitud)

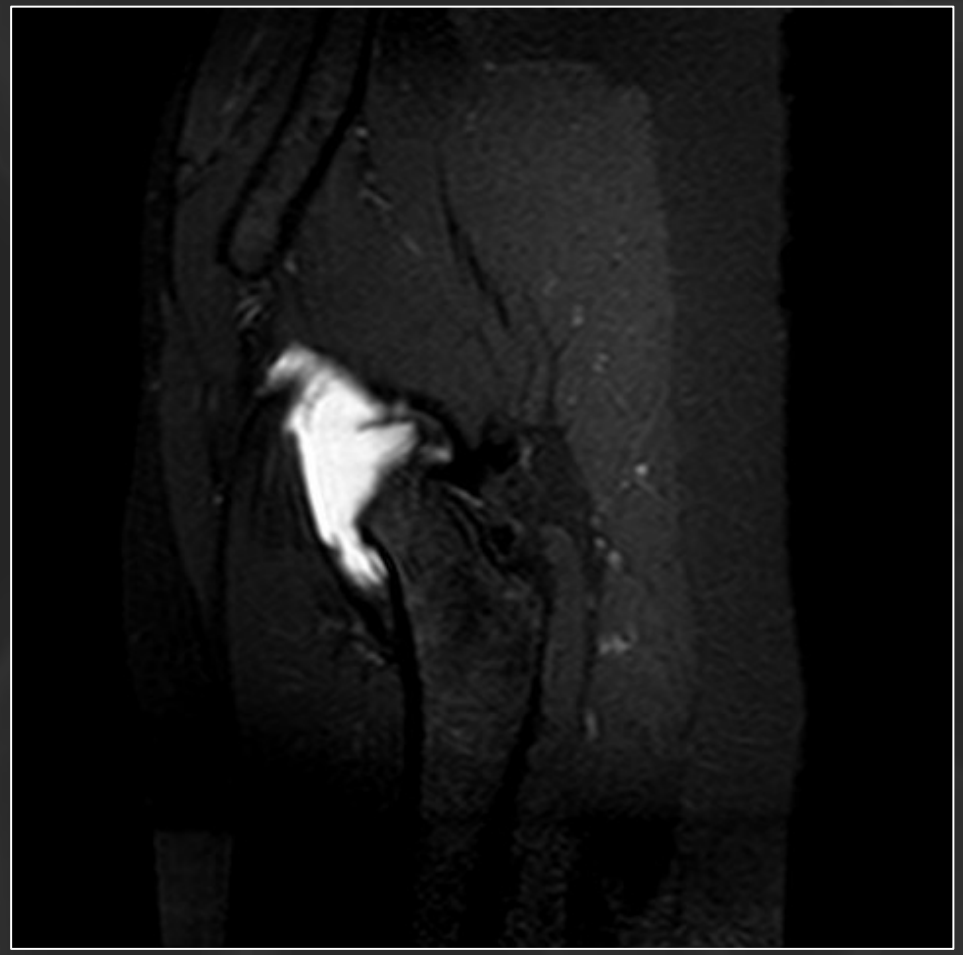


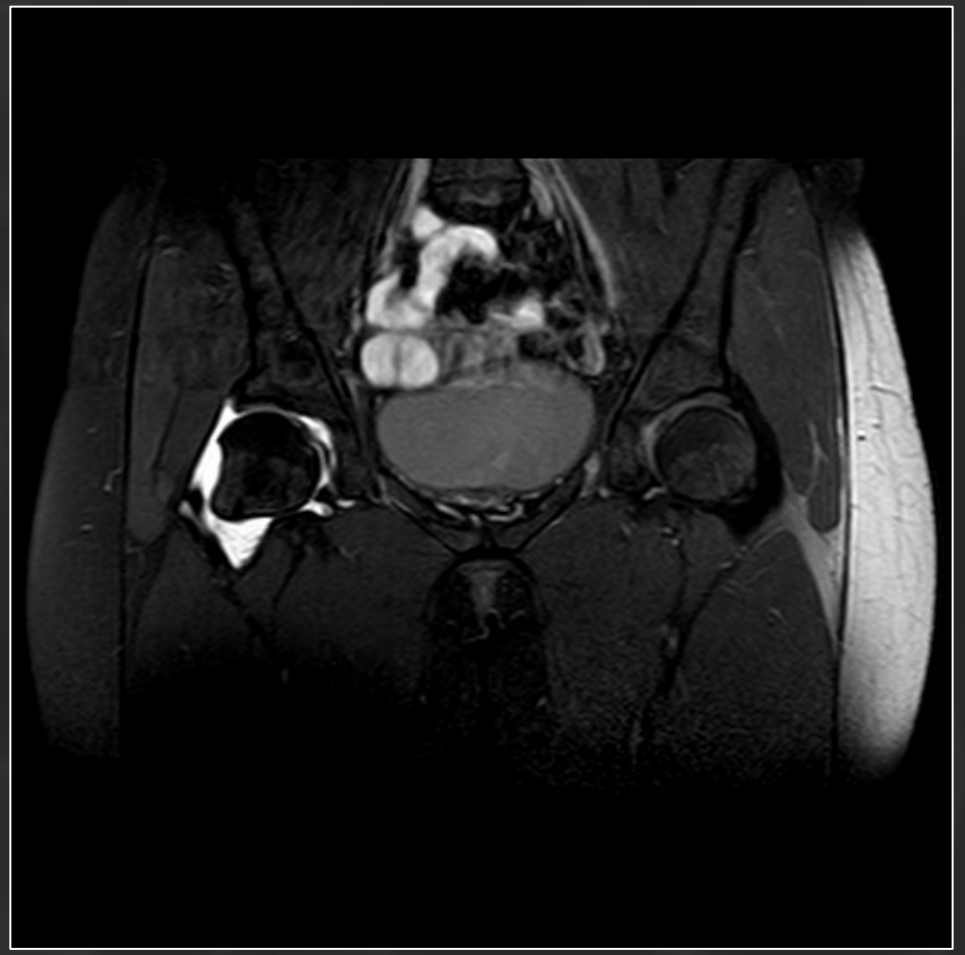


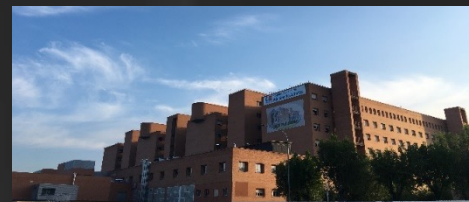
RX



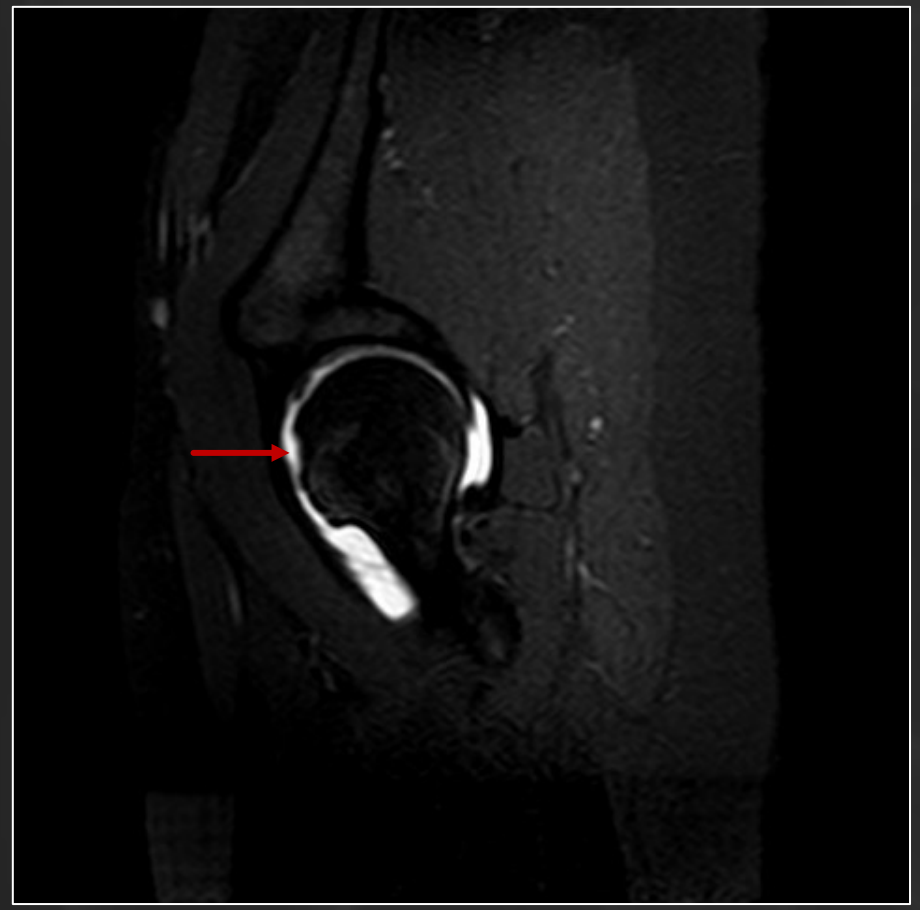
Artro-RM

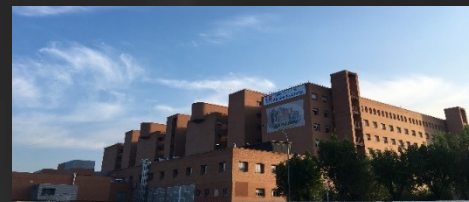




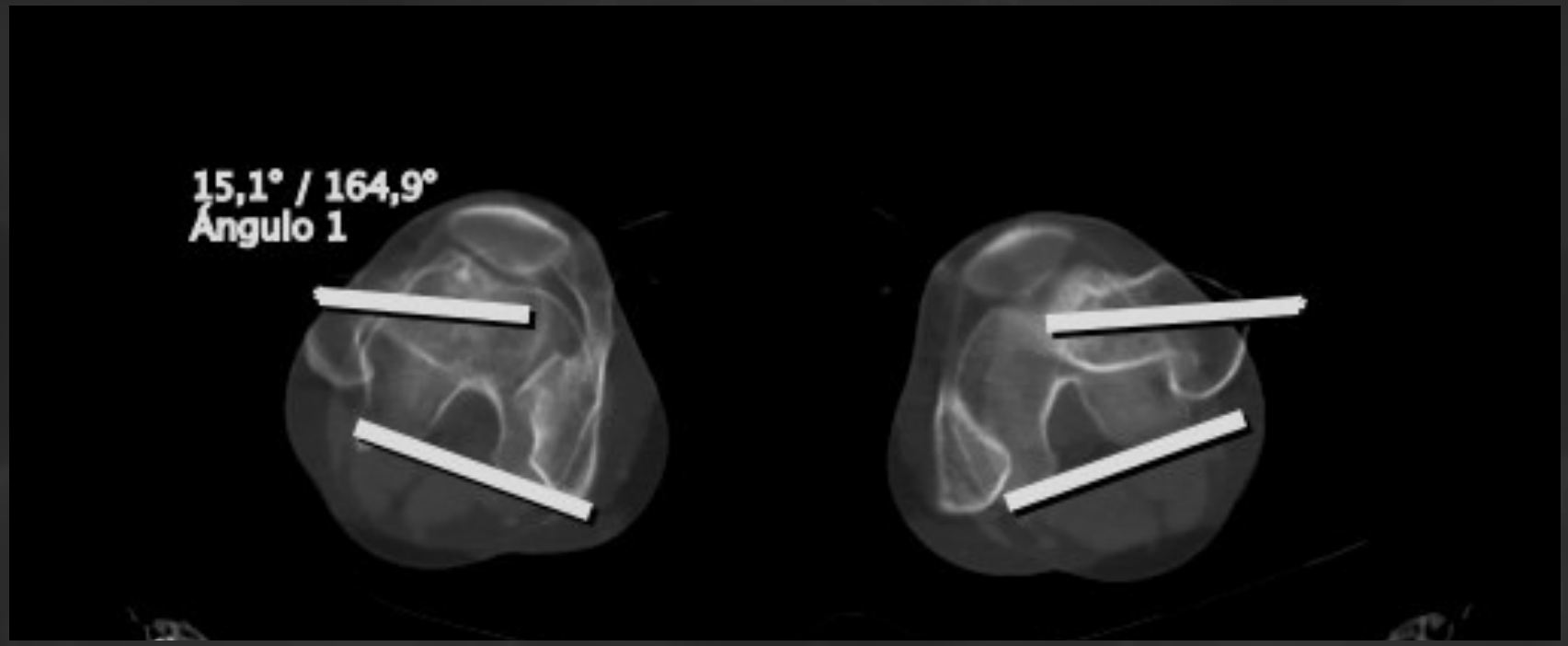


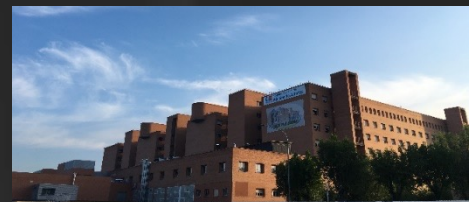
Artro-RM





TAC





Microinestabilidad de cadera

Original Research

Contributions of the Capsule and Labrum to Hip Mechanics in the Context of Hip Microinstability

Adam M. Johannsen,* MD, Leandro Ejnisman,*† MD, PhD, Anthony W. Behn,* MS, Kotaro Shibata,* MD, Timothy Thio,* MS, and Marc R. Safran,*‡ MD

Investigation performed at Department of Orthopaedic Surgery, Stanford University, Redwood City, California, USA

Skeletal Radiology (2020) 49:1903–1919
https://doi.org/10.1007/s00256-020-03516-7

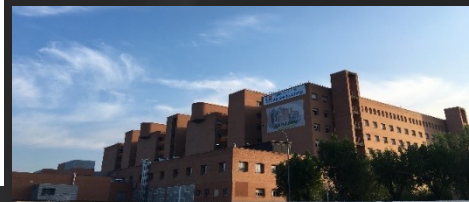
REVIEW ARTICLE

Check for updates

Microinstability of the hip: a systematic review of the imaging findings

Rebecca M Woodward[1,2] · Renuka M Vesey[1] · Catherine J Bacon[1,3] · Steve G White[4,5] · Matthew J Brick[3] · Donna G Blankenbaker[6]

Received: 26 February 2020 / Revised: 31 May 2020 / Accepted: 10 June 2020 / Published online: 25 June 2020



Microinestabilidad de cadera

Knee Surgery, Sports Traumatology, Arthroscopy
https://doi.org/10.1007/s00167-022-06933-4

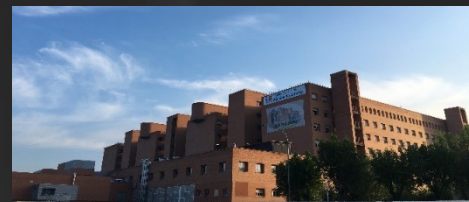
HIP

Check for updates

Diagnosing Hip Microinstability: an international consensus study using the Delphi methodology

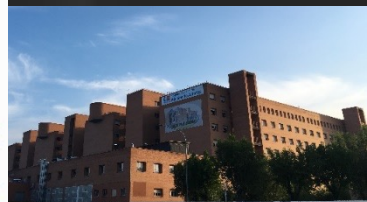
Vikas Khanduja[1] · Nicholas Darby[1] · John O'Donnell[2] · Nicolas Bonin[3] · Marc R. Safran[4] · The International Microinstability Expert Panel

Received: 1 December 2021 / Accepted: 4 March 2022



Diagnosing Hip Microinstability: an international consensus study using the Delphi methodology

	PATIENT HISTORY	EXAMINATION	IMAGING	TOTAL
MAJOR FACTOR	Hip pain	Either external or internal rotation > 60°	Signs of DDH on imaging (Wiberg angle<20° or Tonnis angle>10° or Sharp angle>42°)	(Minimum 6)
	Giving way or a sensation of instability	Positive log roll/dial test	Centre of the femoral head shows subluxation or a vacuum sign on a split AP radiograph (if split position unobtainable then a frog leg lateral radiograph)	
	Prior diagnosis of a connective tissue disorder e.g.: Ehlers-Danos or Marfans syndrome	Positive anterior apprehension or HEER (hyperextension external rotation) test	FEAR index >5°	
	No other clear diagnosis that explains the patient's signs and symptoms	Generalised hypermobility (Defined by a Beighton score of > 5 out of 9)	Bony radiological evidence insufficient to explain positive examination findings of instability	
			Vacuum sign when the hip is under simple manual longitudinal traction prior to hip arthroscopy	
			At hip arthroscopy, less than 40mm of fine screw traction is required to distract the femoral head 8-10mm from the acetabulum	
MINOR FACTOR	Female gender	Presence of internal or external snapping of the hip	CAM lesion demonstrated on imaging	
	Symptoms related to activity	Palpation alone insufficient to reproduce all the painful symptoms	Cliff sign seen on plain radiograph of the hip	
	Symptoms gradually getting worse	Positive Impingement test	Retroverted acetabulum indicated by a crossover sign, ischial spine sign or posterior wall sign	
	Prior history of a dislocation/subluxation of the hip	Positive posterior apprehension test	Labral tear seen on MRI arthrography	
	History of an unrepaired hip capsulotomy	Positive prone external rotation test	MRI shows >5mm anterior or posterior joint recess	
	Positive response to the diagnostic intra-articular hip injection	Positive AB-HEER (abduction hyperextension external rotation) test	Thin anterior capsule (<3mm) seen on MRI	
	Patient indulges in a sport which involves significant axial loading at a competitive level e.g: figure skating, tennis, football, baseball, golf, skating, martial arts, gymnastics or ballet		At hip arthroscopy, after distraction, does the femoral head remain >3mm from the acetabular surface if the negative intraarticular pressure/traction is removed	
TOTAL	(Minimum 4)	(Minimum 4)	(Minimum 4)	Total 12



Microinestabilidad de cadera

	PATIENT HISTORY	EXAMINATION	IMAGING
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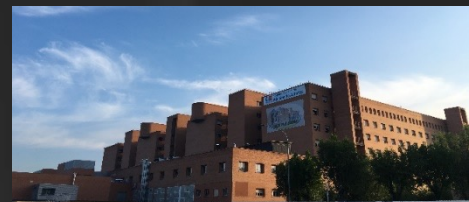
			FEAR index >5°
	Prior diagnosis of a connective tissue disorder e.g.: Ehlers-Danos or Marfans syndrome	Positive anterior apprehension or HEER (hyperextension external rotation) test	Bony radiological evidence insufficient to explain positive examination findings of instability
	No other clear diagnosis that explains the patient's signs and symptoms	Generalised hypermobility (Defined by a Beighton score of > 5 out of 9)	Vacuum sign when the hip is under simple manual longitudinal traction prior to hip arthroscopy
			At hip arthroscopy, less than 40mm of fine screw traction is required to distract the femoral head 8-10mm from the acetabulum



Microinestabilidad de cadera

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	Patient indulges in a sport which involves significant axial loading at a competitive level e.g: figure skating, tennis, football, baseball, golf, skating, martial arts, gymnastics or ballet	Positive AB-HEER (abduction hyperextension external rotation) test	At hip arthroscopy, after distraction, does the femoral head remain >3mm from the acetabular surface if the negative intraarticular pressure/traction is removed

Knee Surgery, Sports Traumatology, Arthroscopy
https://doi.org/10.1007/s00167-021-06835-x

EDITORIAL

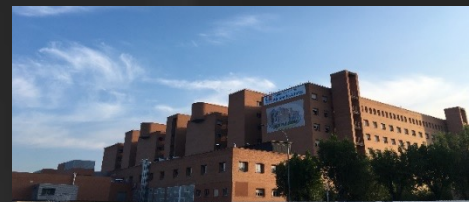
Hip microinstability: fact or fiction?

Pierre-Olivier Jean[1] · Marc R. Safran[2] · Olufemi R. Ayeni[1]

Received: 8 October 2021 / Accepted: 2 December 2021

CLASIFICACIÓN

- Anomalías óseas/displasia
- Enfermedades del tejido conectivo
- Post-traumática
- Microtraumatismos
- Iatrogénica
- Idiopática



Inestabilidad Iatrogénica

Current Reviews in Musculoskeletal Medicine (2021) 14:351–360
https://doi.org/10.1007/s12178-021-09732-5

HIP/FAI (A ZHANG AND Y-M YEN, SECTION EDITORS)

Hip Capsular Deficiency—A Cause of Post-Surgical Instability in the Revision Setting Following Hip Arthroscopy for Femoroacetabular Impingement

Alexander J. Mortensen[1] · Allan K. Metz[1] · Devin L. Froerer[2] · Stephen K. Aoki[1]

Accepted: 20 October 2021 / Published online: 17 November 2021

Clinical and Radiographic Presentation of Capsular Iatrogenic Hip Instability After Previous Hip Arthroscopy

Dillon C. O'Neill,* MD, Alexander J. Mortensen,† BS, Peter C. Cannamela,† BS, and Stephen K. Aoki,*‡ MD
Investigation performed at the University of Utah, Salt Lake City, Utah, USA

Clinical and Radiographic Presentation of Capsular Iatrogenic Hip Instability After Previous Hip Arthroscopy

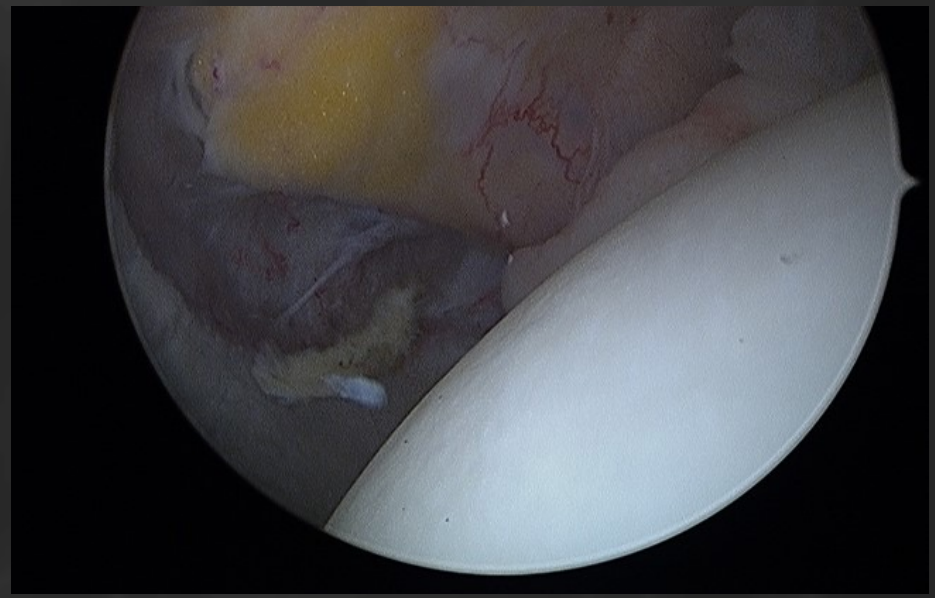
Dillon C. O'Neill,* MD, Alexander J. Mortensen,† BS, Peter C. Cannamela,† BS, and Stephen K. Aoki,*‡ MD
Investigation performed at the University of Utah, Salt Lake City, Utah, USA

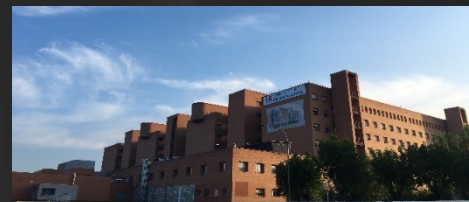
Arthroscopic Capsular Repair for Symptomatic Hip Instability After Previous Hip Arthroscopic Surgery

James D. Wylie,* MD, MHS, James T. Beckmann,† MD, MS, Travis G. Maak,* MD, and Stephen K. Aoki,*‡ MD
Investigation performed at the Department of Orthopaedic Surgery, University of Utah, Salt Lake City, Utah, USA

Tratamiento

- 2020 : Artroscopia de cadera
- Gran defecto capsular anterior con tejido fino y friable.
- Osteoplastia femoral en zona de carga.
- Plicatura capsular con porción refleja del recto anterior.
- 3 meses : Persistencia del dolor (EVA 8/10)y sensación de inestabilidad.





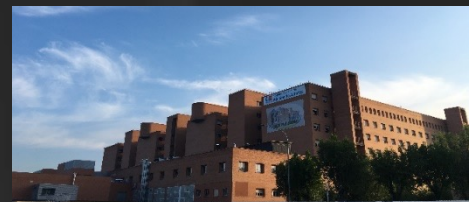
Plastia capsular

A Case Report & Literature Review

Anterior Hip Capsuloligamentous Reconstruction for Recurrent Instability After Hip Arthroscopy

Brian D. Dierckman, MD, and Carlos A. Guanche, MD

AJO



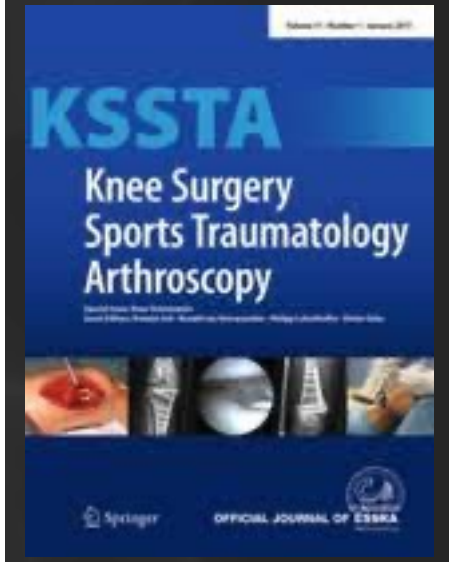
Plastia capsular

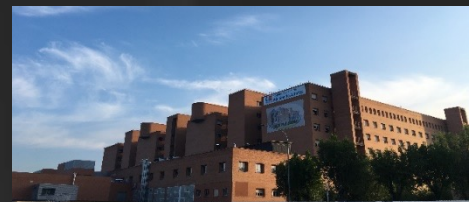
Knee Surg Sports Traumatol Arthrosc (2017) 25:3–8
DOI 10.1007/s00167-016-4258-z

HIP

Anterior hip capsuloligamentous reconstruction with Achilles allograft following gross hip instability post-arthroscopy

Marco Yeung[1] · Moin Khan[1] · Dale Williams[1] · Olufemi R. Ayeni[1]

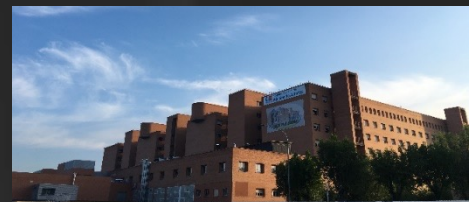




Plastia capsular Aquiles

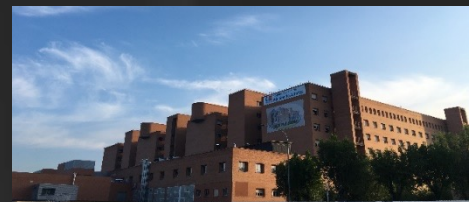
Ligamento Iliofemoral o ligamento en Y de Bigelow

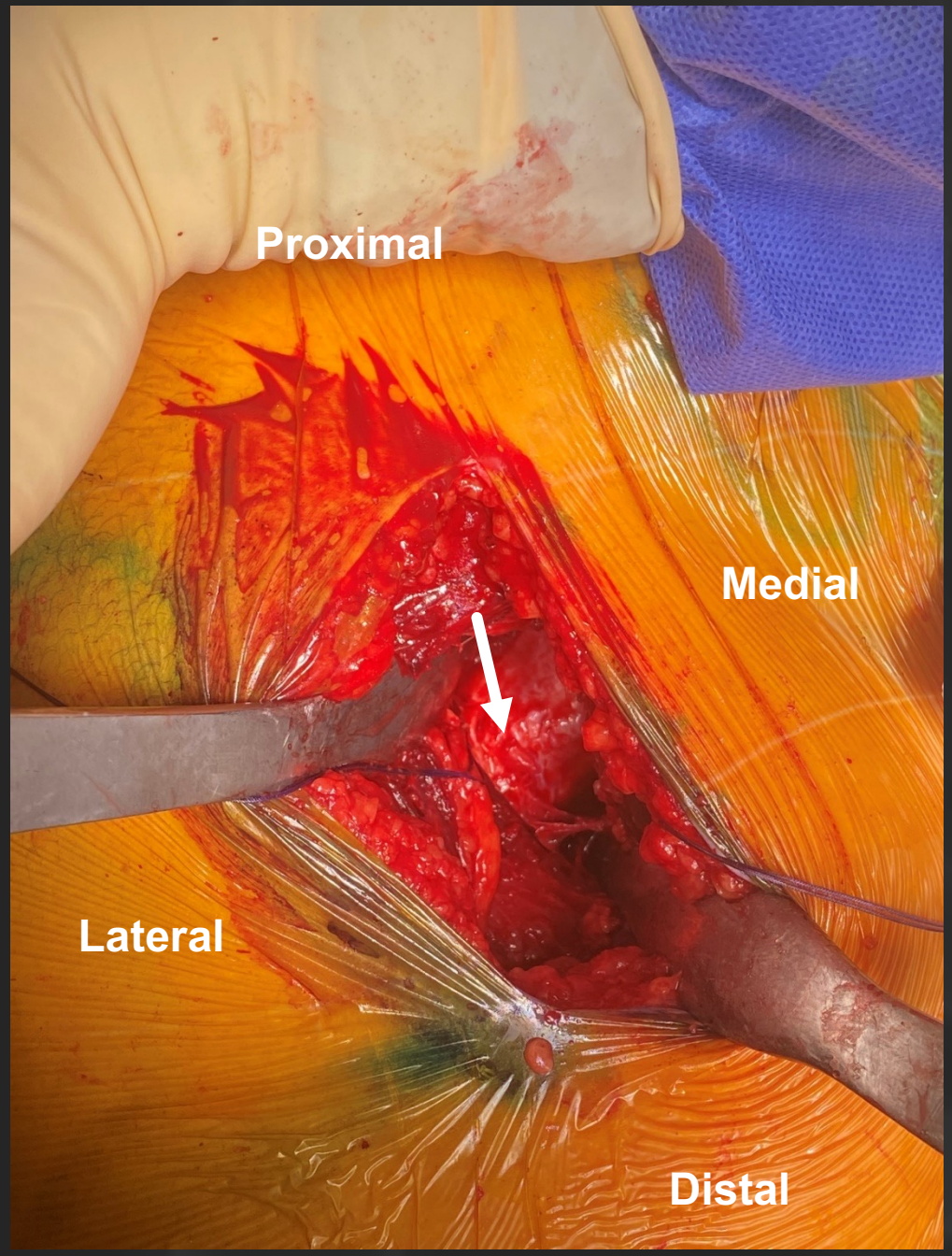
- Distal a la EIAI
- Línea intertrocantérica



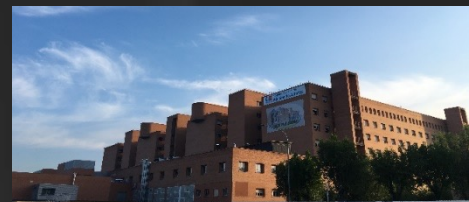
Plastia capsular

Abordaje anterior directo

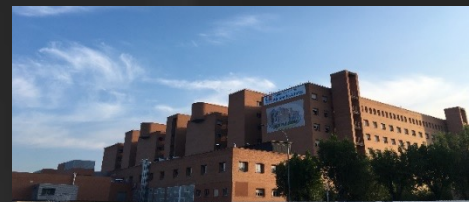


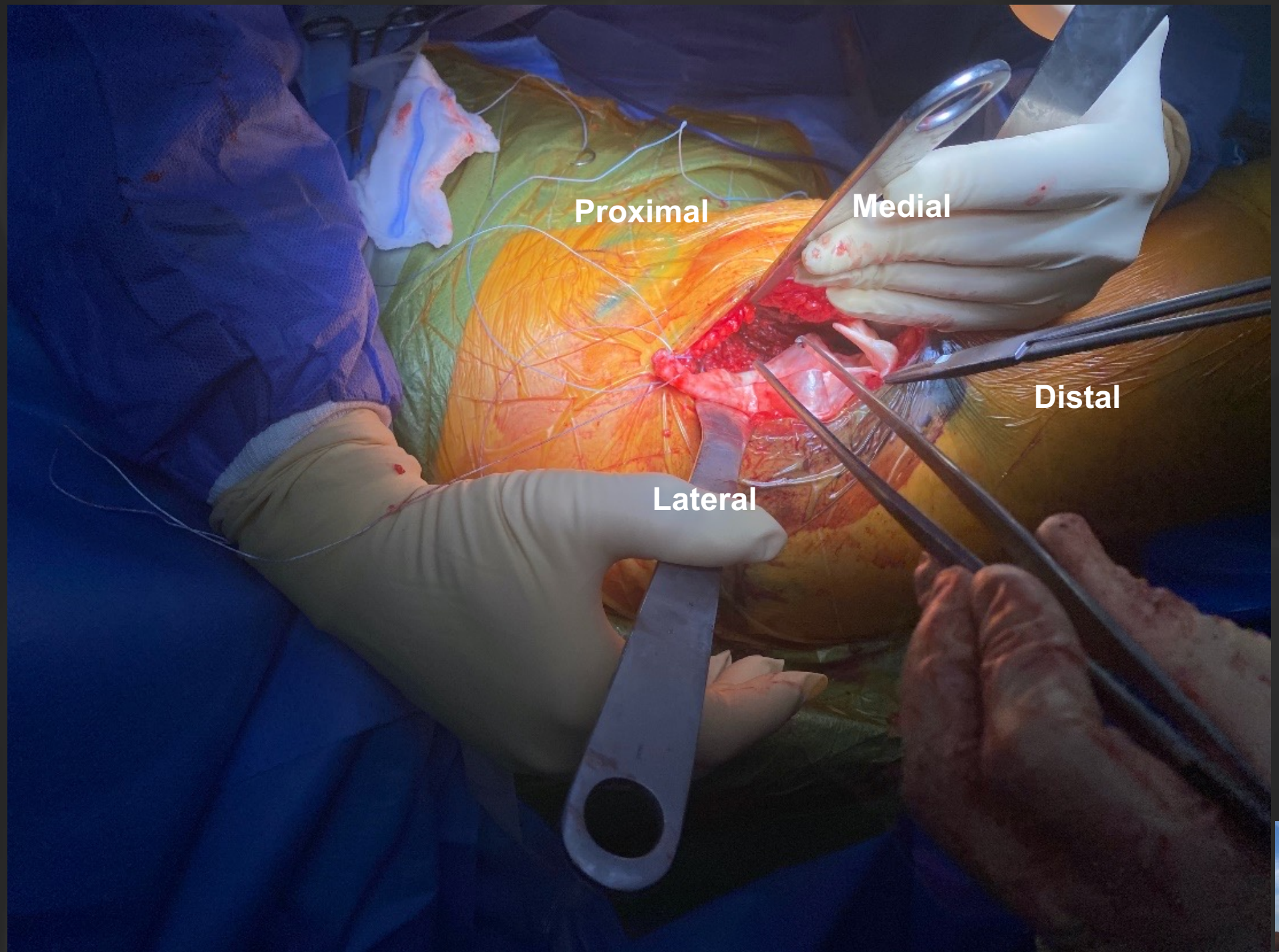


- Ausencia de cápsula anterior.
- Tejido fino y friable que no confiere ninguna estabilidad a la cadera.

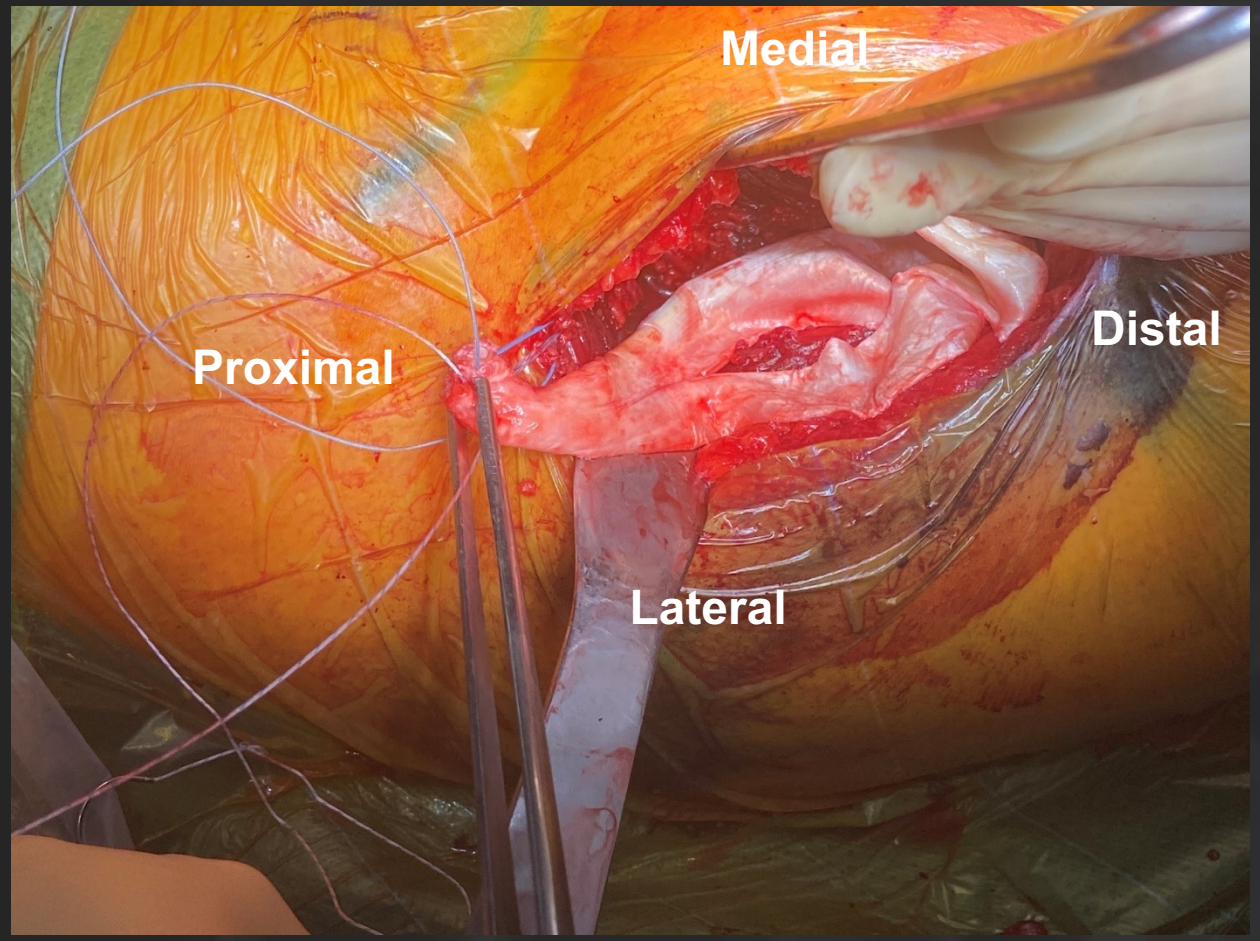


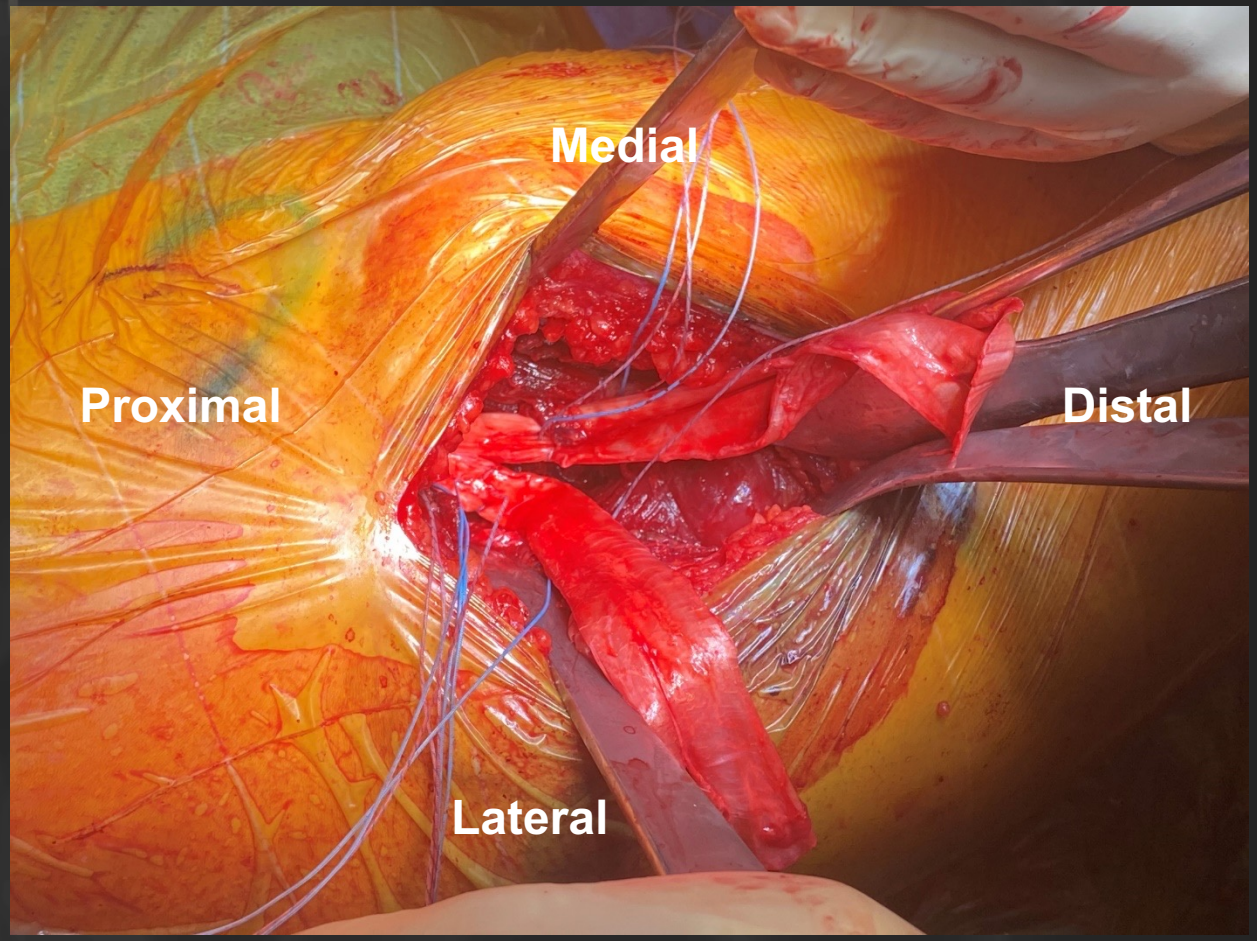
Plastia capsular

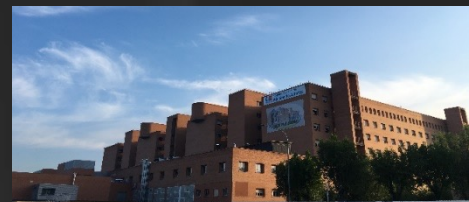



Proximal
Medial
Distal
Lateral

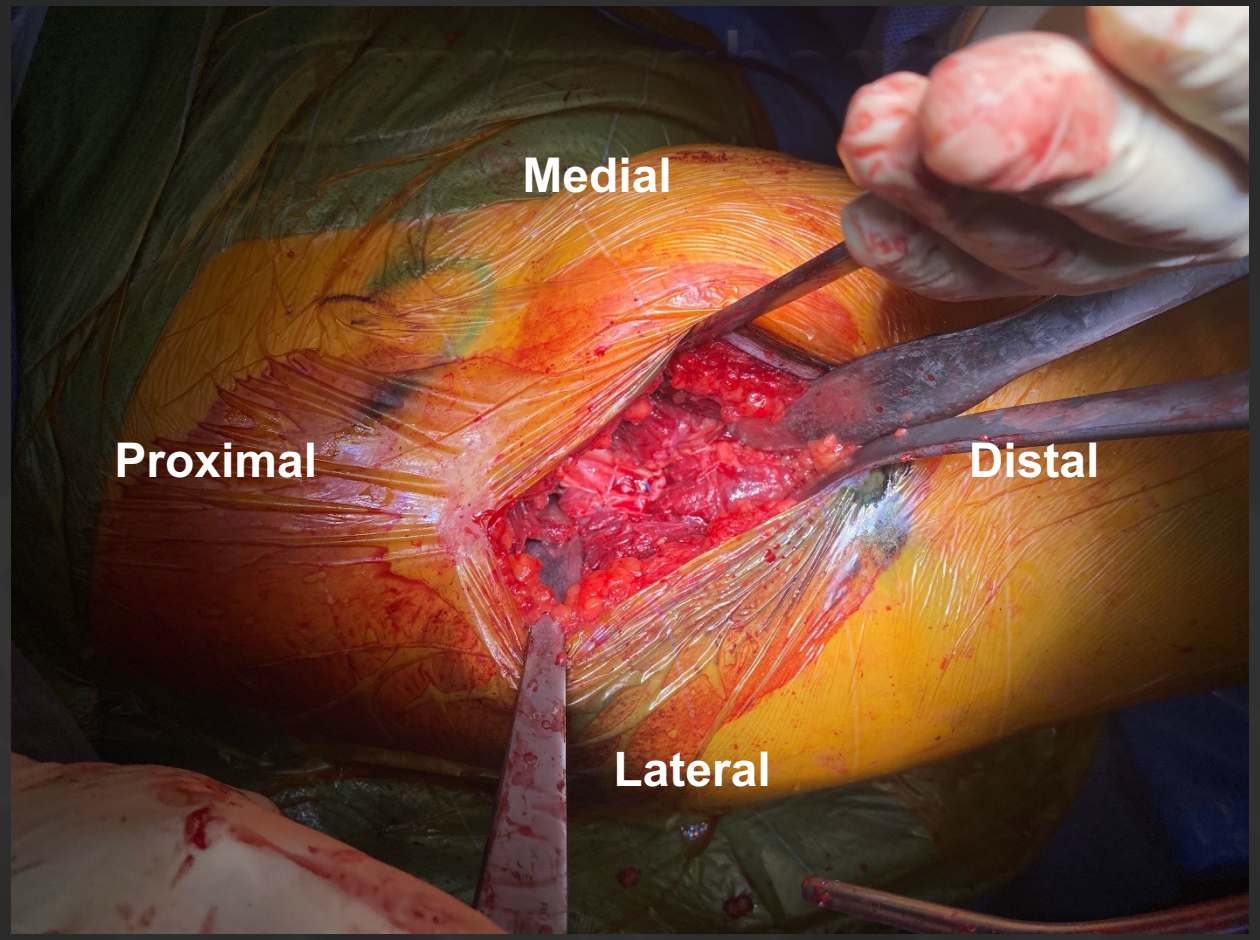
Plastia capsular

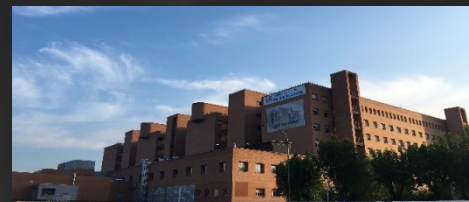






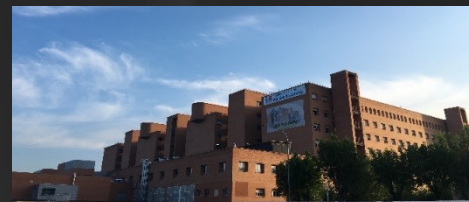
Plastia capsular





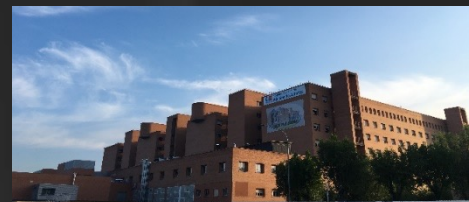
Postop.

Preop.



Evolución 3 meses

- Corrección parcial del DIAL test.
- Mejoría de la sensación de inestabilidad.
- Mejoría del dolor (Eva de 8/10 preop. a 4/10 a los 3 meses)

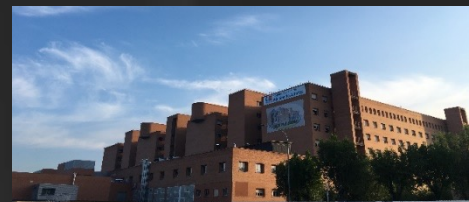



2021

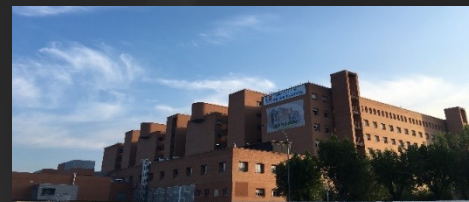

2020

Evolución 9 meses

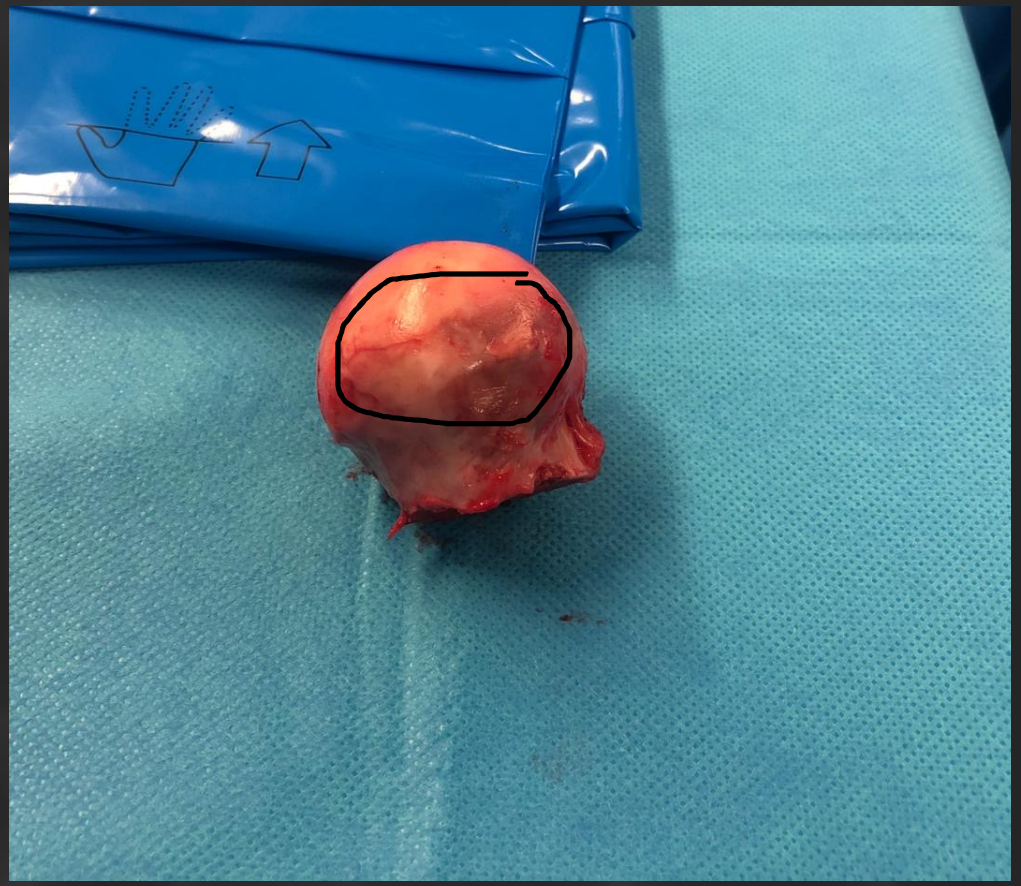
- Mejor que antes de operarse, pero persiste dolor EVA 4/10.
- No puede trabajar ni hacer vida normal con sus hijas .

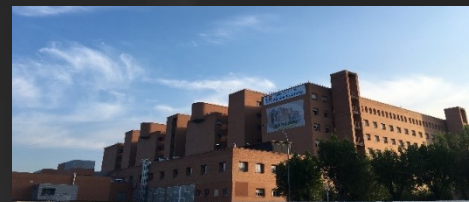


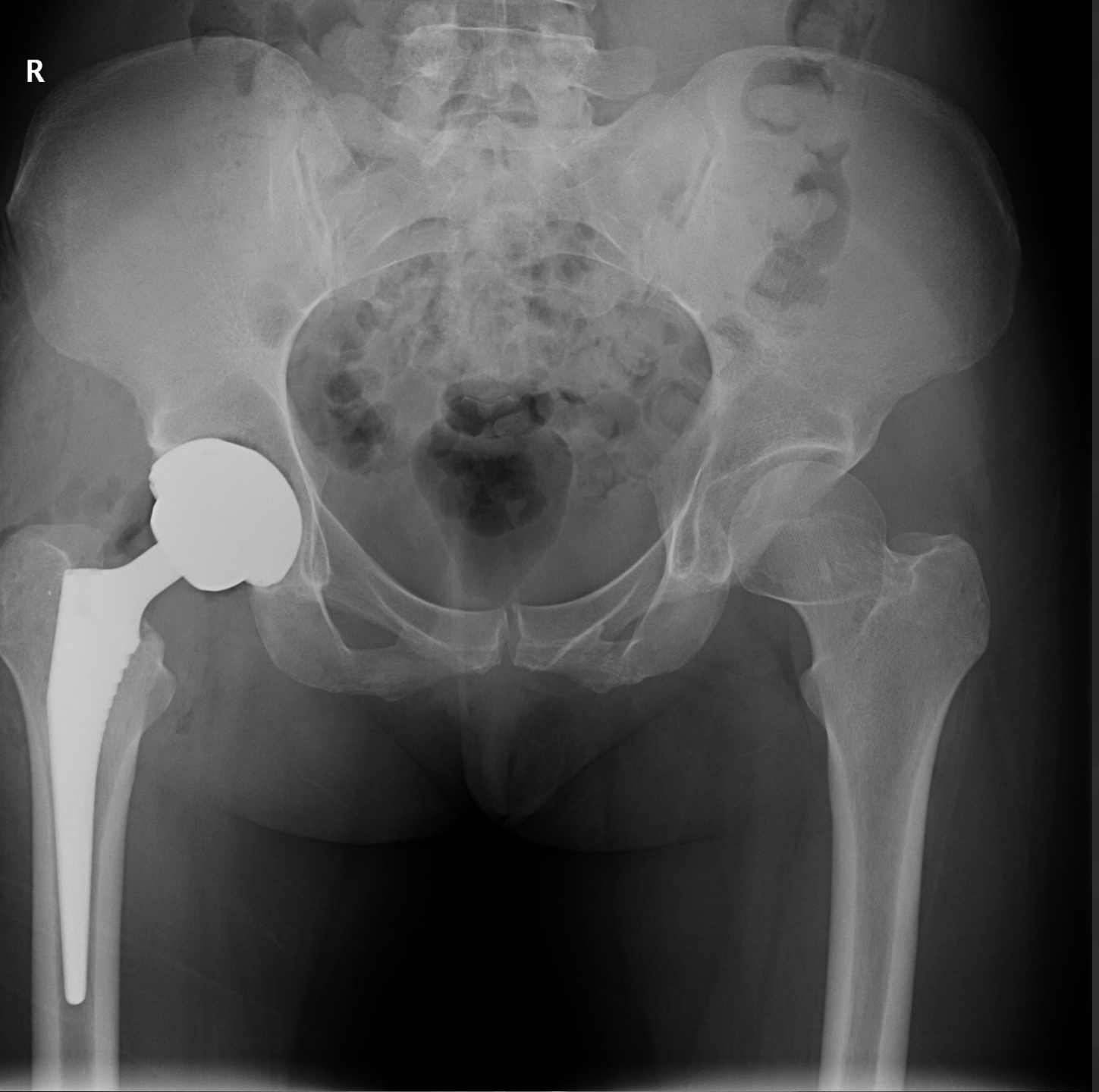
Artroplastia total de cadera



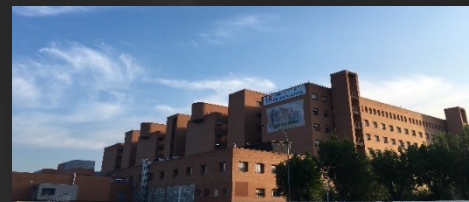
Artroplastia total de cadera







- 2 meses postop.
- Asintomática.
- “Feliz” trabajando y con su familia.



Take Home Message

1. La inestabilidad iatrogénica de la cadera tras una artroscopia es un problema de difícil diagnóstico y tratamiento.

2. Es muy importante una indicación adecuada y una técnica quirúrgica cuidadosa.

3. “Cuidar” la cápsula y repararla

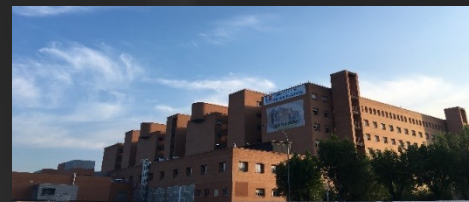
   ¿ SIEMPRE ?

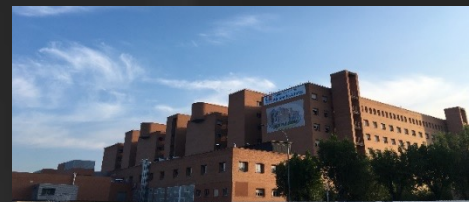
4. En ocasiones hay que tomar decisiones difíciles de resultado incierto…

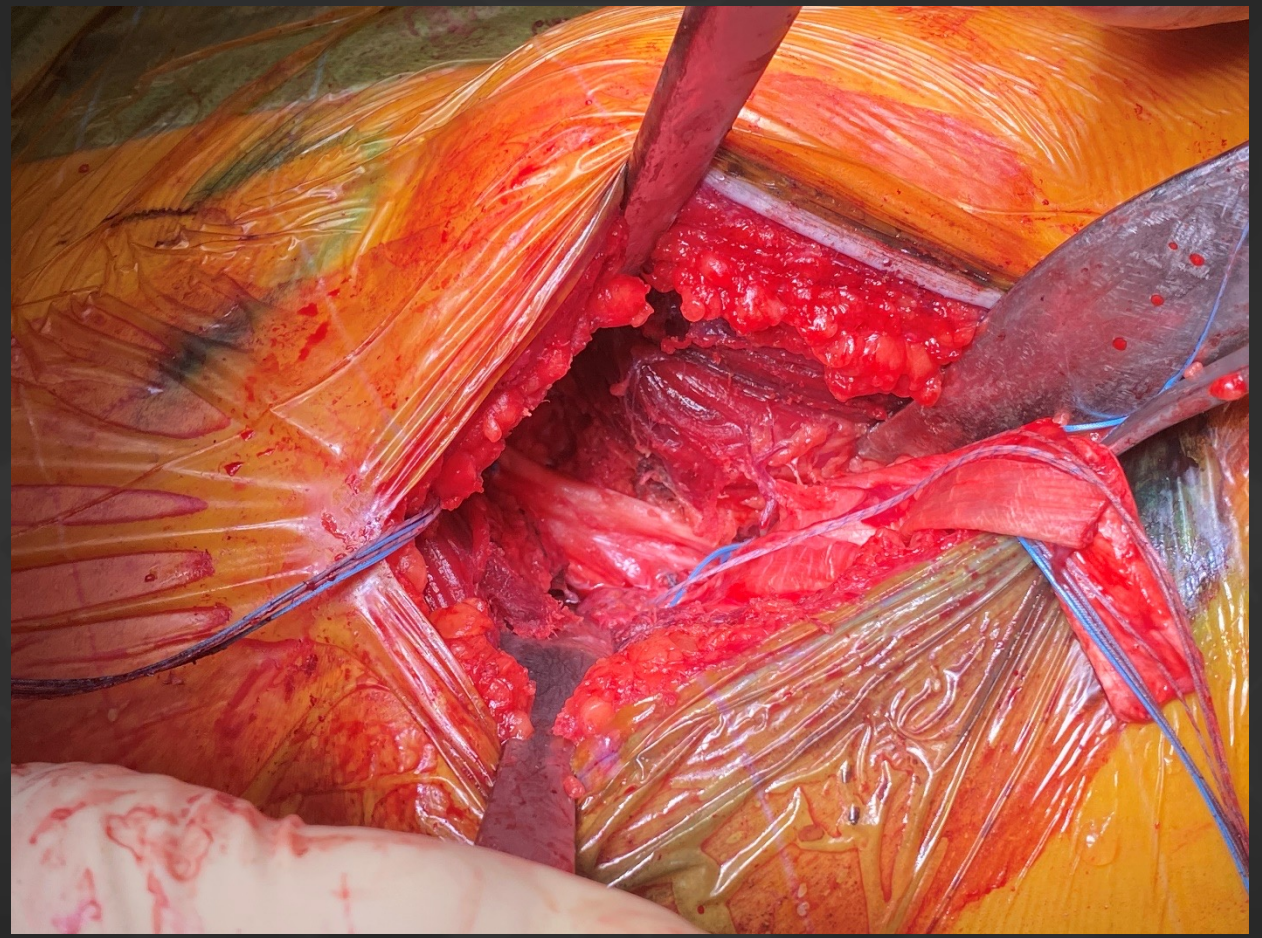


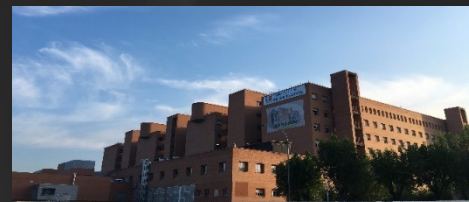


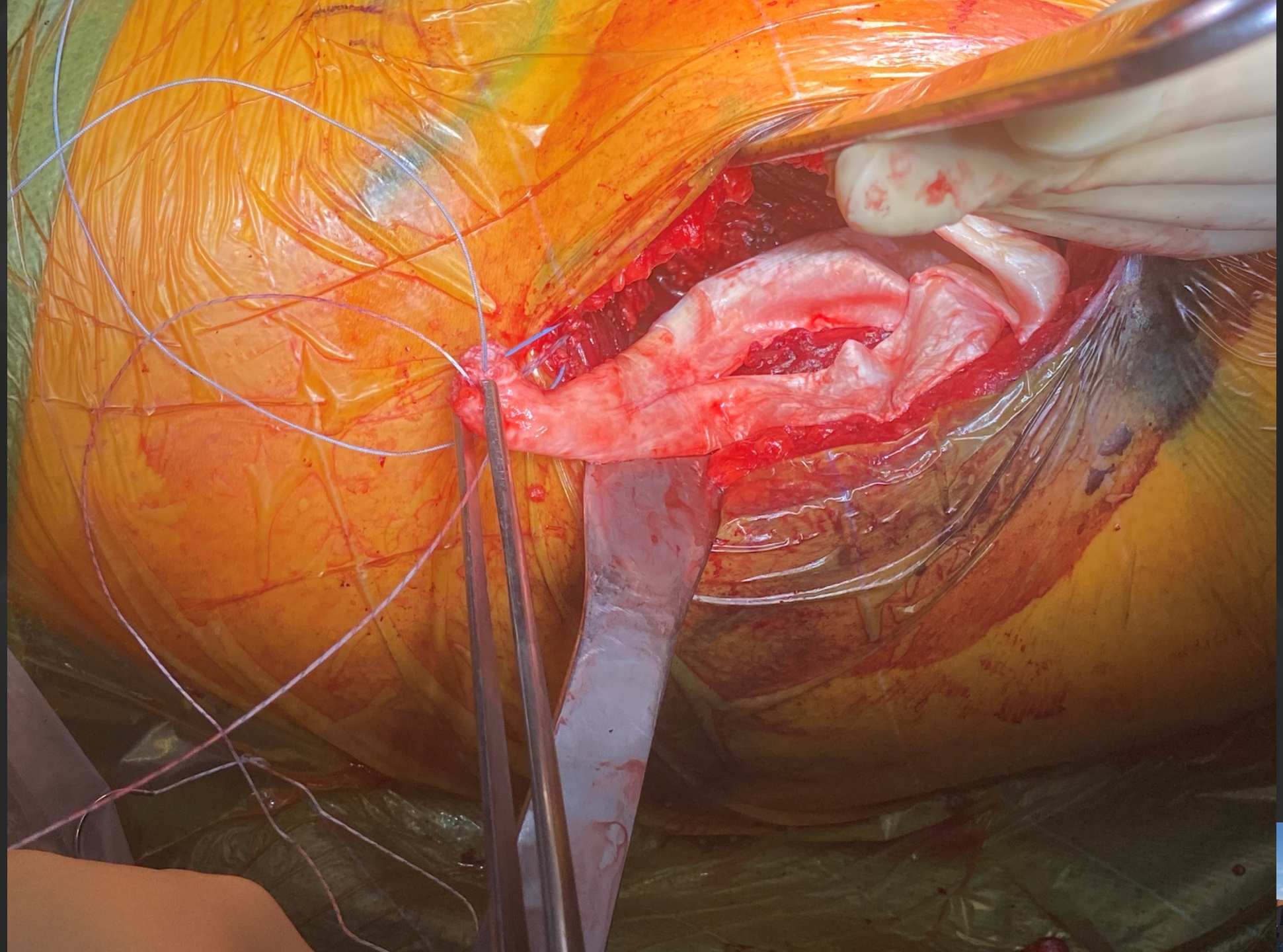

Muchas gracias

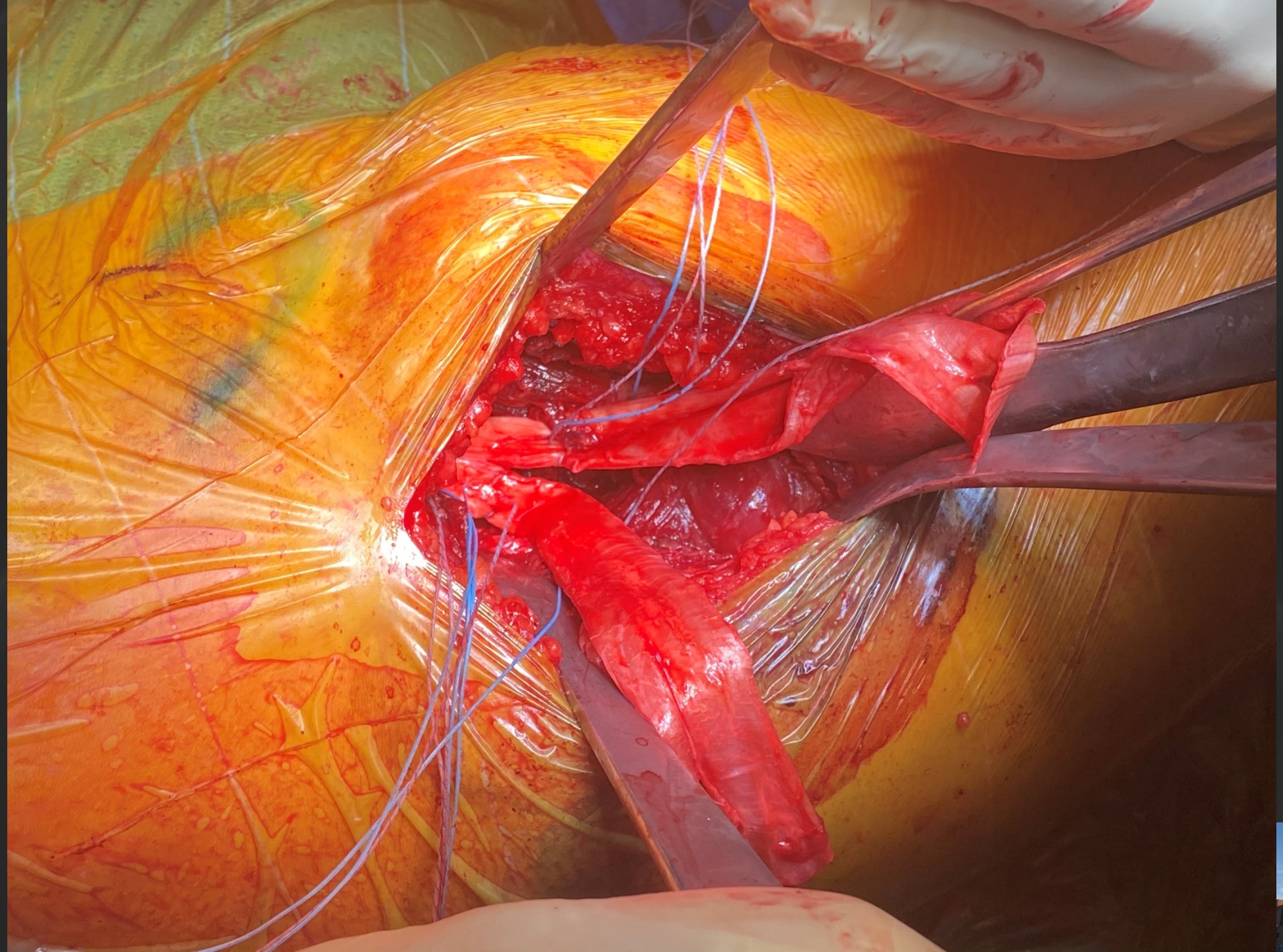


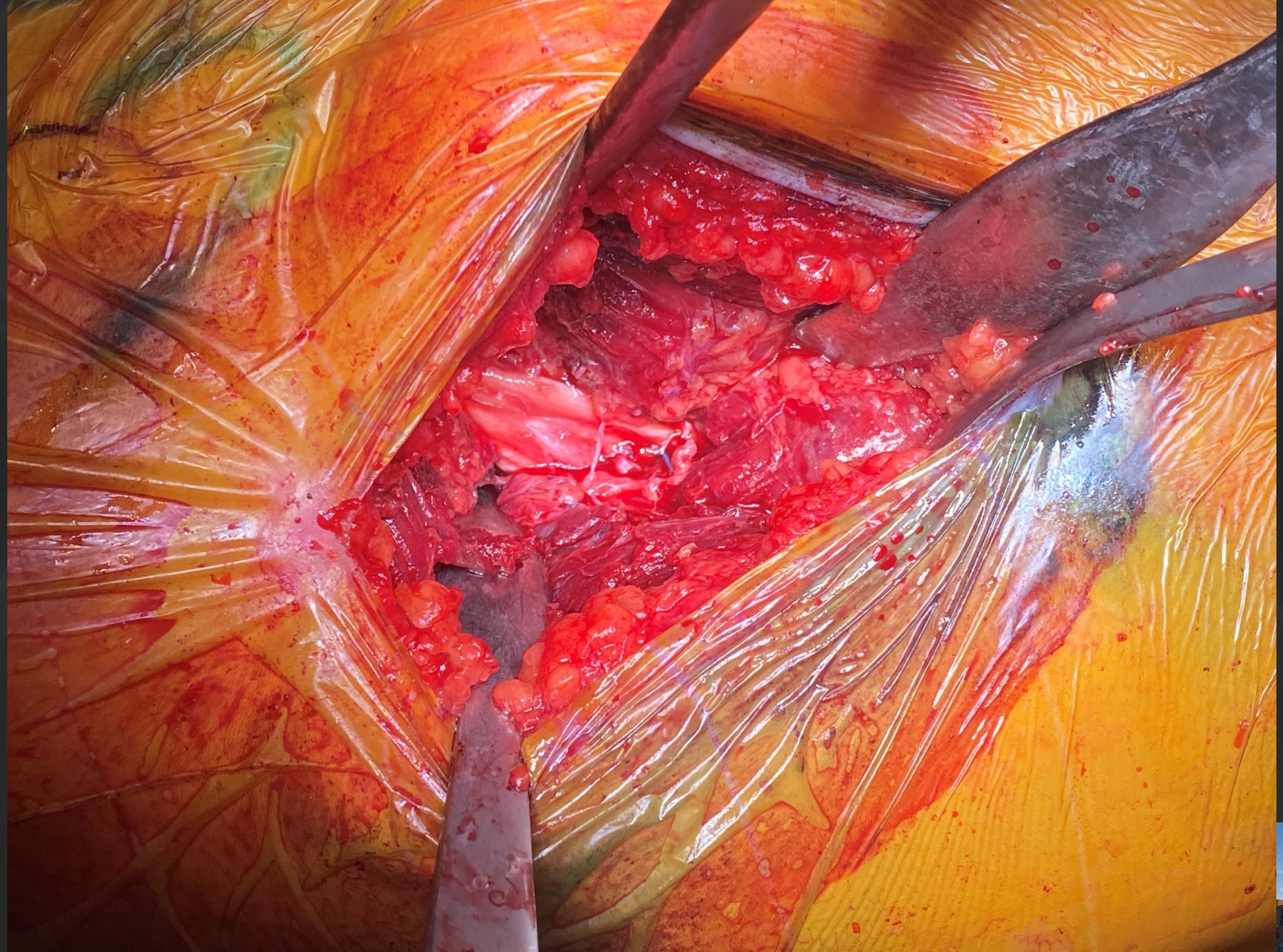


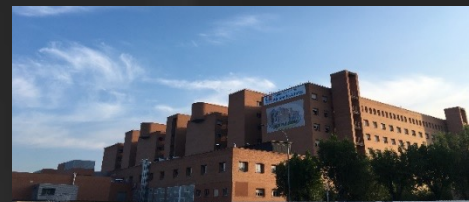












Orthopaedic Journal of Sports Medicine

Contributions of the Capsule and Labrum to Hip Mechanics in the Context of Hip Microinstability

Adam M. Johannsen,* MD, Leandro Ejnisman,*† MD, PhD, Anthony W. Behn,* MS, Kotaro Shibata,* MD, Timothy Thio,* MS, and Marc R. Safran,*‡ MD

Investigation performed at Department of Orthopaedic Surgery, Stanford University, Redwood City, California, USA

Background: Hip microinstability and labral pathology are commonly treated conditions with increasing research emphasis. To date, there is limited understanding of the biomechanical effects of the hip capsule and labrum on controlling femoral head motion.

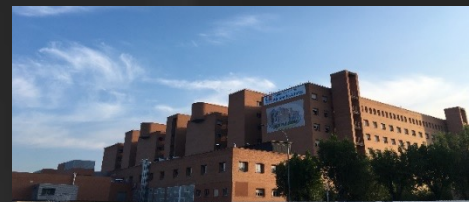
Purpose/Hypothesis: The purpose of this study was to determine the relative role of anterior capsular laxity and labral insufficiency in atraumatic hip microinstability. Our hypotheses were that (1) labral tears in a capsular intact state will have a minimal effect on femoral head motion and (2) the capsule and labrum work synergistically in controlling hip stability.

Study Design: Controlled laboratory study.

Methods: Twelve paired hip specimens from 6 cadaveric pelvises (age, 18-41 years) met the inclusion criteria. Specimens were stripped of all soft tissue except the hip capsule and labrum, then aligned, cut, and potted using a custom jig. A materials testing system was used to cyclically stretch the anterior hip capsule in extension and external rotation, while rotating about the mechanical axis of the hip. Labral insufficiency was created with a combined radial and chondrolabral tear under direct visualization. A motion tracking system was used to record hip internal-external rotation and displacement of the femoral head relative to the acetabulum in the anterior-posterior, medial-lateral, and superior-inferior directions. Testing variables included baseline, postventing, postcapsular stretching, and postlabral insufficiency.

Results: When comparing the vented state with each experimental pathologic state, increases in femoral head motion were noted in both the capsular laxity state and the labral insufficiency state. The combined labral insufficiency and capsular laxity state produced statistically significant increases ($P < .001$) in femoral head translation compared with the vented state in all planes of motion.

Conclusion: Both the anterior capsule and labrum play a role in hip stability. In this study, the anterior hip capsule was the primary stabilizer to femoral head translation, but labral tears in the setting of capsular laxity produced the most significant increases in femoral head translation.



Iatrogenic Hip Instability After Hip Arthroscopy: Is There a Role for Open Capsular Reconstruction?

A Case Report

Max Gehrman, MD, Max Cornell, BS, and Mark Seeley, MD

Investigation performed at Geisinger Medical Center, Danville, Pennsylvania

Technical Notes

Capsular Plication for Treatment of Iatrogenic Hip Instability

David M. Levy, M.D., Jeffrey Grzybowski, B.A., Michael J. Salata, M.D., Richard C. Mather III, M.D., Stephen K. Aoki, M.D., and Shane J. Nho, M.D., M.S.

Clinical and Radiographic Presentation of Capsular Iatrogenic Hip Instability After Previous Hip Arthroscopy

Dillon C. O'Neill,* MD, Alexander J. Mortensen,† BS, Peter C. Cannamela,† BS, and Stephen K. Aoki,*‡ MD
Investigation performed at the University of Utah, Salt Lake City, Utah, USA

Background: The clinical and radiographic features of iatrogenic hip instability following hip arthroscopy have been described. However, the prevalence of presenting symptoms and associated imaging findings in patients with hip instability has not been reported.

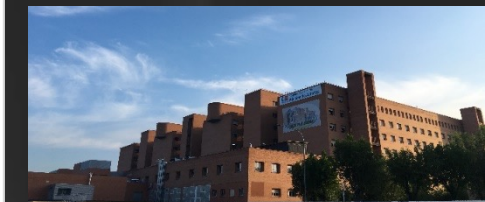
Purpose: To detail the prevalence of clinical and magnetic resonance arthrogram (MRA) findings in a cohort of patients with isolated hip instability and to determine midterm patient-reported outcomes in this patient population.

Study Design: Case series; Level of evidence, 4.

Methods: We retrospectively reviewed patients from 2014 to 2016 who underwent an isolated capsular repair in the revision hip arthroscopy setting. Patients were excluded if they underwent any concomitant procedures, such as labral repair, reconstruction, femoral osteoplasty, or any other related procedure. Several clinical data points were reviewed, including painful activities, mechanical symptoms, subjective instability, Beighton scores, axial distraction testing (pain, toggle, and apprehension), and distractibility under anesthesia. Patient-reported outcomes—including modified Harris Hip Score, Hip Outcome Score–Sports Subscale, Patient-Reported Outcome Measurement Information System (PROMIS) Physical Function Computer Adaptive Test, and a return patient hip questionnaire—were collected pre- and postoperatively. Pre-revision radiographs were obtained, and lateral center-edge angle and alpha angle were measured on anteroposterior and frog-leg lateral views, respectively. Pre-revision MRAs were reviewed and evaluated for capsular changes. Capsular changes were defined as follows: 0, normal; 1, capsular redundancy; 2, focal capsular rent; and 3, gross extravasation of fluid from the capsule.

Results: A total of 31 patients met inclusion criteria (5 male, 26 female; 14 right and 17 left hips). The mean age of patients was 36 years (range, 20-58 years). Overall, 27 (87%) reported hip pain with activities of daily living, and 31 (100%) experienced pain with sports or exercise. In addition, 24 (77%) had at least 1 positive finding on axial distraction testing. All patients had evidence of capsular changes on review of pre-revision MRAs. Out of 31 patients, 23 (74%) were available for follow-up at a minimum of 3.3 years and a mean ± SD of 4.6 ± 0.8 years. On average, modified Harris Hip Score improved by 20.3, Hip Outcome Score–Sports Subscale by 25.1, and PROMIS Physical Function Computer Adaptive Test by 6.4. Additionally, 20 (87%) patients reported improved or much improved physical ability, and 18 (78%) reported improved or much improved pain.

Conclusion: The current study suggests that patients with hip instability demonstrate high rates of pain with activities of daily living and exercise, positive findings on axial distraction testing, and evidence of capsular changes on magnetic resonance imaging. Furthermore, these patients improve with revision surgery for capsular repair at midterm follow-up.



Arthroscopic Capsular Repair for Symptomatic Hip Instability After Previous Hip Arthroscopic Surgery

James D. Wylie,* MD, MHS, James T. Beckmann,† MD, MS,
Travis G. Maak,* MD, and Stephen K. Aoki,*‡ MD
Investigation performed at the Department of Orthopaedic Surgery, University of Utah, Salt Lake City, Utah, USA

Background: Management of the hip capsule has been a topic of recent debate in hip arthroscopic surgery. Postoperative instability after hip arthroscopic surgery has been reported and can lead to poor outcomes.

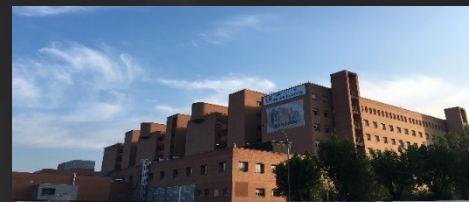
Purpose: To determine the outcome of patients diagnosed with symptomatic instability after hip arthroscopic surgery at a minimum of 12 months and 24 months after revision surgery for capsular repair.

Study Design: Case series; Level of evidence, 4.

Methods: In a cohort of approximately 1100 patients who underwent hip arthroscopic surgery, 33 patients (33 hips) developed symptomatic instability requiring a revision surgery. Two patients suffered anterior dislocations following their initial surgery. Radiographs were reviewed to evaluate for acetabular dysplasia. Three patients were lost to follow-up and 10 patients were excluded as they were <1 year out from the revision surgery. A total of 20 patients (18 female, 2 male) completed a preoperative and postoperative modified Harris Hip Score (mHHS) and Hip Outcome Score (HOS) at a minimum of 12 months. Eleven of these patients had a minimum follow-up of 24 months. All patients filled out a Likert scale of perceived improvement in physical ability at final follow-up.

Results: The mean age of the patients was 29.7 years (range, 15.2-55.5 years). The mean lateral center-edge angle was 25°, and the mean acetabular index was 7° before revision. All patients underwent interportal capsulotomy during the index arthroscopic procedure. After their index arthroscopic procedures, patients had minimal improvement at a mean of 19.1 months postoperatively on the mHHS (from 57.1 to 57.6; $P = .423$), HOS-Activities of Daily Living (ADL) (from 62.7 to 66.4; $P = .260$), and HOS-Sports (from 42.0 to 39.1; $P = .800$). For the patients with a minimum 1-year follow-up after revision surgery (n = 20; mean follow-up, 21.3 months), the mean mHHS (from 57.6 preoperatively to 85.8 at final follow-up; $P < .001$), HOS-ADL (from 66.4 to 85.7; $P < .001$), and HOS-Sports (from 39.1 to 79.8; $P < .001$) all improved significantly. The results were similar when looking at only the patients with a minimum 2-year follow-up after revision surgery (n = 11; mean follow-up, 26.1 months); the mean mHHS (from 56.0 preoperatively to 91.5 at final follow-up; $P = .001$), HOS-ADL (from 68.3 to 89.9; $P = .009$), and HOS-Sports (from 35.7 to 87.9; $P = .001$) all improved significantly. When comparing patients with isolated capsular repair to those with additional procedures performed, there were no differences between the groups (all $P > .05$). At final follow-up, all but 1 patient had improved overall physical ability levels.

Conclusion: Revision hip arthroscopic surgery for capsular repair in patients with symptomatic instability after hip arthroscopic surgery provides good functional outcomes at a minimum of 1 and 2 years postoperatively.



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HIP/FAI (A ZHANG AND Y-M YEN, SECTION EDITORS)

Check for updates

Hip Capsular Deficiency—A Cause of Post-Surgical Instability in the Revision Setting Following Hip Arthroscopy for Femoroacetabular Impingement

Alexander J. Mortensen[1] · Allan K. Metz[1] · Devin L. Froerer[2] · Stephen K. Aoki[1]

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