L'arthroscopie de hanche

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Hôpital privé Jean Mermoz, Lyon

Introduction

- Véritable essor depuis 15 ans en rapport avec la découverte de nouvelles indications (conflit de hanche: chirurgie préventive de l'arthrose)

- Développement qui reste confidentiel en France
  - Matériel spécifique nécessaire
  - Learning curve

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HEALTH | THE ATHLETE'S PAIN

Hip Procedure Grows Popular Despite Doubt

By GINA KOLATA NOV. 15, 2011

It is one of the most popular operations in sports medicine. It comes in various forms, all with the same name: Hip impingement or bone shaving surgery. World-renowned athletes have had the operation — the Yankees' third baseman Alex Rodriguez had it about two years ago and the sprinter Tyson Gay had it last summer.

But some sports medicine researchers are asking: where is the evidence that shaving bone helps? Might the bumps or irregular shapes they call impingement be just normal variations? Does the shaved bone grow back?

Indications

Lésions du labrum/cartilage du sujet jeune
- -Conflit de hanche ++++
- -Dysplasie limites (micro instabilité de hanche)

>80% des indications

Pathologie du moyen fessier: La « coiffe » de la hanche

Ressauts de hanche (coxa saltans, ressaut du psoas)

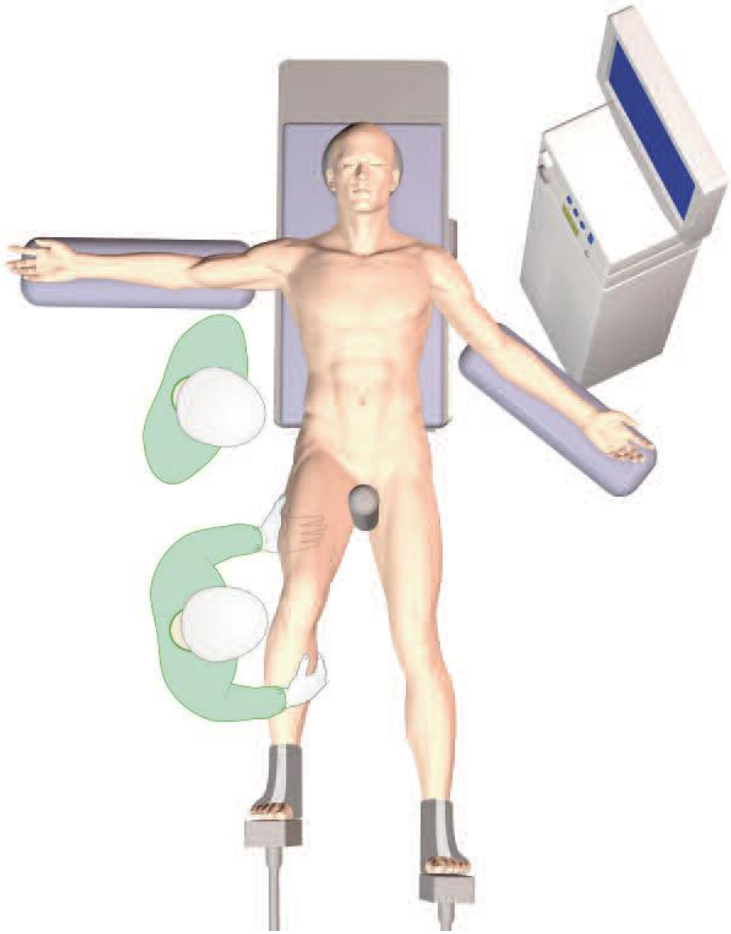
Prothèses de hanche douloureuses (calcifications, ténotomie du psoas)

>95% des indications

Les indications traditionnelles (chondomatose, SVN, corps étrangers, biopsies ….)

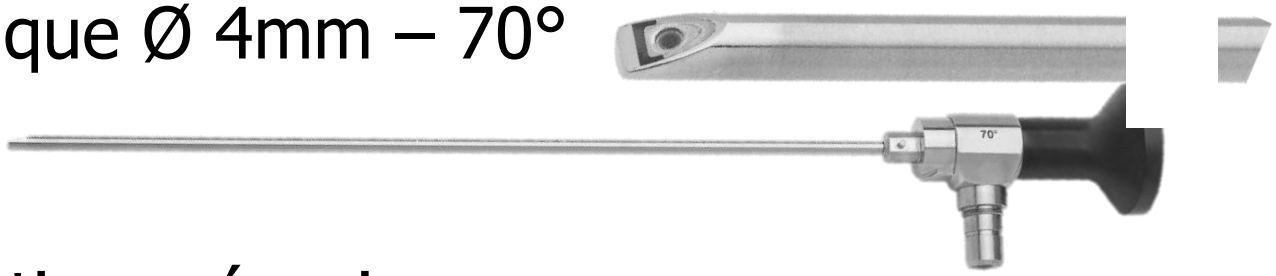
Arthroscopie de hanche - équipement

Distracteur de hanche



Arthroscopie de hanche- équipement

- Colonne d’arthroscopie - 4K
- Optique Ø 4mm – 70°

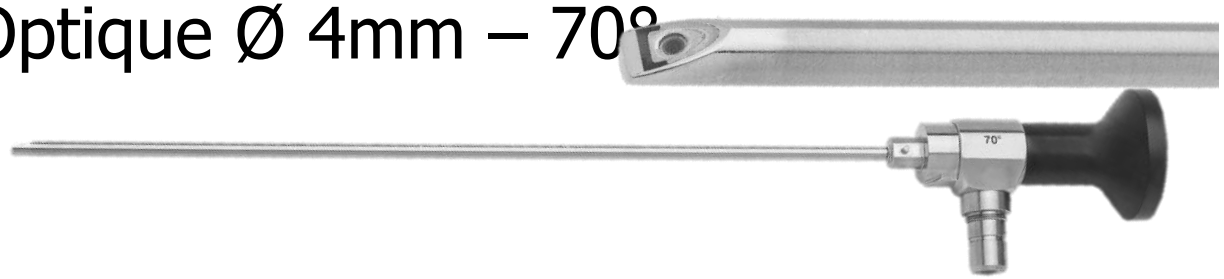


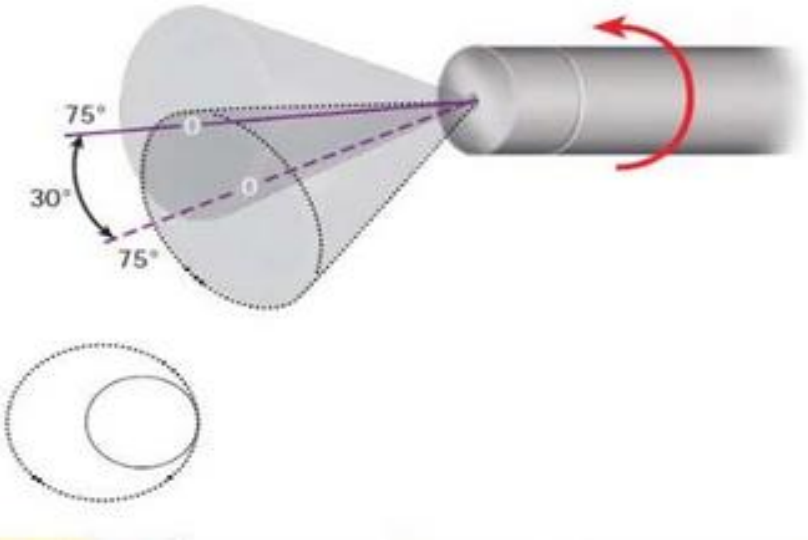
- Ablation mécanique
  - Couteau de Shaver Ø 4 mm
  - Fraise

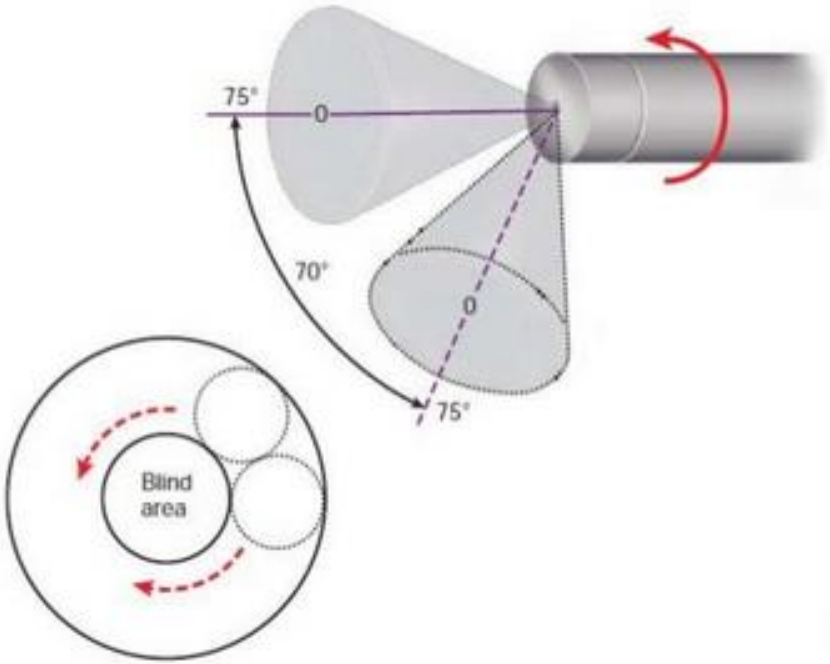
- Ablation chimique RF
  - Electrode Apollo 50°

Arthroscopie de hanche- équipement

- Colonne d’arthroscopie - 4K
- Optique Ø 4mm – 70°

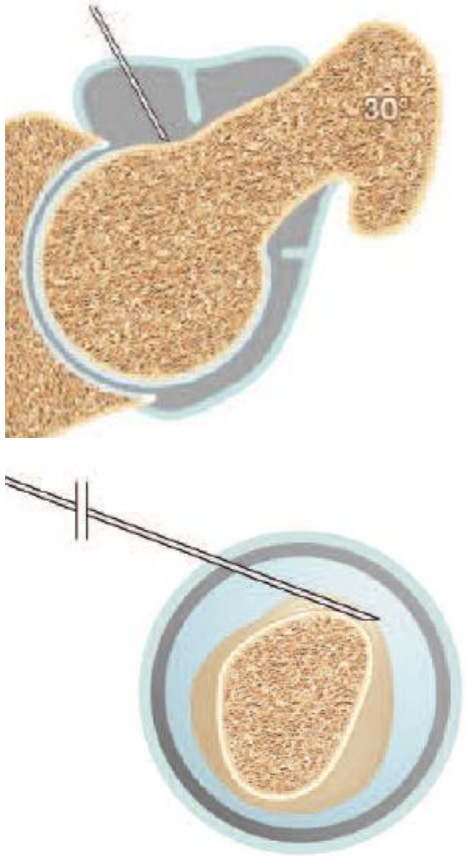




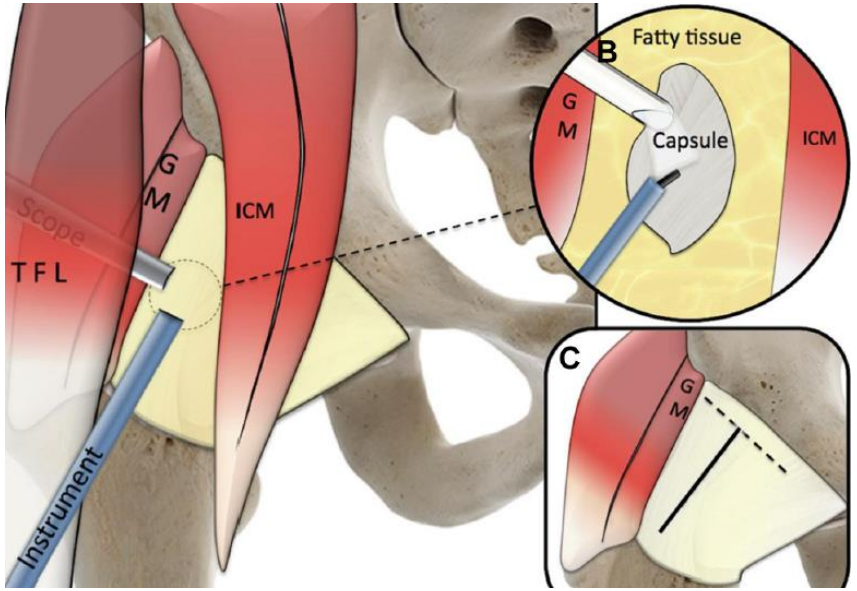


Le matériel pour se lancer en arthro de Hanche

Compartiment central – 1er – système de dilatateurs



Articulation périphérique 1ère : entrée à 30° de flexion

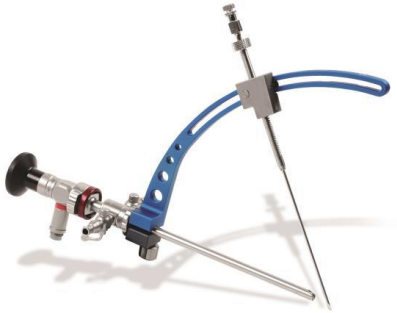


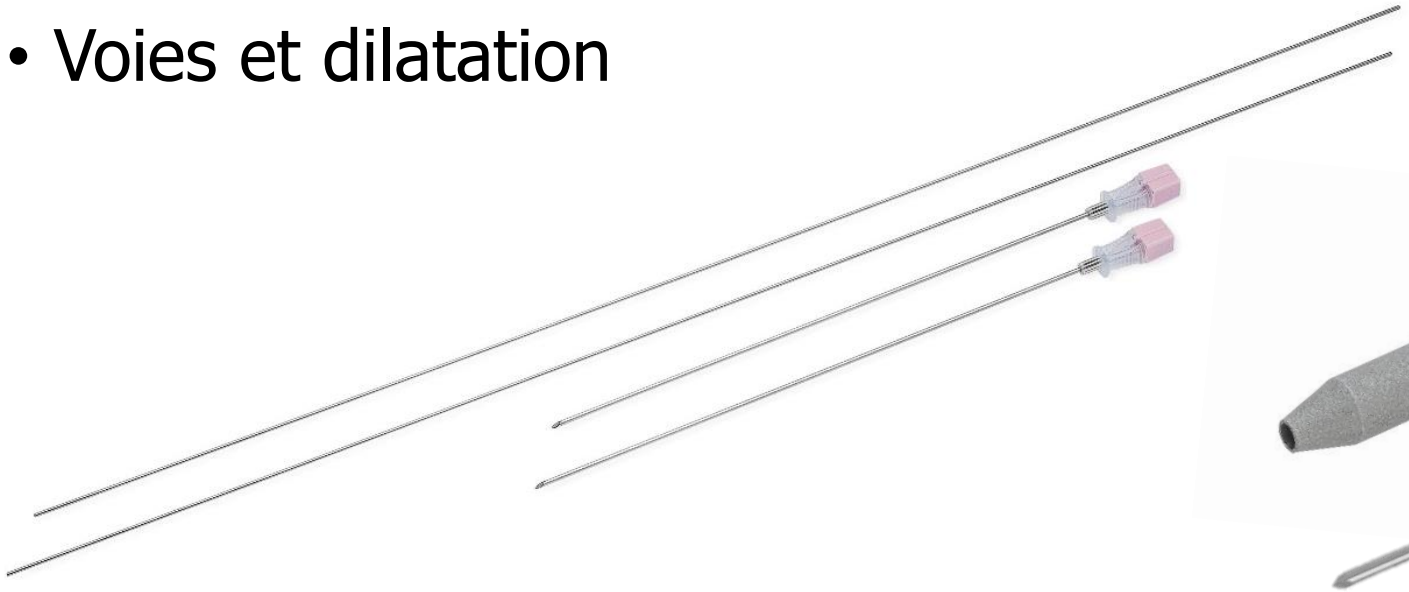
Capsulotomie première

Entrée dans l'articulation sous contrôle visuel

Arthroscopie de hanche - ancillaire

- Voies et dilatation

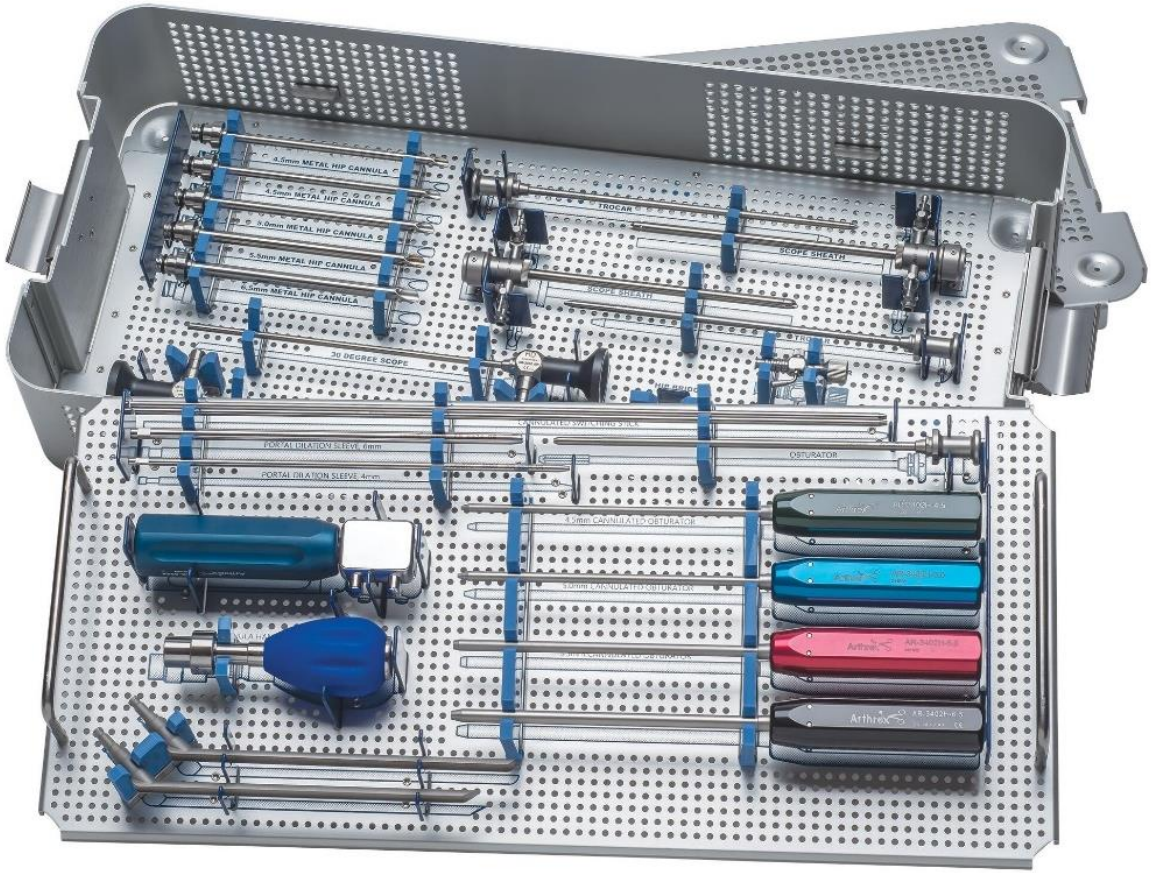


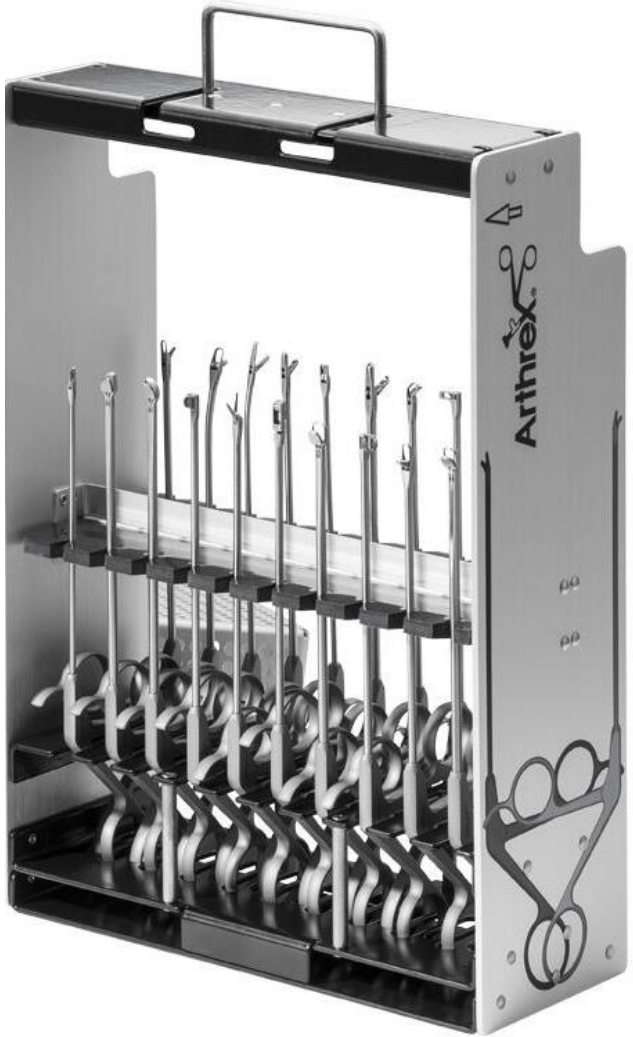


Arthroscopie de hanche - ancillaire

- Changement de voies

Arthroscopie de hanche - ancillaire





Le matériel pour se lancer en arthro de Hanche

Capsulotomy First: A Novel Concept for Hip Arthroscopy

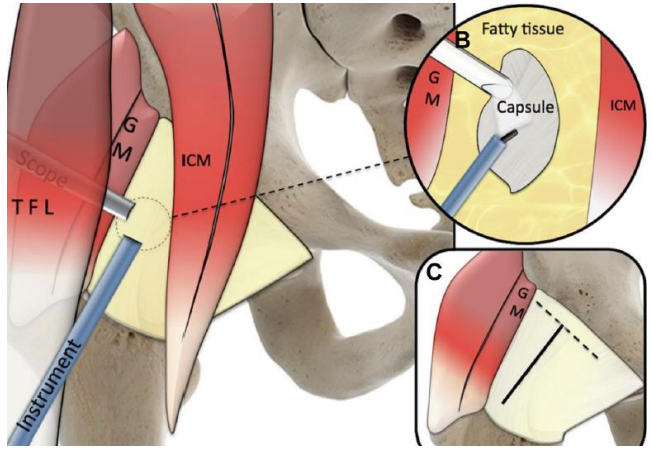
Mathieu Thaunat, M.D., Colin G. Murphy, M.D., Romain Chatellard, M.D., Bertrand Sonnery-Cottet, M.D., Nicolas Graveleau, M.D., Alain Meyer, M.D., and Frédéric Laude, M.D.

Arthroscopy
The Journal of Arthroscopic and Related Surgery
Arthroscopy Techniques
AANA | ARTHROSCOPY ASSOCIATION OF NORTH AMERICA

Abstract: Capsulotomy during hip arthroscopy improves the mobility of arthroscopic instruments and helps gain greater access to key areas of the hip. During the past decade, its use has expanded dramatically as the complexity of hip arthroscopy has advanced. We report a novel approach for hip arthroscopy that consists of performing an extra-articular capsulotomy under endoscopic control before exploration of the hip joint. The principle of this new concept is to replicate an anterior Hueter approach of the hip joint. We describe the surgical technique and discuss its advantages compared with conventional hip arthroscopy techniques using either a peripheral- or central-compartment starting point. This new approach is easy to master, can be performed with a 30° optic system, does not require fluoroscopic assistance, allows a reduction in both the force and duration of traction, and reduces the risk of labral or chondral damage.

Arthroscopy is increasingly used to address hip pathology. Capsulotomy, which is commonly performed in hip arthroscopy, assists visualization and instrument navigation.[1] Capsulotomy in conjunction with hip arthroscopy is indicated in treating femoroacetabular impingement or when large loose bodies need to be removed from the joint, among other indications. The optimal technique ... electrode. The purpose of this technical note is to describe the surgical steps of this new approach and to discuss its advantages over conventional techniques with either a peripheral- or central-compartment starting point.

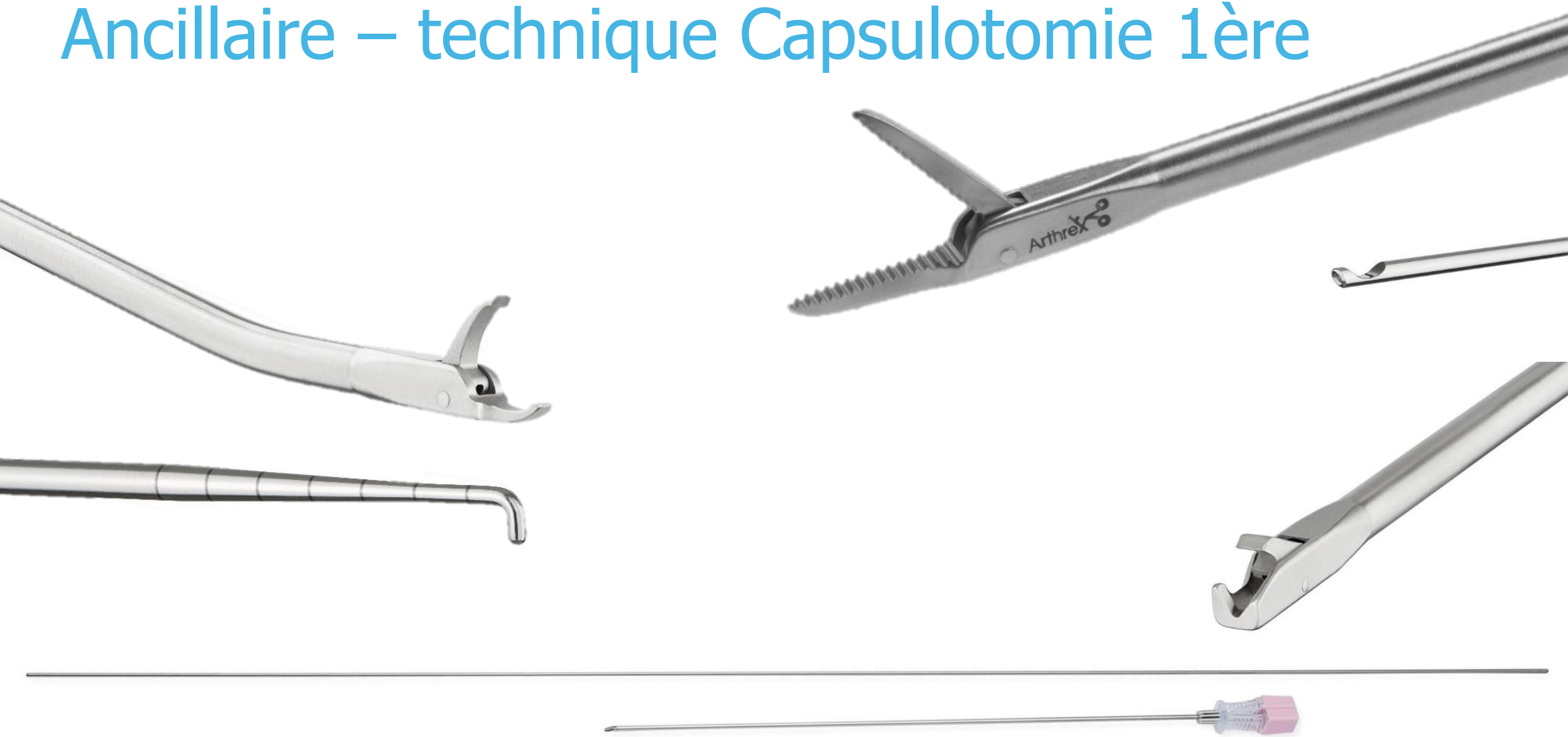
Surgical Technique



*Thaunat M, et al. Femoroacetabular impingement treatment using the **arthroscopic extracapsular outside-in approach**: Does capsular suture affect functional outcome? Orthop Traumatol Surg Res. 2020 May;106(3):569-575.T*

Arthroscopie de hanche - ancillaire

Ancillaire – technique Capsulotomie 1ère



Les passe-fils

Lassos / Crochets

Pinces automatiques

Les instruments spécifiques aux implants

Développer une activité d'arthro de Hanche

- Codage de l'arthroscopie de hanche : arthroscopie + geste osseux associé*

Code CCAM	Geste pratiqué	Rémunération brute
NEMA 021	Acétabuloplastie	315 €
NBFA 003	Fémoroplastie	222 €
NEFC 001	Synovectomie @	289 €
NEQC 001	Exploration @	183 €

- GHM « Autres interventions sur la hanche et le fémur » Patient âgé 17+ ans
  - 2526 €

*Source : Dr Alexis Nogier – Réussir le développement d'une activité d'arthro de hanche – Maitrise orthopédique

Développer une activité d'arthro de Hanche

- Hypothèse :
  - Acétabuloplastie + synovectomie = 315 +(289/2) = 460 € / Complément d'honoraire : 150 €
  - Redevance 15% et recettes hôtelières 10% du GHS
  - Instrumentation : 14 000 € TTC / Optique en contrat de maintenance à 1600 € / an

	Année 1	Année 2	Année 3	Année 4	Année 5
Nb actes	6	15	25	35	50
CA CCAM	2 760	6 900	11 500	16 100	23 000
CA DP	900	2 250	3 750	5 250	7 500
CA Total (Chirurgien)	**3 660**	**9 150**	**15 250**	**21 350**	**30 500**
GHS	15 156	37 890	63 150	88 410	126 300
Redevance	549	1 373	2 288	3 203	4 575
Recettes hôtelières	1 516	3 789	6 315	8 841	12 630
CA Total (clinique)	**17 221**	**43 052**	**71 753**	**100 454**	**143 505**
Instrumentation amortissement	2 800	2 800	2 800	2 800	2 800
Scope 70°	1 600	1 600	1 600	1 600	1 600
Coût matériel	**4 400**	**4 400**	**4 400**	**4 400**	**4 400**

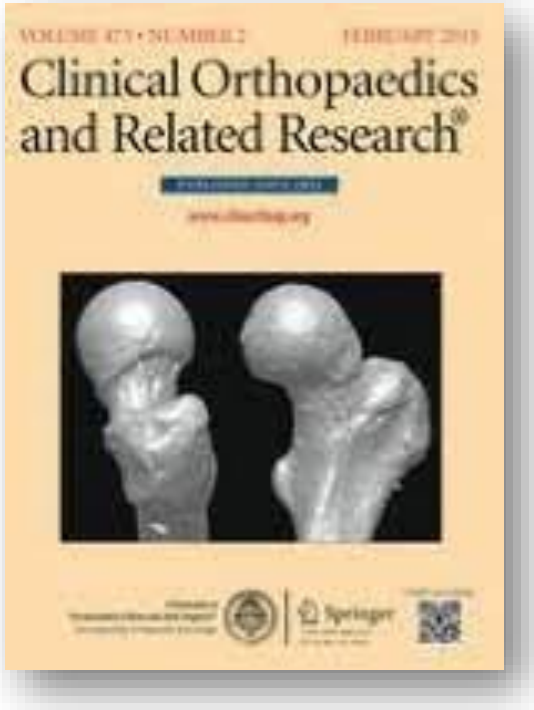
Le conflit fémoro acétabulaire

-Pathologie décrite en 2003

-Cause principale de coxarthrose du sujet jeune

-Sportifs (sports à risque)

-Morphologie prédisposante se développe à l'adolescence (Bump ou Came fémorale)



Femoroacetabular impingement: a cause for osteoarthritis of the hip
Reinhold Ganz[1], Javad Parvizi, Martin Beck, Michael Leunig, Hubert Nötzli, Klaus A Siebenrock, CORR 2003


LIVE

Physiopathologie?

Does high level youth sports participation increase the risk of femoroacetabular impingement? A review of the current literature

Viran de Silva, Michael Swain, Carolyn Broderick and Damien McKay

Pediatric Rheumatology 2016 **14**:16 | **DOI:** 10.1186/s12969-016-0077-5 | © de Silva et al. 2016

Received: 23 November 2015 | **Accepted:** 7 March 2016 | **Published:** 11 March 2016

Abstract

Sports participation can be an integral part of adolescent development with numerous positive short and long-term effects. Despite these potential benefits very high levels of physical activity, during skeletal maturation, have been proposed as a possible cause of cam-type femoroacetabular impingement (FAI). The influence of physical activity on the developing physis has been previously described both in animal studies and epidemiological studies of adolescent athletes. It is therefore important to determine whether the development of FAI is secondary to excessive physical activity or a combination of a vulnerable physis and a set level of physical activity. A review of the current literature suggests that adolescent males participating in ice-hockey, basketball and soccer, training at least three times a week, are at greater risk than their non-athletic counterparts of developing the femoral head-neck deformity associated with femoroacetabular impingement.

Physiopathologie?

Loi de Roux: Adaptation de l'os aux contraintes mécaniques qu'il subit

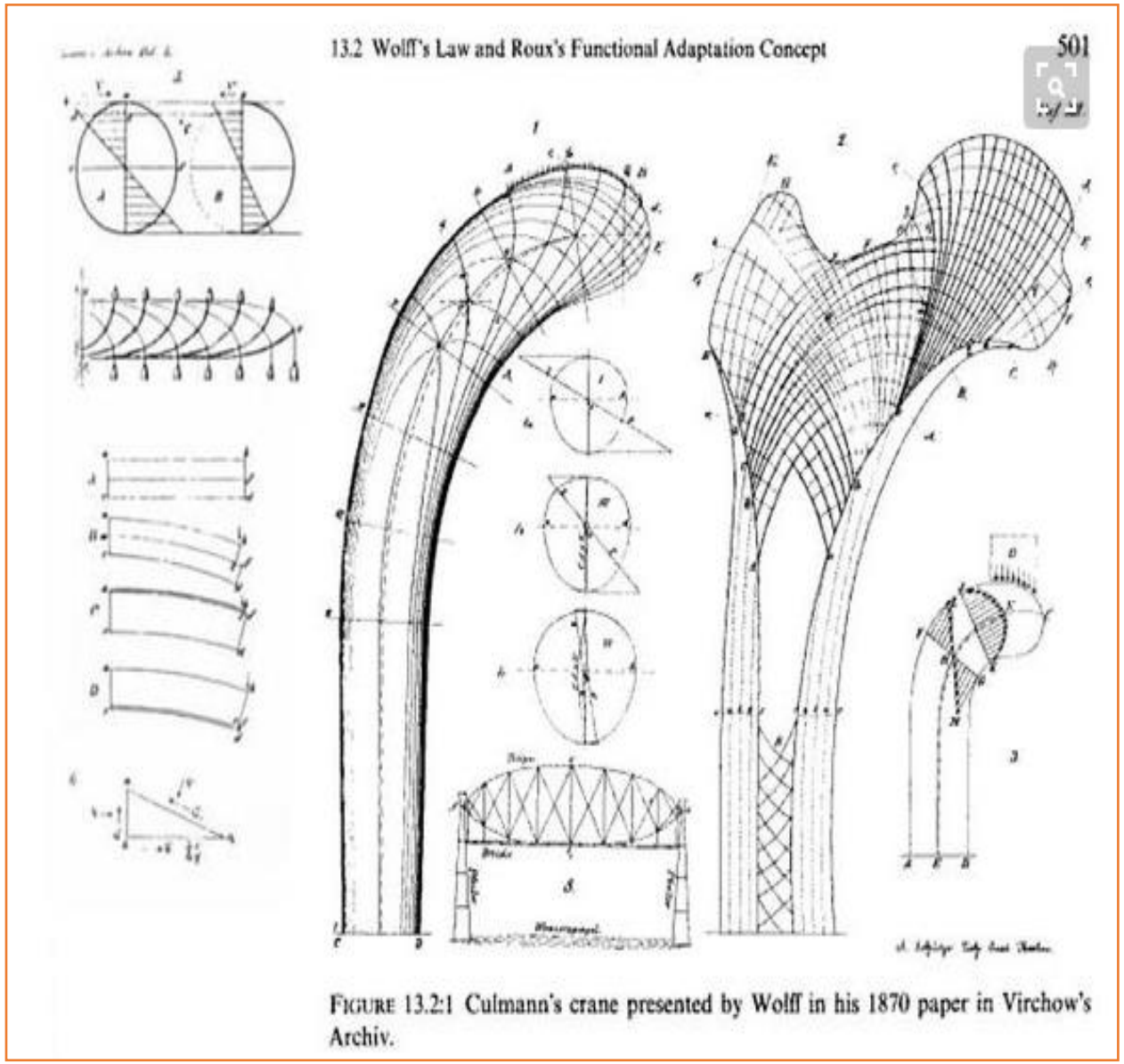
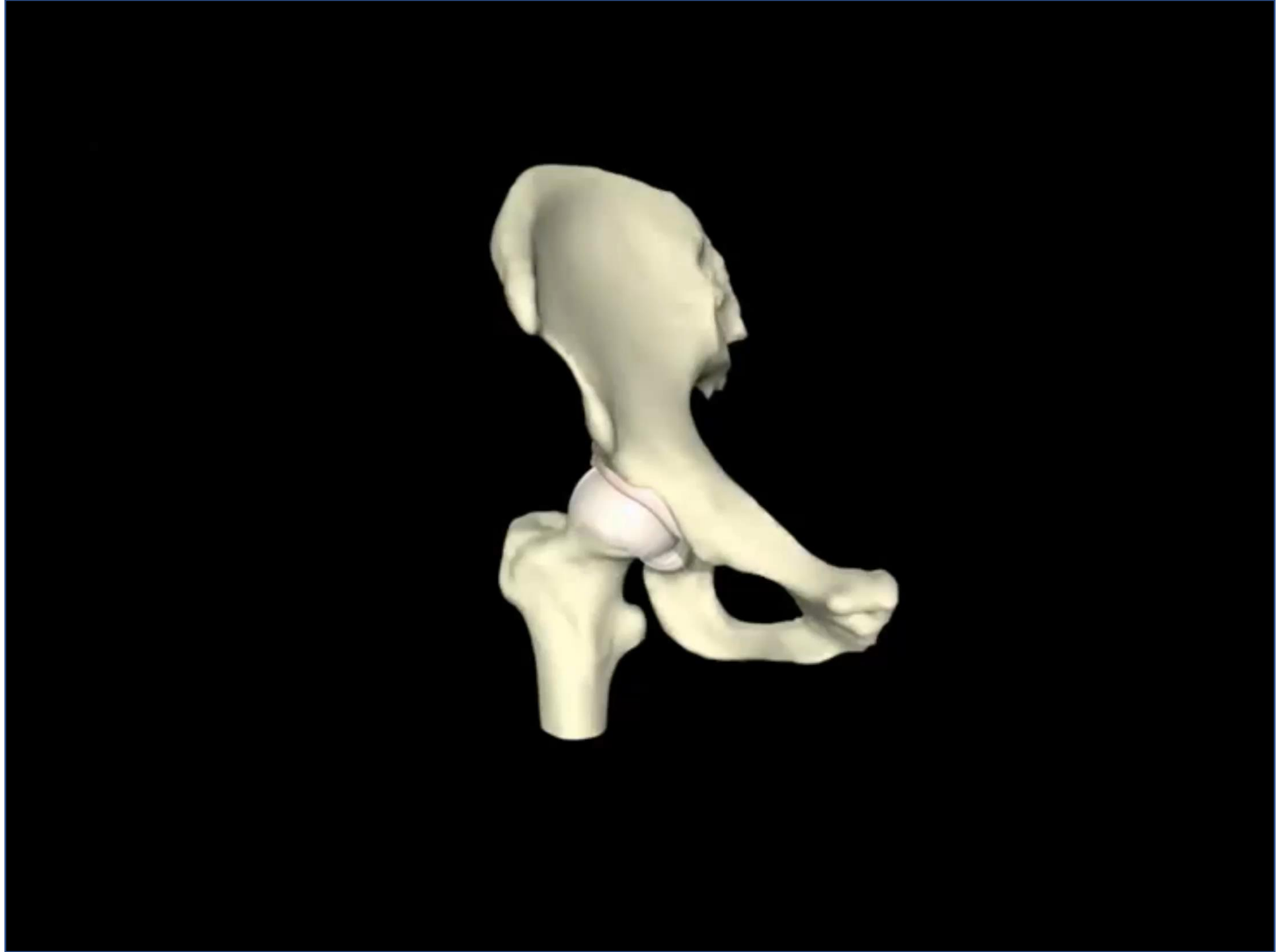
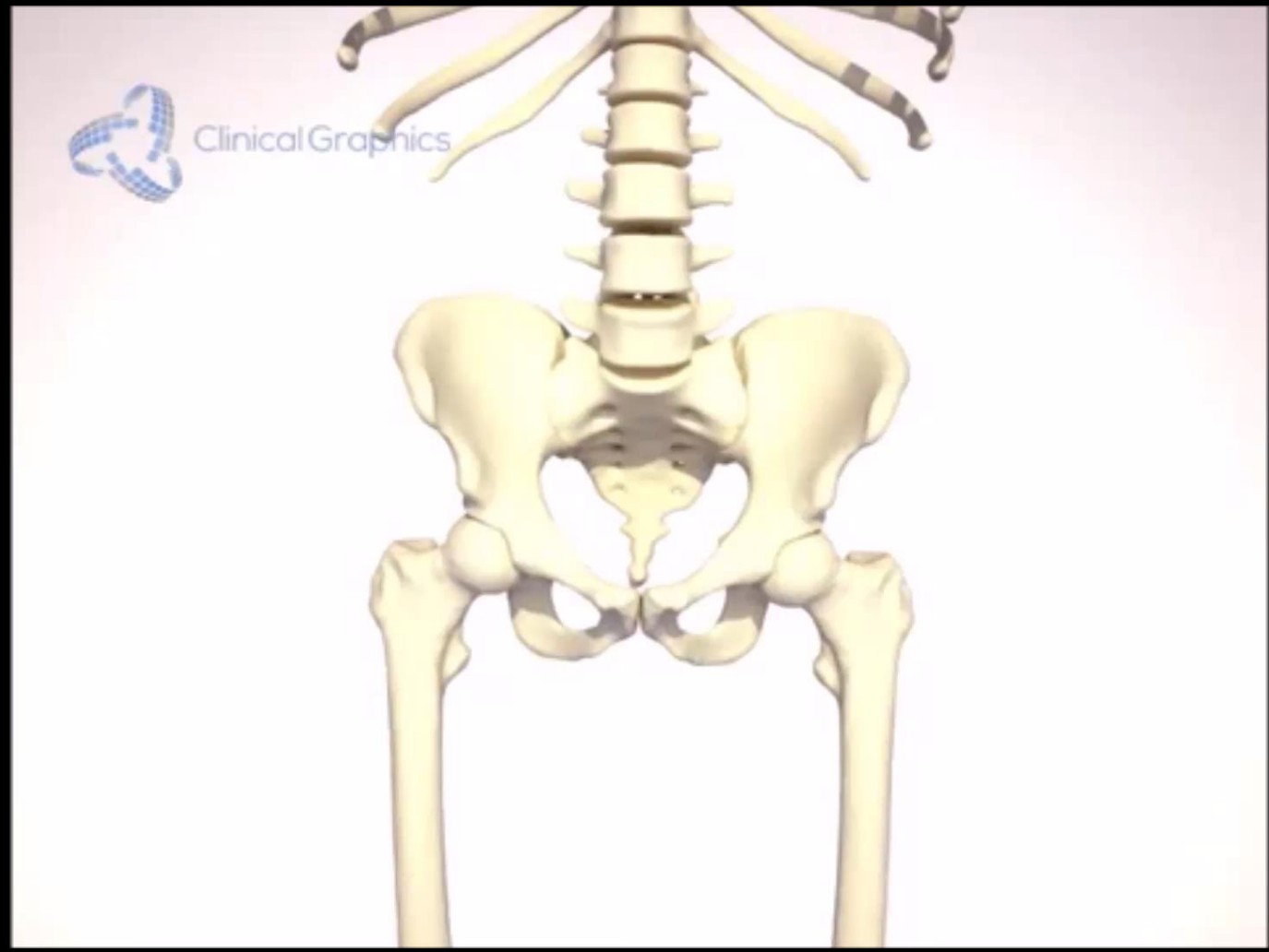


FIGURE 13.2:1 Culmann's crane presented by Wolff in his 1870 paper in Virchow's Archiv.




Clinical Graphics

Signes fonctionnels

-Douleurs inguinales +/- grand trochanter (C sign)

-Sportifs (sports à risque)

-sièges bas / flexion importante de la hanche ou station assise prolongée

-craquements, pseudo blocages

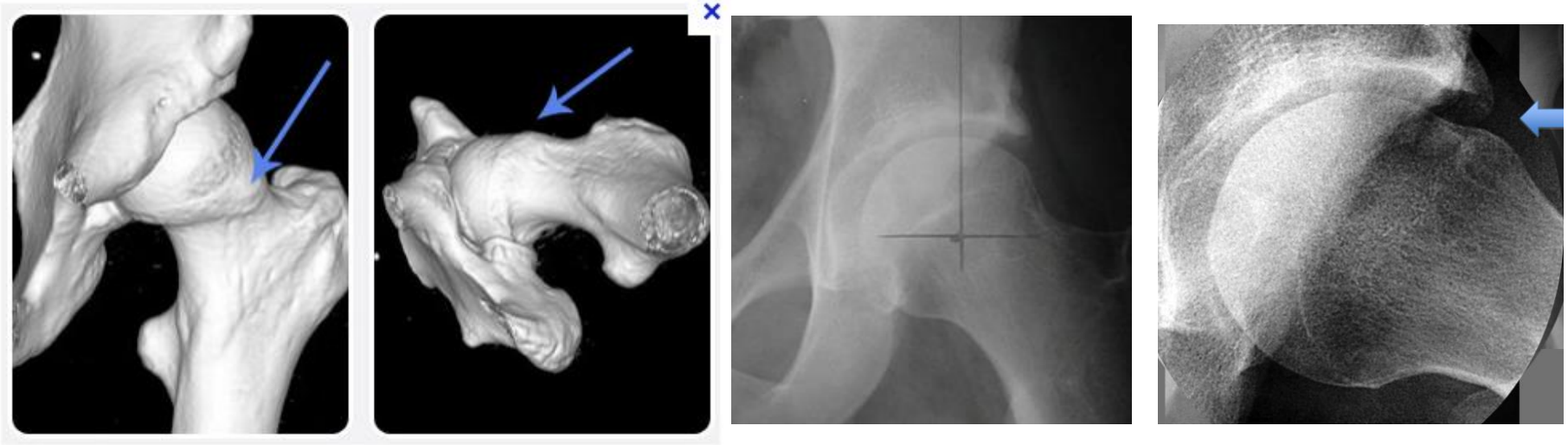
-Marche simple est indolore (limitation pas postérieur)

Signes physiques

Effet CAM: Tête asphérique

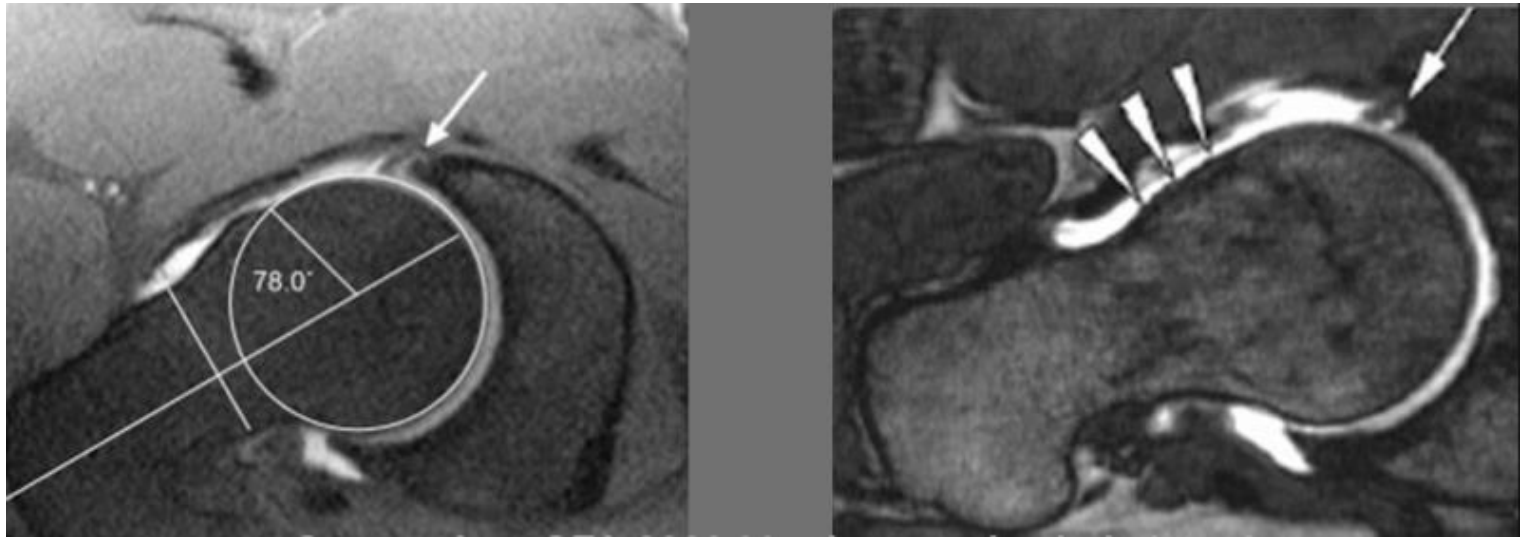
-« Pistol grip deformity »

- pas toujours visible sur la face



Arthro TDM

Lésion causale: angle alpha augmenté
Lésion secondaire: lésion labrale et cartilagineuse



Traitement Médical ?/ Chirurgical?

- **symptômes invalidants malgré un traitement médical** bien conduit
- lésions cartilagineuses ou labrales : évolution naturelle vers la coxarthrose : indication chirurgicale
- Ttt par physiothérapie

⇨ Travail de **stabilité des membres inférieurs** et travail **lombo-pelvien.**

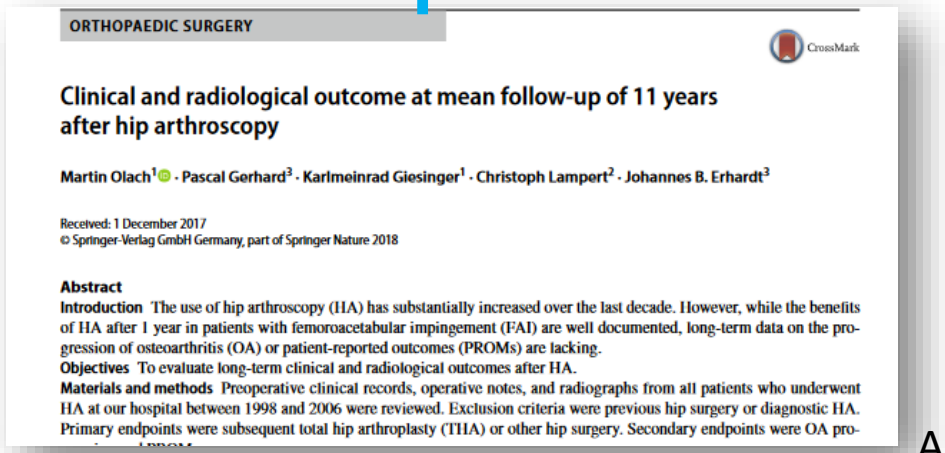
⇨ **Pas de récupération forcée des amplitudes** et prudence pour le psoas.

⇨ **Ttt fonctionnel conservateur ⇨ amélioration de la symptomatologie** mais **résultat < à l'arthroscopie**. Identifier les patients répondant à chacune des 2 options? 1er ttt de choix?

⇨ Compréhension et adhésion du patient à cette rééducation active.

⇨ **Intérêt d'une prise en charge coordonnée** kiné/médecin du sport/chirurgien pour décider de l'option thérapeutique.

Effet préventif sur l'évolution arthrosique?



ORTHOPAEDIC SURGERY

Clinical and radiological outcome at mean follow-up of 11 years after hip arthroscopy

Martin Olach[1] · Pascal Gerhard[3] · Karlmeinrad Giesinger[1] · Christoph Lampert[2] · Johannes B. Erhardt[3]

Received: 1 December 2017
© Springer-Verlag GmbH Germany, part of Springer Nature 2018

Abstract
Introduction The use of hip arthroscopy (HA) has substantially increased over the last decade. However, while the benefits of HA after 1 year in patients with femoroacetabular impingement (FAI) are well documented, long-term data on the progression of osteoarthritis (OA) or patient-reported outcomes (PROMs) are lacking.
Objectives To evaluate long-term clinical and radiological outcomes after HA.
Materials and methods Preoperative clinical records, operative notes, and radiographs from all patients who underwent HA at our hospital between 1998 and 2006 were reviewed. Exclusion criteria were previous hip surgery or diagnostic HA. Primary endpoints were subsequent total hip arthroplasty (THA) or other hip surgery. Secondary endpoints were OA pro-

AOTS 2018

Original Article Clinics in Orthopedic Surgery 2019;11:28-35 • https://doi.org/10.4055/cios.2019.11.1.28

Arthroscopic Repair of Acetabular Labral Tears Associated with Femoroacetabular Impingement: 7–10 Years of Long-Term Follow-up Results

Jae-Won Lee, MD, Deuk-Soo Hwang, MD, Chan Kang, MD, Jung-Mo Hwang, MD, Hyung-Jin Chung, MD

Department of Orthopaedic Surgery, Chungnam National University School of Medicine, Daejeon, Korea

Background: The purpose of this study is to report the long-term follow-up results of arthroscopic repair of acetabular labral tears with femoroacetabular impingement (FAI).
Methods: Of 45 patients who underwent arthroscopic labral repair under the diagnosis of acetabular labral tears with FAI from January 2008 to December 2010 and met our inclusion criteria, 41 patients who were available for a long-term follow-up were included in the analysis. We compared the long-term follow-up results with the previously reported short-term follow-up results of the same patients. The mean follow-up period was 92.4 months (range, 85 to 117 months). There were 21 males and 20 females, and their mean age at surgery was 34.6 years (range, 16 to 54 years). A modified Harris hip score (mHHS), visual analog scale (VAS), hip outcome score-activity of daily living (HOS-ADL), hip outcome score-activity-sport-specific subscale (HOS-SSS), and patient satisfaction were used for evaluation of the clinical results and Tönnis grade for detection of early osteoarthritis (OA).

Clinical orthopaedics 2019

Stabilité de la hanche: le LABRUM

Joint circonférentiel dont le rôle au sein de l'articulation est fondamental.

-Il joue un rôle important dans l'amortissement de la hanche lors de la mise en charge

-Aide également à sa stabilisation lors de la phase d'oscillation du pas: Joint d'étanchéité qui crée une dépression dans la cavité acétabulaire limitant passivement la décoaptation

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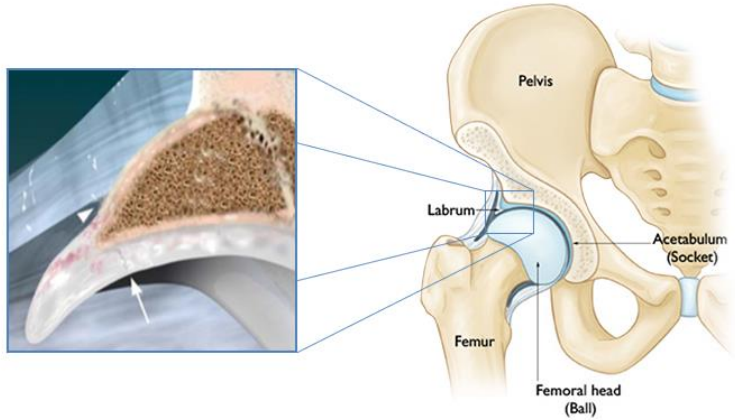
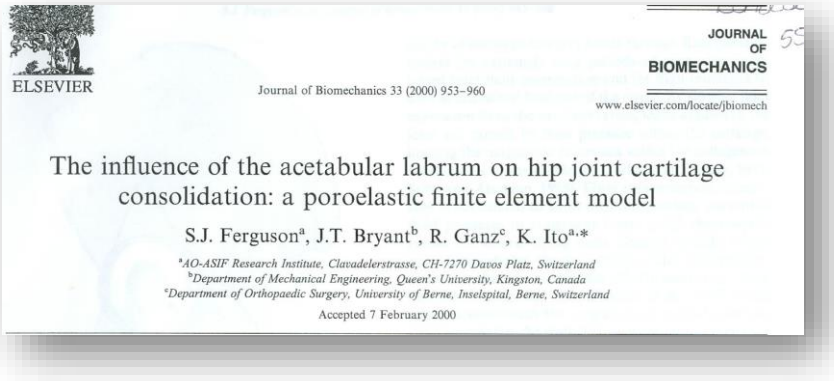



ELSEVIER

Journal of Biomechanics 33 (2000) 953–960

JOURNAL OF BIOMECHANICS

www.elsevier.com/locate/jbiomech

The influence of the acetabular labrum on hip joint cartilage consolidation: a poroelastic finite element model

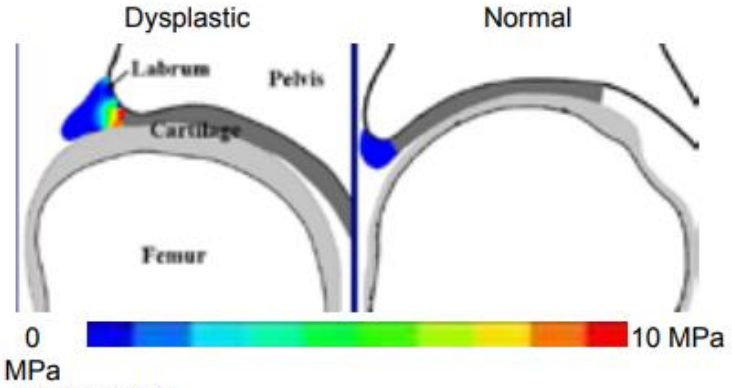
S.J. Ferguson[a], J.T. Bryant[b], R. Ganz[c], K. Ito[a,*]

[a]AO-ASIF Research Institute, Clavadelerstrasse, CH-7270 Davos Platz, Switzerland
[b]Department of Mechanical Engineering, Queen's University, Kingston, Canada
[c]Department of Orthopaedic Surgery, University of Berne, Inselspital, Berne, Switzerland

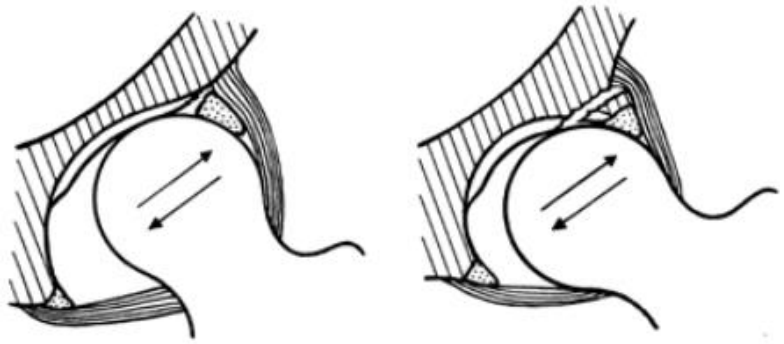
Accepted 7 February 2000

Instabilité de la hanche

Findings: Compared to normal hips, the labrum in dysplastic hips supported a larger percentage of total load transferred to the hip[1]



Henak. J Biomech 2012.



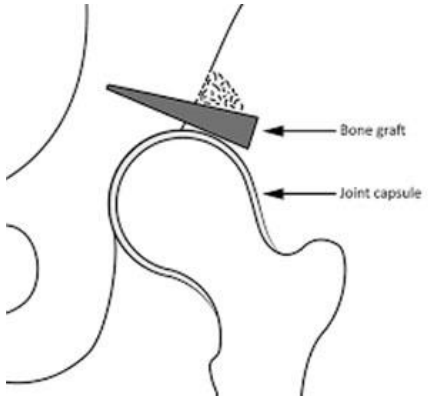
Klaue JBJS-Br 1991

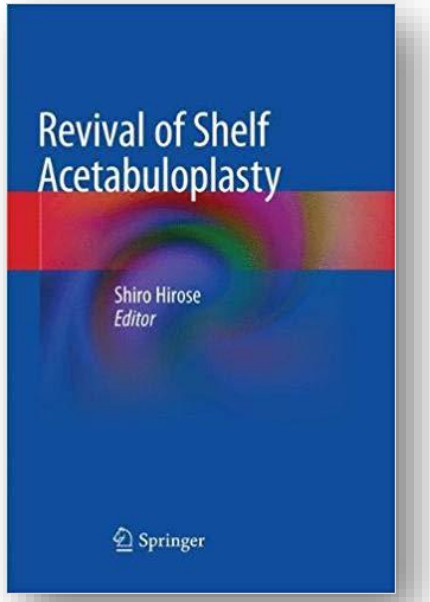
Place de l'arthroscopie dans les dysplasies borderline

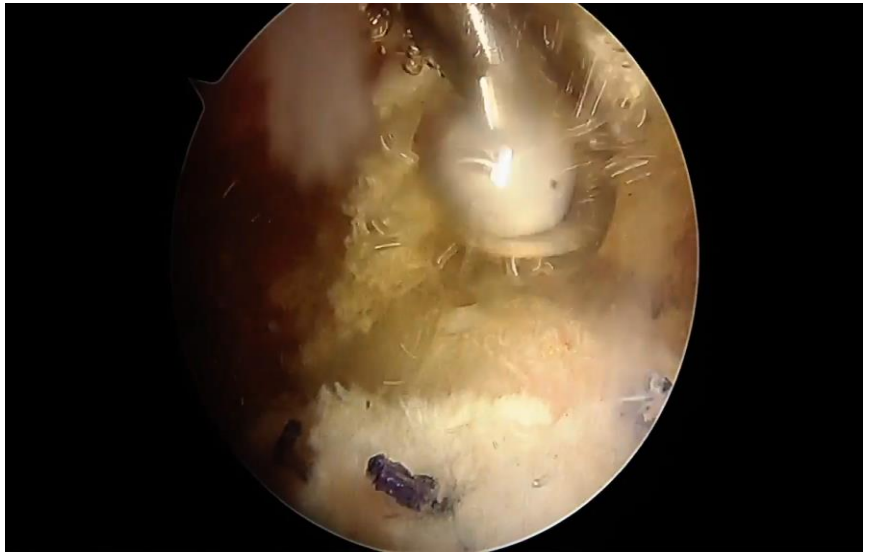
- Borderline dysplasia
  - Domb et al. AJSM 2013.
    - 26 patients with CEA 22.2° (range, 18-25°) underwent HA with labral repair and capsular plication
    - 77% (17/22) G/E outcome
    - 14% (3/22) Tonnis 0 → 1
    - 9% (2/22) Revision

Butée de hanche

- Opération très ancienne qui a fait ses preuves
- Largement abandonnée dans les années 90
- Regain d'intérêt récent





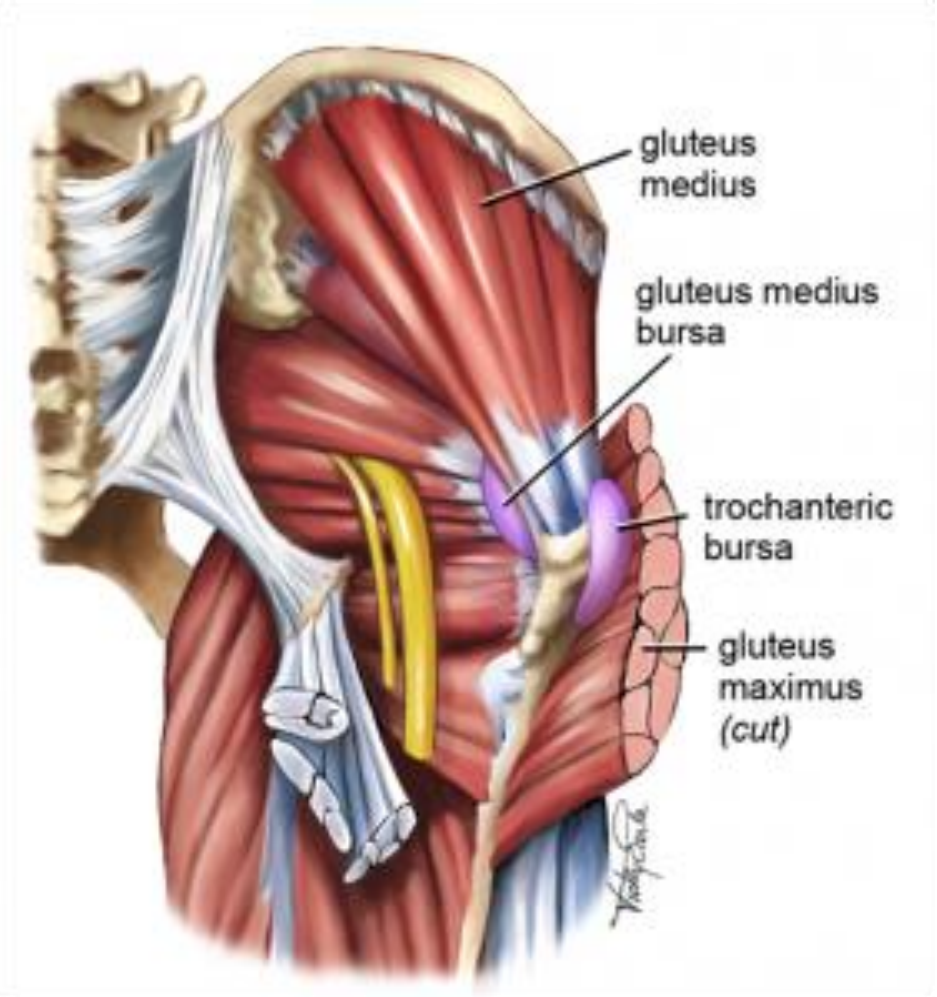


Courtesy B Domb

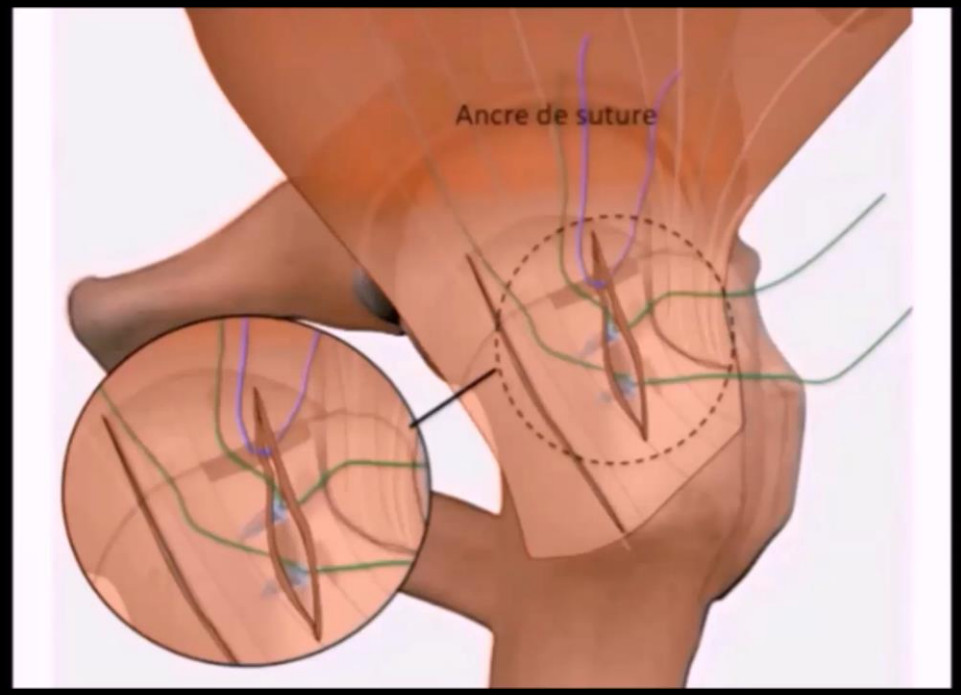
Pathologies extra-articulaires

- BURSITES TROCHANTERIENNES CHRONIQUES= Tendinopathies chroniques des tendons fessiers méconnues

- Périarthrite ou lésion de la **coiffe de hanche?**



Technique chirurgicale



Thaunat M, et al.. Endoscopic repair of partial-thickness undersurface tears of the gluteus medius tendon. OTSR 2013.

Résultats

REVIEW ARTICLE

Endoscopic Management of Gluteus Medius Tendon Tears

Mathieu Thaunat, MD, Eric Noël, MD, Laurent Nové-Josserand, MD, Colin G. Murphy, MD, Mouhcine Sbiyaa, MD, and Bertrand Sonnery-Cottet, MD

Abstract: Tears in the gluteus medius and minimus tendons have been recognized as an important cause of recalcitrant greater trochanteric pain syndrome. Because of the frequency of partial-thickness undersurface tears, this relatively unknown pathology is often misdiagnosed and left untreated. Surgery is indicated in case of 4 associated conditions: (i) Failure of conservative treatment with duration of symptoms > 6 months; (ii) magnetic resonance imaging showing a tendon tear; (iii) positive ultrasound-guided infiltration test; and (iv) the absence of an evolved fatty degeneration or atrophy of the gluteus medius and minimus muscle. Endoscopic repair of partial or full-thickness tears, with systematic resection of the bony structures implicated in the impingement, and a complete bursectomy appear to give satisfactory results, although these results remain to be confirmed by clinical studies with longer follow-up. The degree of tendon degeneration may compromise the tissue left for reattachment, raising concerns over its healing capacity, durability, and ultimate strength of the repair.

Key Words: gluteus medius, partial-thickness tear, endoscopy, hip

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ultrasound (US)-guided infiltration test; and (iv) the absence of an evolved fatty degeneration of the gluteus medius and minimus muscles. This condition is poorly understood, frequently misdiagnosed, and often left untreated. There are few series of open repair of gluteus tendon repair in the literature. Aided by a better understanding of peritrochanteric anatomy and advances in arthroscopic techniques, endoscopic repair of the abductor tendon in the hip has proved to be effective. The aim of this review is to evaluate the current evidence in the literature on the endoscopic repair of gluteus medius and minimus tears.

PHYSICAL EXAMINATION

Physical examination is often notable for point tenderness over the GT and a variable amount of weakness of hip abduction. The main complaint is pain in the peritrochanteric region, which frequently radiates to the thigh, sometimes to the groin, and is mechanical in nature. This pain can be reproduced by direct pressure of the tendon (classic trochanteric sore point)

Original Article With Video Illustration

Influence of Muscle Fatty Degeneration on Functional Outcomes After Endoscopic Gluteus Medius Repair

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Purpose: To report the early outcomes of endoscopic repair of tears of the gluteus medius tendon and to determine whether the fatty degeneration had an influence on clinical results. **Methods:** Between October 2012 and June 2014, data were prospectively collected and retrospectively reviewed for all patients who underwent endoscopic gluteus medius repair. Patients were assessed pre- and postoperatively using the modified Harris hip score, the nonarthritic hip score, and visual analog scale for pain. The gluteus minimus and the 3 distinct parts of the gluteus medius (anterior, middle, and posterior) were assigned a grade of fatty degeneration on preoperative magnetic resonance imaging scans. **Results:** Twenty-two hips (in 20 patients) were assessed with the mean follow-up of 31.7 months (range: 24 to 47 months). There were 15 partial-thickness and 7 full-thickness tears. No patient was lost to follow-up. The mean age at the time of surgery was 66 years (range: 45 to 82 years). Of the 20 magnetic resonance imaging–assessed hips included in

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TECHNICAL NOTE

Endoscopic repair of partial-thickness undersurface tears of the gluteus medius tendon

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KEYWORDS
Gluteus medius;
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Summary Partial-thickness tear of the gluteus medius and minimus muscles has recently been recognized as a cause of chronic trochanteric pain resistant to medical treatment. The present article reports an original endoscopic technique of identification and repair. It uses a standard arthroscope at 30°, with the patient in lateral decubitus, without fluoroscopy. In case of partial-thickness undersurface tear, careful hook palpation followed by bursa exploration enables the pathological tendon to be diagnosed. A trans-tendinous approach then allows debridement,

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Les PTH douloureuses

Arthroscopic Identification and Management of Recurrent Iliopsoas Impingement After Total Hip Arthroplasty

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Abstract: Arthroscopic release of the iliopsoas tendon for iliopsoas impingement (IPI) after total hip arthroplasty (THA) at the lesser trochanter gives good results. However, where IPI then recurs, due to adhesions between the healing iliopsoas tendon and the surrounding soft tissue, and nonoperative measures have failed, a revision THA procedure is usually considered. We propose a technique of arthroscopic visualization of the recurrent IPI and a subsequent psoas tenotomy at the level of the hip joint using an outside-in capsulotomy approach. This secondary tenotomy, located proximally directly at the level of the recurrent impingement, allows relief of the painful symptoms without compromising the muscle function of the iliopsoas and precludes the need for a complex THA revision.

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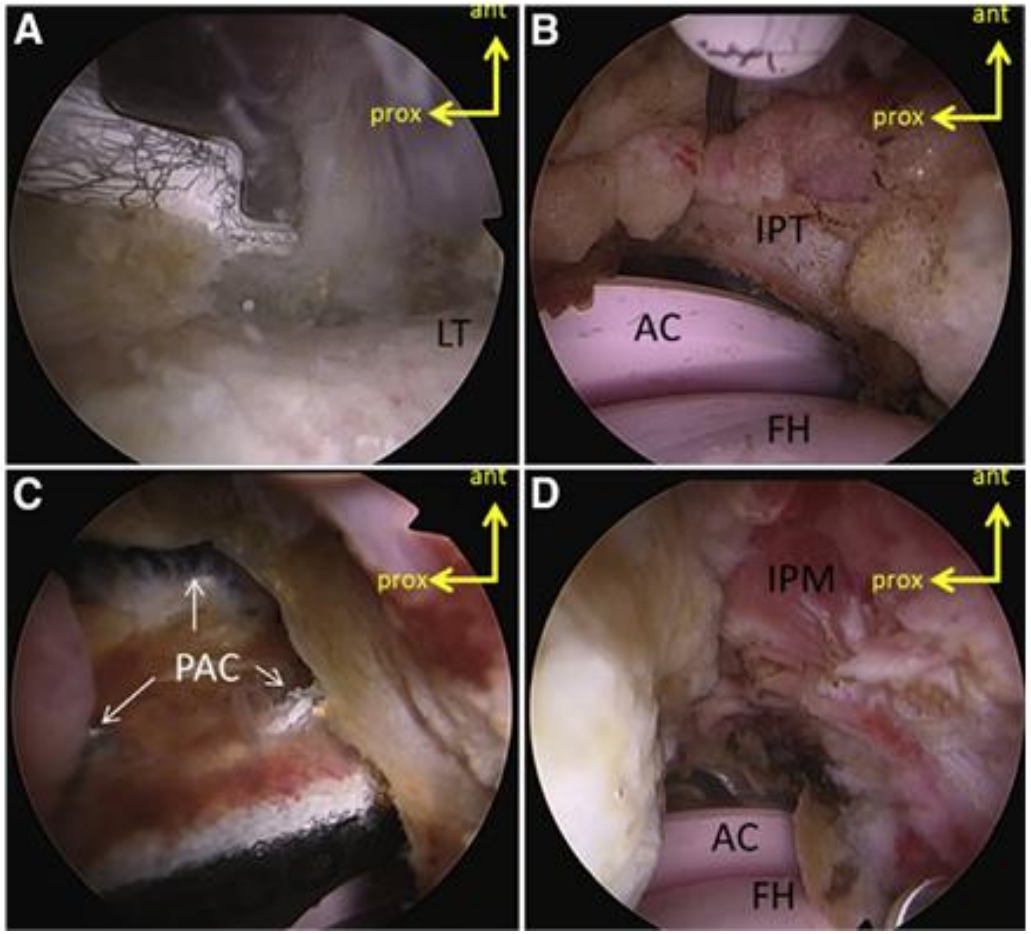

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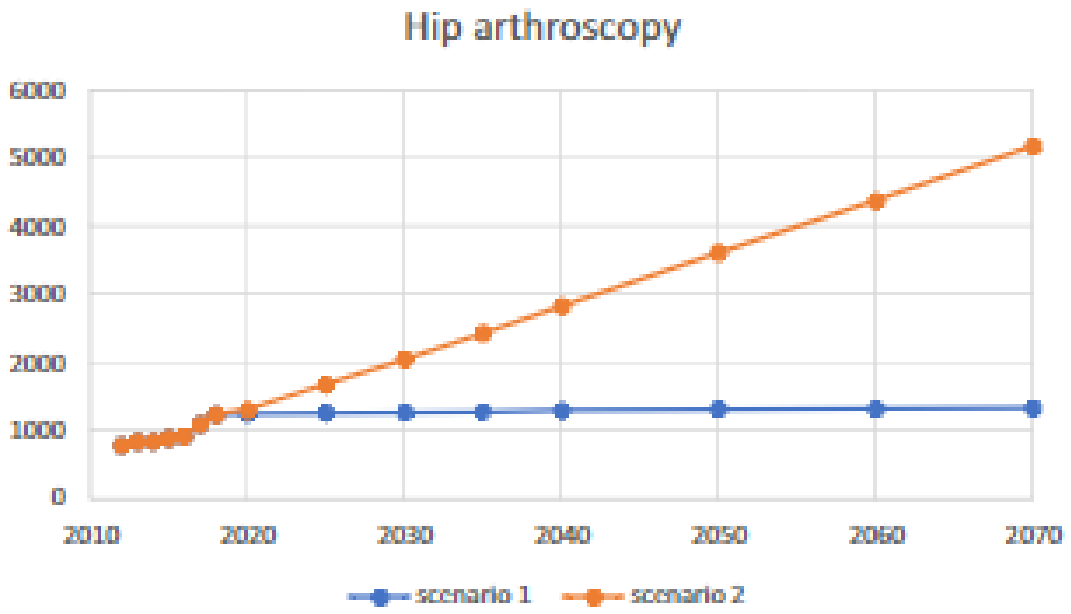

Fig. 5. Progression in number of procedures with hip arthroscopy for 2012-2018 and trends up to 2070 according to scenarios 1 and 2 ($p = 0.003$).

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Original article

Progression and projection for hip surgery in France, 2008-2070: Epidemiologic study with trend and projection analysis

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ABSTRACT

Introduction: Hip replacement was declared "operation of the century" in tribute to the functional improvement it provides. Frequency is increasing, but it is difficult to estimate the actual number of procedures performed and the expected progression, because of changes in indications and lengthening life-expectancy, and also, in France, because there is no registry. As data are lacking in France, we conducted an investigation 1) to update the number of hip surgeries in France, and 2) to forecast progression

Conclusion

- Essor en rapport avec le démembrement de nouvelles pathologies en particulier chez le patient sportif (Conflit)

- Développement encore très limité en France
  - Défaut de formation
  - Learning curve
  - Cotation défavorable (code CCAM)
  - Matériel couteux (optique à 70°, table de traction…)