

Recent Advances in Hip Arthroscopy

Essay

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surgery

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Contents

1. Arthroscopic Anatomy.
2. Portals and Positions.
3. Indications and Contraindications.
4. Instrumentation.
5. Surgical Technique.
6. Complications.
7. Post-operative Rehabilitation.
8. Summary.
9. References.
10. Arabic Summary

List of Abbreviations

ALAD.....acetabular labrum articular disruption

AL.....anterolateral

AP.....anteroposterior

ASF.....anterior synovial fold

ASIS.....anterior superior iliac spine

AVN.....avascular necrosis

CC.....central compartment

CPM.....continuous passive motion

CT.....computerized tomography

DALA.....distal antrolateral accessory

FAI.....femoracetabular impingement

LSF.....lateral synovial fold

LT.....ligamentum teres

MAP.....midanterior portal

MRA.....magnetic resonance arthrography

MRI.....magnetic resonance imaging

MSF.....medial synovial fold

NSAIDS.....non steroidal anti-inflammatory
drugs

PALA.....proximal anterolateral accessory

PC.....posterior compartment

PL.....posterolateral

PLS.....perilabral sulcus

PMAP.....proximal midanterior portal

PSP.....peritrochanteric space portal

ROM.....range of motion

TAL.....transverse acetabular ligament

ZO.....zona orbicularis

List of Figures

FIG 1: Arthroscopic compartments of the hip *page 1*

FIG 2: Femoral Head *page 3*

FIG 3: The horseshoe-shaped appearance of the acetabulum *page 4*

FIG 4: The stellate crease *page 5*

FIG 5: The physeal scar *page 5*

FIG 6: Acetabular fossa & Transverse acetabular ligament *page 7*

FIG 7: Diagram of Labrum surrounding the acetabulum *page 8*

FIG 8: Vascularity of the labrum *page 9*

FIG 9: Arthroscopic view of the labrum *page 11*

FIG 10: Ligamentum Teres *page 13*

FIG 11: Diagnostic round trip of the peripheral compartment *page 19*

FIG 12: Anterior, Antrolateral & Postrolateral portals *page 22*

FIG 13: Anterior portal pathway *page 23*

FIG 14: Anterolateral portal pathway *page 23*

FIG 15: Posterolateral portal pathway *page 23*

FIG 16: Neutral rotation of the operative hip is essential for protection of the sciatic nerve during placement of the posterolateral portal *page 24*

FIG 17: Accessory portals of the hip *page 26*

FIG 18: Distraction vector *page 28*

FIG 19: Operating room layout in supine position *page 29*

FIG 20: Operating room layout in lateral position *page 31*

FIG 21: Morphology of labral tears *page 37*

FIG 22: MRI & arthroscopic view in labral tears *page 39*

FIG 23: MRI & arthroscopic view in labral tears *page 39*

FIG 24: PXR, CT & arthroscopic view in loose bodies *page 42*

FIG 25: MRI in chondral injuries *page 44*

FIG 26: Arthroscopic view in chondral injuries *page 44*

FIG 27: Arthroscopic view in ruptured ligamentum teres *page 46*

FIG 28: PXR & arthroscopic view in osteoarthritis *page 48*

FIG 29: PXR & arthroscopic view in synovial chondromatosis *page 49*

FIG 30: MRI & arthroscopic view in pigmented villonodular synovitis *page 50*

FIG 31: Fluoroscopy showing increased capsular volume and excessive axial distraction in cases of capsular laxity
page 53

FIG 32: Suture placed for plication of the capsule
page 55

FIG 33: Arthroscopic view of hemorrhagic fibrotic tissue characteristic of adhesive capsulitis
page 58

FIG 34: Diagram of FAI
page 63

FIG 35: Lateral radiograph of hip in cam type impingement
page 65

FIG 36: Nitinol guide wire
page 73

FIG 37: Arthroscopic cannulae
page 74

FIG 38: Dilation tubes
page 75

FIG 39: The Slotted canula
page 76

FIG 40: The hip director guide
page 77

FIG 41: Working with hip director guide
page 78

FIG 42: Extra-length curved shaver blades
page 79

FIG 43: Alligator and extended-opening graspers
page 80

FIG 44: The Oratec probe
page 81

FIG 45: Arthroscopic photo of a femoral head with damage to the articular surface from an instrument
page 83

FIG 46: Fluoroscopic view during establishment of portals of CC *page 86*

FIG 47: Fluoroscopic view during establishment of portals of PC *page 89*

FIG 48: Point 1 - Medial wall of the acetabulum *page 92*

FIG 49: Point 3 - The anterior triangle of a hip *page 93*

FIG 50: Point 6 - Posterior capsule *page 94*

FIG 51: Point 10 - Anterior aspect of the transverse ligament *page 95*

FIG 52: Point 13 - Posterolateral capsule *page 95*

FIG 53: Point 18 – medial femoral neck *page 97*

FIG 54: Debridement of labral tear *page 99*

FIG 55: Arthroscopic repair of type I labral tear *page 101*

FIG 56: Arthroscopic repair of type II labral tear *page 102*

FIG 57: Microfracture technique in chondral injuries *page 104*

FIG 58: Arthroscopic osteoplasty in cam type impingement *page 107*

FIG 59: Arthroscopic rim trimming in pincer type impingement *page 110*

FIG 60: Fluoroscopic view of 1st portal in iliopsoas release *page 112*

FIG 61: Fluoroscopic view of 2nd portal in iliopsoas release
page 112

FIG 62: Arthroscopic view of iliopsoas tendon *page 113*

FIG 63: Arthroscopic view of iliopsoas partial release
page 114

FIG 64: Arthroscopic view of iliopsoas complete release
page 114

FIG 65: Portals for paratrochanteric space *page 115*

FIG 66: Arthroscopic view of the insertion of the gluteus maximus tendon *page 116*

FIG 67: Arthroscopic view of hip abductors and iliotibial band *page 117*

FIG 68: Arthroscopic view of iliotibial band release
page 118

FIG 69: Arthroscopic view of insertion of gluteus medius
page 119

FIG 70: Arthroscopic view of gluteus medius tendon repair
page 119

FIG 71: Quadruped rocking *page 129*

FIG 72: Standing hip internal rotation *page 129*

FIG 73: Sidelying clams *page 129*

FIG 74: Double Leg Bridging *page 129*

FIG 75: Three-way leg raises *page 129*

- FIG 76:** Short-lever hip flexion *page 130*
- FIG 77:** Double one-third knee bends *page 130*
- FIG 78:** Double-leg cord rotations *page 132*
- FIG 79:** Dyna Disc: single-leg stance *page 132*
- FIG 80:** Advanced bridging *page 132*
- FIG 81:** Side supports *page 132*
- FIG 82:** Single-leg cord rotations *page 133*
- FIG 83:** Side stepping *page 133*
- FIG 84:** Skaters *page 133*
- FIG 85:** Single knee bends *page 133*
- FIG 86:** Single-leg windmills *page 133*
- FIG 87:** Side-to-side lateral agility *page 133*

List of Tables

Table 1: Distance from portal to anatomic structures around hip *page 24*

Table 2: Indications of hip arthroscopy *page 32*

Table 3: Radiographic features of FAI *page 66*

Table 4: Summary of the 23 arthroscopic points *page 91*

Table 5: Summary of complications *page 120*

Introduction

The twentieth century marked a revolution in open-hip surgical procedures. At the beginning of the century, the primary indication for a hip procedure was related to the management of tuberculosis. By the end of the century, hip operations, specifically total hip arthroplasty and fracture management, were 2 of the most common orthopedic procedures performed annually ^(1, 2).

Presently, there are many “safe” windows to access the hip joint. These include the 5 primary approaches: straight anterior, anterolateral, lateral, posterior/posterolateral, and medial. These exposures have been well studied and have a wide range of applications. They are all safe and reproducible by not violating basic surgical anatomic principles. However, they all lack a true exposure of the femoral head. Hence, they have limited utility to address intra-articular pathology ⁽³⁾.

During the last 10 years, recent advances in understanding the anatomical blood supply to the femoral head led Reinhold Ganz to champion a safe surgical dislocation of the hip. This procedure affords the “open” hip surgeon a tool to address directly intra-articular pathologies. This procedure, however, has a steep learning curve. It also has numerous potentially disastrous complications, including AVN, heterotopic ossification, and trochanteric nonunion ^(4, 5).

In contrast, hip arthroscopy, provides the surgeon a tool to diagnose and treat intra-articular pathology in a less-invasive fashion. Hip arthroscopy offers a less invasive

alternative for hip procedures that would otherwise require surgical dislocation of the hip. In addition, this procedure allows surgeons to address intra-articular derangements that were previously undiagnosed and untreated ^(6, 7).

Although Burman ⁽⁸⁾ first described arthroscopic visualization of the hip in 1931, it did not gain significant clinical utility as a diagnostic tool and treatment modality until the mid 1980s ⁽⁹⁻¹⁰⁾. Because of several technical difficulties, it has only recently gained wider acceptance and use in the past decade ⁽¹¹⁻¹²⁾.

Anatomical constraints have made arthroscopy of the hip significantly more challenging than similar surgery around the shoulder and knee. The femoral head is deeply recessed in the bony acetabulum and is convex in shape. The thick fibrocapsular and muscular envelope around the hip joint limits the amount of distention possible during hip arthroscopy; the relative proximity of the sciatic nerve, lateral femoral cutaneous nerve, and remaining femoral neurovascular structures make portal placement more challenging ⁽¹³⁻¹⁴⁾.

Recent advances in lateralizing distractors, quantitation of distension and traction forces, as well as the development of specific surgical instrumentation have allowed hip arthroscopy to gain wider recognition and clinical application ⁽¹⁵⁾. With these improvements in technology a more detailed understanding of the arthroscopic anatomy of the hip has developed ⁽³⁾.

Current indications for hip arthroscopy include management of labral tears, osteoplasty for decreased femoral head neck junction offset (femoroacetabular impingement), rotational instability and capsular laxity,

ligamentum teres injuries, lateral impact and chondral injuries, osteochondritis dissecans, internal and external snapping hip, removal of loose bodies, synovial biopsy, subtotal synovectomy, synovial chondromatosis, infection, and certain cases of mild-to moderate osteoarthritis with associated mechanical symptoms. In addition, patients with long-standing, unresolved hip joint pain and positive physical findings may benefit from arthroscopic evaluation (6, 7).

Arthroscopy in trained hands offers the benefit of an outpatient procedure and circumferential access to the hip joint and does not hinder opportunities for future surgical interventions (15).

At the other end of the spectrum from “arthroscopists,” traditional hip surgeons are emphasizing the role of “minimally invasive” surgery. Conceptually, this is simply a matter of lessening the surgical exposure necessary to accomplish a particular procedure. Less surgical violation of the soft tissue planes means shorter hospitalization, less postoperative pain, easier, shorter, and perhaps more reliable postoperative rehabilitation, and a quicker return to a productive lifestyle. Some of these advantages are offset by the technical challenges imposed by these evolving methods. It is likely that the arthroscope will find an expanding role as an adjunct tool in this migration towards less invasive techniques, and “arthroscopic assisted” methods should become more commonplace (16).