

Hip Arthroscopy Guidelines

Introduction

Surgery: the hip is distracted allowing access through 2-4 antero-lateral portals

Indications for surgery: reduce symptoms of hip and/or groin pain, clicking, catching, stiffness, giving and way and facilitate potential return to function/sport

Expected Length of Stay: day case or overnight

Outcome expectations: restoration of normal ROM, gait and strength allowing a return to a full level of activity and function.

Surgeons: Mr Paul Gaston and Mr Iain Murray have approved these guidelines.

Scope of practice

These guidelines are designed to guide physiotherapists when treating patients following this surgical procedure. These guidelines were produced by a process of systematic review of the current evidence based literature, medical and peer consultation. They were correct at the time of writing. The guidelines should be used in conjunction with the clinical reasoning skills of the physiotherapist and patients should always be treated on a case-by-case basis.

Aim

The aim of these guidelines is to provide physiotherapy staff with a series of recommendations from the current evidence base to assist them in the management of patients who have undergone this surgical procedure.

Literature review question

What is a safe and effective rehabilitation programme following hip arthroscopy from day of surgery to return to function and sport in order to maximise outcome?

Search Process

Appraisal process: the databases below were searched between 1996 and November 2023. Pubmed was searched in the first instance. The titles and abstracts of all identified studies were assessed to determine whether they were pertinent to the research question. The initial searches were then carried out on the other databases and the results combined to ensure articles were not duplicated.

Total number of articles selected: 86

Total number of articles included: 23

Data Base	Dates	Limitations
Pubmed	1996 to November 2023	English
Medline	1996 to November 2023	English
Embase	1996 to November 2023	English
Pedro	1996 to November 2023	English
Cochrane	1996 to November 2023	English

NICE	1996 to November 2023	English
Cinahl	1996 to November 2023	English
Royal National Orthopaedic Guidelines	1996 to November 2023	English

Key Words:

Hip AND Arthroscopy	AND/OR
Arthroscopy OR Labral Debridement OR Labral Repair OR Microfracture OR Chondroplasty OR femoroacetabular Impingement	Physiotherapy
	Physical Therapy
	Rehabilitation
	Exercise
	Sport
	Proprioception
	Plyometrics
	Outcome Measures/Outcomes

Results

From the literature search, 23 articles were selected. 12 of these were meta-analyses of randomised controlled trials and all found that hip arthroscopy surgery showed better outcomes compared to conservative management (Gohal et al. 2019, Dwyer et al. 2020, Gatz et al. 2020, Kim et al. 2020, Lovett-Carter et al. 2020, Bastos et al. 2021, Casartelli et al. 2021, Ferreira et al. 2021, Mok et al. 2021, Yang et al. 2021, Zhu et al. 2022, Lamo-espinosa et al. 2023) . The other 11 articles were clinical commentaries based on expert opinion or case studies.

Key Points:

- Hip arthroscopy and personalised hip therapy both improved hip-related quality of life for patients with femoroacetabular impingement syndrome. Hip arthroscopy led to a greater improvement than did conservative management with physiotherapy and this difference was clinically significant. Further follow-up required to assess if the clinical benefits of hip arthroscopy are maintained and whether it is cost effective in the long term (Mok et al. 2021)
- The most common indication for undergoing hip arthroscopy is femoroacetabular impingement; followed by dysplasia and then labral tears (Looney et al. 2022). The rehab outcomes vary depending upon surgical indication (Looney et al. 2022).
- Hip arthroscopy surgery is less invasive than an open surgical technique which minimises soft tissue dissection and disruption; facilitating faster recovery, rehabilitation and return to function/sports (Memon et al. 2019). This also reduces the risk of intraoperative complications and need for further surgery

- Rehabilitation must be individualised and should incorporate an evaluation based programme designed to address surgical findings, procedure and patient individual characteristics (Hoit et al. 2020). Rehabilitation should not be based around timelines, unless advised by the orthopaedic surgeon (see precautions for labral repairs)
- ROM restrictions only exist in the case of labral repairs. Straight flexion to any degree is allowed but the combination of flexion, adduction and deep internal rotation (FADIR) must be avoided until 12 weeks post-op.
- A meta-analysis of randomised controlled trials (Mok et al. 2021) found only 3 articles (Griffin et al. 2018; Palmer et al. 2019; Mansell et al. 2018) of sufficient quality to accurately determine the benefit of hip arthroscopy surgery compared to conservative management. Prior to this publication in 2021, three other articles commented on the poor standard and low quantity of evidence to support the indication for surgical arthroscopy (Wall et al. 2014; Edelstein et al. 2012; Grzybowski et al. 2015).
- The three trials (Griffin et al. 2018; Palmer et al. 2019; Mansell et al. 2018) covered a total of 650 patients with femoroacetabular impingement and found that those who underwent arthroscopic surgery compared to conservative management demonstrated a more positive outcome on function, quality of life and return to work. However, amongst patients who were returning to high level sport, there was no statistical significance between outcomes of surgical intervention and conservative therapy.
- Lamo-Espinosa et al. (2023) found that despite having very positive initial outcomes post surgery, there was a significant occurrence of secondary osteoarthritis in patients who underwent arthroscopy compared to those who managed symptoms conservatively with physiotherapy treatment.
- The literature describing rehabilitation following hip arthroscopy, for the most part, is limited to clinical commentaries and case series. Most post-operative protocols are based upon basic tissue healing properties, patient tolerance and clinician's experience (Edelstein et al. 2012; Enseki and Kohlrieser 2014).

Recommendations

Precautions: timescales are approximate and will depend on surgical procedure.

Labral debridement, chondroplasty and microfracture – Encourage normal gait pattern, weight-bear as tolerated (WBAT) with or without elbow crutches. No longer any WB time restrictions for these patients.

Labral Repair – Avoid combination of flexion, adduction and internal rotation (FADIR) for 12 weeks. These restrictions allow time for the labral repair to develop maximal strength. Encourage WBAT gait pattern with or without elbow crutches.

It is advisable to avoid exercises that actively engage iliopsoas in the first few weeks following surgery (Sherry 2011).

Progression through each phase of rehabilitation is guided by pain, normal gait pattern, good muscle recruitment and patient tolerance (Edelstein et al. 2012).

Clinician's should use their clinical reasoning and all treatments should be patient centred and specific (Hoit et al. 2020).

Phase 1

Immediately post-op to outpatient physiotherapy appointment (usually within 7-10 days)

Goals	Recommendations
Manage pain	Analgesia/NSAIDS as required
	Ice as required
	Education of surgical procedure and healing process
Restore ROM and reduce adhesion formation	Active, active assisted & passive ROM exercises within surgical restrictions
	Prone/supine-lying to stretch hip flexors
	Gym ball ROM exercises trunk/pelvis
	Resistance free exercise bike
	Gentle FABER and FADIR movements in pain free range and within surgical recommendations. Avoid deep FADIR movements.
Normalise muscle recruitment patterns	Isometric transverse abdominus, gluteus maximus and quadriceps exercises
Normalise gait pattern	WBAT with/without elbow crutches
Reduce effects of immobilisation	Basic cardiovascular and circulatory exercises
Increase control of deep hip rotators to help with dynamic hip stability	Isometric hip internal/external rotations in prone. Take care with internal rotation and ensure completing isometric strengthening exercises in neutral.

Phase 2

From initial outpatient physiotherapy appointment to end of surgical restrictions (7-10 days to 4 weeks)

Goals	Recommendations
Manage pain	Analgesia/NSAIDS as required
	Ice as required
	Activity modification if required
Restore ROM and reduce adhesion formation	Improve ROM within pain tolerance and surgical restrictions
	ROM as previous plus circumduction, quadraped rocking and kneeling internal/external rotations
	Manual therapy techniques such as joint mobilisations, distractions, soft tissue techniques (myofascial release foam rollers)
	Physio assisted anterior capsule stretches
	Exercise bike
	Hydrotherapy if available and indicated
Normalise muscle recruitment patterns	Progression of isometric to isotonic exercises
	Introduce core and general LL strengthening exercises with particular emphasis on gluteus medius function (OKC/CKC) and reducing over-activation of hip flexors and adductors
	Gluteus maximus exercises in prone
Increase control of deep hip rotators to help with dynamic hip stability	Progress isometric hip internal/external rotations from prone to 4 point kneeling. Again, ensure hip remains in neutral when performing isometric exercises.
Normalise gait pattern	FWB as tolerated

	Ensure normal gluteal activation without a trendelenburg gait
Increase neuromuscular control and proprioception	Commence basic balance and stability exercises
	Trunk stability: double → single leg bridge
	Proprioception: progressing level of difficulty double → single leg stable surface → unstable surface eyes open → eyes closed

Phase 3

4 weeks to discharge

Precautions:

Labral repair: Avoid combination of flexion, adduction and internal rotation (FADIR) for 12 weeks. These restrictions allow time for the labral repair to develop maximal strength.

Progression of rehabilitation through this stage is governed by having a pain-free and non-irritable hip, a normal gait pattern, optimal lower limb motor control, full ROM (within restrictions), strength and proprioception to allow full recovery and is at the discretion and clinical reasoning of the physiotherapist.

Progress through this stage at a pace tolerated by the patient and appropriate for the surgical procedure. Labral repairs will be significantly slower getting through this stage.

Goals	Recommendations
Restore full ROM and normal muscle lengths	Progress to full end range ROM exercises as symptoms permit for labral debridement, chondroplasty and microfracture patients.
	Continue to avoid flexion/internal rotation until 12/52 post-op for labral repairs.
	Stretching all trunk and lower limb muscle groups as required.
Restore functional strength, endurance and neuromuscular control	Strengthening of local and global muscles through: OKC and CKC exercises Bodyweight exercises – squats, lunges (unilateral and multidirectional), step-ups, side dips, bridging, crab walk etc Gym – resisted exercises, weight machines
	Build endurance and CV fitness through: Bike

	Cross trainer Rowing machine Swimming (no breaststroke legs for labral repairs until 12/52 post-op) Progress to jogging as hip tolerates
	Restore neuromuscular control through: Gymball/TRX BOSU/trampoline/wobble boards for dynamic balance challenge
	Progressive agility work – static, transitional and dynamic stabilisations are phases of agility progression. CKC loading with conscious motion control and high joint tolerance, then progress to unconscious control with loading of the joint
Increase control of deep hip rotators to help with dynamic hip stability	Introduce resisted internal/external hip rotations in 4 point kneeling with theraband and progress to seated/standing exercises at 12 weeks post-op Can also begin weightbearing hip stability exercises e.g. arabesques, single leg Romanian deadlifts
Return to full pain-free function/work/sport	End stage and sports specific agility work – progress to fast-speed, multidirectional and more complex tasks e.g. acceleration/deceleration drills, straight line running, figure of eight running and agility drills
	Commence plyometric drills
	Progress to functional rehabilitation relative to activity and/or sport

Suggested functional outcome measures prior to plyometric and sports specific rehabilitation	Level of Evidence
Pain free and non-irritable hip	C
Functional tests – normative values	C
Plank	C
Side plank	C
Gluteus medius	C
Gluteus maximus	C
1RM – leg press, quadriceps and hamstrings (based on ACLR guidelines)	C
Dynamic balance test – STAR	C
Hop tests – single hop for distance, quadruple cross-over hop test	C
International hip outcome tool (iHOT-33)	C
A1	C
Hip Outcome Score (HOS)	C

Return to Activities/Sports – Approximate Timescales

Please note that these timescales should only be used for guidance.

Driving

Once fully weight bearing, mobilising normally and able to perform and emergency stop with confidence

Swimming

Once portals healed but avoid vigorous crawl kick for 8/52 due to anterior capsulotomy. Avoid breast stroke kick until 12/52 post labral repair.

Running

Depends on lumbo-pelvic control, LL strength and hip discomfort. Simple debridement may be able to commence jogging within 6-8/52. Patients undergoing microfracture and labral repair will be much slower.

Non-contact Sports

Sport dependent – from 3/12 onwards. Ensure rehabilitation involves agility and plyometrics, and the hip is pain-free with these drills prior to commencing sport.

Contact Sports

When ready – from 4/12 but depends on surgery and rehabilitation progress

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