Post-Arthroscopic Rehabilitation of the Hip

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Outline

- Hip Arthroscopy menu
- Rehabilitation phases
  - Goals
  - Precautions
  - Activity & exercise interventions
  - Criteria for advancement
- Return to activity

Types of Arthroscopic Surgery

- Hip Arthroscopy
- Osteoplasty
- Rim trimming
- Chondroplasty
- Microfracture
- Acetabular labral repair
- Capsular plication and closure

Phases of Rehab

- PHASE I – Immediate
  Weeks: 1 – 4
  - 6-8 weeks if microfx
  - Maximum Protection and Mobility
- PHASE II - Intermediate
  Weeks: 4 - 10
  - Gait
  - Controlled Stability
  - Closed Chain Activity

Phases of Rehab

- PHASE III – Advanced
  Weeks: 10 - 16
  - Strengthening
- PHASE IV – Return to Function Progression
  Weeks: 16 – beyond
  - Activity Specific
  - Return to sport test
  - ~16-20 weeks

Immediate Exercises: PHASE I

Maximum Protection and Mobility

Weeks 1 – 4 (6-8 weeks microfx)

Goals
  - Protect integrity of repaired tissues
  - Diminish pain and inflammation
  - Restore passive range of motion within restriction
  - Prevent muscular inhibition
  - Patient education

Precautions
  - Specific ranges of motion (based on restrictions)
  - Weight bearing activity (based on restrictions)
  - Hip pain and pinching
### Range of Motion Limitations

Based on Procedure and Post Operative Prescription

<table>
<thead>
<tr>
<th>Procedure</th>
<th>Weightbearing</th>
<th>Flexion</th>
<th>Extension</th>
<th>Internal Rot</th>
<th>Abduction</th>
</tr>
</thead>
<tbody>
<tr>
<td>Osteoplasty</td>
<td>FFWB (&lt;20 lbs or 1/6 BW)</td>
<td>90° x 10 Days</td>
<td>0° after 10 D</td>
<td>No Limit</td>
<td>0° x 3 Weeks</td>
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<tr>
<td>Chondroplasty</td>
<td></td>
<td></td>
<td>0° x 3 Weeks</td>
<td></td>
<td>0° x 3 Weeks</td>
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<tr>
<td>Microfracture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0° x 21 D</td>
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<tr>
<td>Acetabular Labral Repair</td>
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<td></td>
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<td></td>
<td></td>
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<tr>
<td>Capsular Plication</td>
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</tr>
</tbody>
</table>

### Devices for ROM Restriction

- Bledsoe brace
- Anti-rotation boots

### PROM

- Circumduction, circumduction, cir……
- CPM

### Immediate Exercises: PHASE I

- Maximum Protection and Mobility

  - Stationary bike with min resistance
    - Upright posture to ↓ flexion
    - Gait progression – crutch weaning as appropriate
    - Foot straps
  
  - Stretches
    - Posterior chain – hamstrings, gastroc/soleus
    - Piriformis w/o ER

### More little ex.

- Tummy time
- Opposite knee to chest/post. pelvic tilt

### Immediate Exercises: PHASE I

- Maximum Protection and Mobility

  - Exercises
    - Quadruped rocking
    - Isometrics – abd, add, glute squeezes
      - Prone heel squeezes
    - Active prone IR – stool rotations
    - Clamshells/ closed when approp.
    - Heel slides
  
  - Careful w/ active hip flexion as able
Immediate Exercises: PHASE I
Maximum Protection and Mobility: Quadruped Rolling

Immediate Exercises: PHASE I
Maximum Protection and Mobility: Clamshells & Lat Raise
Note ROM limits

Immediate Exercises: PHASE I
Maximum Protection and Mobility: Glute Bridges

Immediate Exercises: PHASE I
Maximum Protection and Mobility: Heel Squeeze, Side Plank

Immediate Exercises: PHASE I
Maximum Protection and Mobility: Inverted Clam Shells

Immediate Exercises: PHASE I
Maximum Protection and Mobility: Inverted Clam Shells
Immediate Exercises: PHASE I
Maximum Protection and Mobility

Progression Criteria to Phase 2: Controlled Stabilization

• Minimal pain with all phase I exercise
• ROM ≥75% of the uninvolved side
• Proper muscle firing patterns for initial exercises
• Do not progress to phase II until full weight bearing is allowed
  - Phase 1 and 2 overlap

Immediate Exercises: PHASE I
Maximum Protection and Mobility: Stick Series

• Late Phase 1 → Phase 2

Stick Series/Hip Hinge
• still 50% WB

Immediate Exercises: PHASE I
Maximum Protection and Mobility: x3 Pts of Contact

Immediate Exercises: PHASE I
Maximum Protection and Mobility: Stick Hip Hinge

Intermediate Exercises: PHASE II
Controlled Stabilization and Gait/Closed Chain

Weeks: 4 – 10
Gait
Stability
Closed Chain Activity

Goals
- Normalize gait
  - Correct muscle imbalances
- Restore full range of motion
- Improve neuromuscular control, balance, and proprioception
- Initiate functional exercises maintaining trunk and pelvic stability

Intermediate Exercises: PHASE II
Controlled Stabilization and Gait/Closed Chain

Weeks: 4 – 10
Gait
Stability
Closed Chain Activity

Precautions
- Range of motion (based on restrictions)
- Pain in the hip or pinching
- No treadmill use
- No ballistic or forced stretching
Intermediate Exercises: PHASE II
Controlled Stabilization

- Activities
  - Continue PROM
  - Crutch weaning (if not already)
  - Progress stationary bike
  - Joint mobilizations – 6-8 weeks prn

- Exercises (progress from previous phase)
  - Balance progression
    - Sing leg/dynadisc/ foam
    - Knee bends/mini-squat

Intermediate Exercises: PHASE II
Controlled Stabilization

- Exercises
  - Advanced trunk
    - Planks
  - Side stepping
  - Hamstring Concentric

- Endurance
  - Bike, elliptical

Stick Series Progression: Single Leg Activation

Immediate Exercises: PHASE II
Controlled Stabilization: Bridge Progression

Intermediate Exercises: PHASE II
Controlled Stabilization: Eccentric Hamstring

Intermediate Exercises: PHASE II
Controlled Stabilization: Stick Hinge Progression
Intermediate Exercises: PHASE II
Controlled Stabilization: Stick Hinge Progression

Intermediate Exercises: PHASE II
Controlled Stabilization
Progression Criteria to Phase 3: Advanced Strengthening
• Full range of motion
• Pain-free/normal gait pattern
• Hip flexion strength >60% of the uninvolved side
• Hip add, abd, ext, IR, ER strength >70% of the uninvolved side

Advanced Exercises: PHASE III
Strengthening
Weeks: 10-16
Goals
– Correct residual muscle imbalances
– Restore normal gait pattern
– Tolerate early phases of functional activity
– Prepare for return to participation
Precautions
– Treadmill use not recommended
– Gradual progression to activity
– Avoid hip flexor, adductor and piriformis irritation
– No contact activities

Advanced Exercises: PHASE III
Strengthening
Exercises (progress from previous phase)
– Stairs
  • Step downs/single leg balance
– Squat Progression
  • Single leg/assisted/machine
  • Lunges
  • Lateral dynamic stability

Advanced Exercises: PHASE III
Strengthening
Exercises
– Introduce power, agility, quickness
  – Late stage III
    • Ladder
    • Cones
    • Box jumps
    • Slideboard
Stick Series Progression
• Rotation, Chair Squat / Hip Activation
Advanced Exercises: PHASE III
Strengthening: Advanced Stick Hinge / Squatting

Advanced Exercises: PHASE III
Strengthening: Advanced Stick Hinge / Squatting

Advanced Exercises: PHASE III
Strengthening: Band Walk Series

Return to Function: PHASE III
Strengthening: Sliding Lunge

Advanced Exercises: PHASE III
Strengthening
Progression Criteria to Phase 4: Return to Function
Being medically cleared per MD
– Hip flexion strength >70% of the uninvolved side
– Hip add, abd, ext, IR, ER strength >80% of the uninvolved side
– Cardiovascular fitness approaching preinjury level
– Demonstration of initial agility drills with proper body mechanics

Return to Function: PHASE IV
Activity Specific
Weeks: 20 - beyond
Goals:
– Monitor exercise tolerance as volume and intensity increase
– Address any hip/trunk stability or mobility issues that might remain
– Continue to increase cardiovascular exercise
– Progress dynamic balance activities
– Pass functional movement/activity testing
Return to Function: PHASE IV

**Activity Specific**

- **Activities**
  - Continue PROM/joint mobs prn
  - Progress cycling/elliptical/running

- **Exercises**
  - Full speed ladder
  - Full speed cones
  - Sport specific drills
  - Full slideboard training
  - ...

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**Quickness, agility, power**

![Quickness, agility, power images]

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**Criteria for RTP**

- Full ROM p. free
- Complete movement testing
- Sport specific drills at full speed w/o pain
- Completion of functional sport test
  - ex. VAIL SPORT TEST™
- Cleared by surgeon

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**Vail Sport Test**

![Vail Sport Test images]
Longer Term Precautions

- Avoid treadmill
- Squat load & depth?
- Cost v. benefit of activity

References/Further Reading


Kachingwe, AF. Dec 2008. Proposed Algorithm for the Management of Athletes With Athletic Pubalgia. JOSPT.
