Advances in Hip Arthritis Treatment

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Credentials:

• University Of Washington- SOM
• University of New Mexico- Residency
• Coon Joint Replacement Institute- Fellowship and Practice
• AAOS and AAHKS

What is Arthritis?

• CJRI performs 1,200+ joint replacement surgeries annually
• Focus on minimally invasive surgical techniques combined with advanced technology
• 99% of cases done under spinal anesthesia
• Avg LOS: TKA 1.1 days, THA 1.5 days
• 91% of patients discharged to home with outpatient PT
Osteoarthritis - Worn out articular cartilage

Inflammatory Arthritis - Systemic Process ex: Rheumatoid, Psoriatic, etc.

Hip Stages

X-ray Showing Arthritis

Primary Hip and Knee Replacement

New Generation of Patients

- Many patients (usually 45-64 years old) have different expectations
  - Want to maintain their quality of life and active lifestyles
- Patients are often better informed today
  - Internet allows access to more information

   Today’s middle-aged patients often do not want to suffer through the pain of OA or accept a sedentary lifestyle.

Treatment Options for Knee and Hip Pain

- Rest, ice, and heat applications
- Medications for inflammation and pain
- Lifestyle modification
- Physical therapy
- Joint fluid supplements
- Knee arthroscopy
- Total joint replacement

RICE and NSAIDs

Rest, Ice, Compression, Elevation

Ibuprofen, Alleve, Tylenol, Celebrex

Topical compounds

Glucosamine

Activity Modification and Weight Loss

Avoiding high impact activities, i.e., running, jumping

Weight Loss: Goal BMI<40
Joint Injections

- Cortisone
- Visco-supplementation
- Platelet rich plasma (PRP)
- Stem Cells

Visco-supplementation

“Chicken Shots” - Hyaluronic acid injections

*Not covered by insurance, expensive

PRP: Platelet Rich Plasma

Injections of concentrated blood products to enhance healing

*Not covered by insurance, expensive

The Promise of Stem Cells

Obtain stem cells, concentrate them and inject them into the joint to decrease inflammation and promote healing.

*Not covered by insurance, very expensive
Stem Cell Results:

- 73% of Regenexx-SD hip patients returned to sporting activities.

Hip Demographics:
- 94 THA in 2007:
  - Mean age of 62.22
  - Mean BMI of 30.18
- 28 BMAC Hip interventions in 2012:
  - Mean age of 51.44
  - Mean BMI of 26.40

Available for follow-up at one year:
- THR (24) 14 Males/10 Females
- BMAC at Hip (18) 12 Males/6 Females

Mean Harris Hip Score:
- THA Preop (101) 56
- THA Post (24) 94
- BMAC Preop (28) 68.75
- Post BMAC (18) 82.89
Limitations with Treatment Options

- Oral drug therapy may not provide significant and lasting relief for chronic pain and may have serious adverse effects\(^1\)
- Cortisone injections can weaken bone and cartilage and should not be given continuously\(^2\)
- Arthroscopy, physical therapy, and bracing do not address progressive and degenerative process of OA
- Ease of movement with intra-articular hyaluronic acid visco-supplementation may be limited to 6 months\(^3\)

Consequences of Delaying Surgery

- Surgery is a difficult decision
- OA is a degenerative disease
- Better outcomes are reported in patients who had a total joint operation earlier in the disease process\(^1\)
- At 2 years post-operation, patients who chose surgery earlier in disease process vs. those who waited\(^1\)
  - Had improved function
  - Had reduced pain

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Modern Approach to Hip Arthroplasty

- The bearing affects:
  - Performance
  - Flexibility
  - Durability
  - Longevity

- Options for bearings in hip replacements:
  - Ceramic-on-ceramic
  - Metal-on-plastic
  - Metal-on-metal
  - Ceramic-on-plastic

The Very Important Bearing Surface

Hip Arthroplasty

- The bearing surface: The two parts that glide together throughout motion

MIS Hip Replacement

Direct Anterior Approach
What is the ‘Direct Anterior Approach’?

- The direct anterior approach is a minimally invasive hip replacement technique that allows the surgeon good access to the hip without detaching any muscles or tendons.

Traditional vs. Direct Anterior Approach

<table>
<thead>
<tr>
<th>Traditional Hip Replacement</th>
<th>MIS with Direct Anterior Approach</th>
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<tbody>
<tr>
<td>• 8-12 inch incision</td>
<td>• 4-5 inch incision</td>
</tr>
<tr>
<td>• Surgical approach - side (lateral) or back (posterior)</td>
<td>• Surgical approach – front (anterior)</td>
</tr>
<tr>
<td>• Disturbance of the joint and connecting tissues</td>
<td>• Muscles or tendons not detached</td>
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Why I Do The Direct Anterior Approach?

- Hip closer to the front of the body
- Surgical anatomy
- Doesn’t detach any major muscles
- Minimal risk to nerves
- Truly MIS
Why Direct Anterior?

- Less pain
- Quicker restoration of function
- Shorter hospital stay
- Probably more economical

Direct Anterior Hip Replacement

Why?
- Ideal soft tissue interval
- Ease of patient position
- Simple socket instrumentation

Why Not?

- Unfamiliar territory
- Femoral exposure is difficult
- Specialized equipment

How it’s done
**Typical Precautions: Traditional vs. Direct Anterior**

**Traditional Hip Replacement**
- Do not cross legs
- Do not bend hip more than a right angle
- Do not turn feet excessively inward or outward
- Use a pillow between your legs when sleeping

**Direct Anterior Approach**
- Under doctor’s supervision, may be immediately allowed to move their hips
- May potentially avoid restrictions associated with traditional hip replacement

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**Potential Benefits of MIS with Direct Anterior Approach**

- Decreased hospital stay and quicker rehabilitation.
- Smaller incision and reduced muscle disruption may allow patients a shorter recovery time and less scarring.
- Potential for less blood loss, less time in surgery, and reduced post-operative pain.
- Risk of dislocation reduced.
- May allow for a more natural return to function and activity.

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Advantages of Direct Anterior

- MIS approach is better for patients
- No Hip Precautions
- Improved Control over Component Position

The Use of Technology in Hip Replacement

Why Navigation?

- Increased level of precision
- Confidence in component position
- Recovery room film is too late for changes
- Optimize surgical results

Robotics

- Advanced surgical planning
Robotics

50% within the safe “Box” at MGH

Robotic Assistance increased accuracy
4-6x compared to Manual

Technique with Technology

Surgical goals of hip replacement
• Pain relief
• Restoration of function/lifestyle
• Optimize patient outcomes
• Economics
DA THA

• Provide early and exceptional analgesia
• Low trauma surgery
• Early discharge and rapid rehab

Prevent the Bad Effects

• Pre-emptive analgesia
  − Celebrex
  − Spinal Narcotic
• Pre-emptive anti nausea
  − Reglan
  − Pepcid

Operative Management

• SPINAL anesthetic
• IV sedation
• Capsular injection

Post-Operative Management

• Gait training POD1
• Stairs and PT instruction
• Ideally same day ambulation
Questions?
Thank You

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