Arthritis: How Do I Know and What Do I Do?

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My ‘Brief’ History

- Born and raised in Chicago
- University of Illinois
- Residency in Wichita
- Fellowship in Phoenix
- Live and work in Wichita
Kansas Joint and Spine Institute
Kansas Joint and Spine Institute

- 6 Physicians
  - 3 Joint Replacement Surgeons
  - 2 Spine Surgeons
  - 1 Sports Surgeon
- NE Wichita
- Employ 35-40 Staff
- Physical/Aquatic
  - Therapy Center
Reasons for this Presentation

- Frequent advances in the field
- Information overload (news, internet, friends and relatives)
- New surgeries, new techniques, improving rehabilitation protocols
- Opportunity for patients to ask questions
Objectives

- Defining Arthritis
  - Injury vs. Wear and Tear?
- Will it go away?
- Treatment Options
- Lifetime Sentence?
- Next Steps?
Types of Arthritis
Osteoarthritis

- Classic “wear and tear” arthritis
- Progresses as patients age
- Common in knees, hips, shoulders
Osteoarthritis

- “Wearing off” of cartilage
- Causes inflammation/pain/swelling
- Leads to stiffness

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Rheumatoid Arthritis

- Approximately 10% of all arthritis
- Inflammation leads to joint damage
- Antibodies to the joint surface
Rheumatoid Arthritis

- Progresses throughout life
- Managed with aggressive medications by rheumatologist
- Often results in joint replacement
Common Injuries
Knee Injuries

- Knee Sprain
  - Medial Collateral, Lateral Collateral
  - Non-Operative Treatment
  - 8-12 weeks to heal
Knee Injuries

- **Meniscus Tear**
  - VERY common injury
  - Adolescent >> Later life
  - Not always injury
  - ‘Sudden’ onset
Meniscus Tear

- Sudden, sharp pains
- Catching, locking
- Treated with arthroscopy
- Full recovery typical
Arthroscopy
Hip Injuries

- Tendonitis
- Bursitis (Hip Pointer)
- Labral Injury
- Fracture
Psoas Tendonitis

- Groin pain
- Pain with hip flexion
- Due to overuse, new activities
- Treated with meds, physical therapy
Trochanteric Bursitis

- Very common cause of hip pain
- Lateral pain, tenderness
Trochanteric Bursitis

- Typically secondary to another issue
- Treated with NSAIDs, rest, heat/ice, topicals, massage, injections, PT
Labral Injury

- Sudden onset
- Groin pain
- Catching, locking
- Treated with arthroscopy
- Full recovery typical
Hip Fractures

- Several different types
- Middle age and older
- Due to fall, injury
- Treated with surgery
- Decreasing mortality
Outlook for Arthritis
Arthritis Prognosis

- Generally progressive
- Wax and wane
  - Activity
  - Weather (barometer)
  - Medical conditions
- Increasing stiffness, pain
Prevalence of Arthritis
Treatments for Arthritis
Nonoperative Treatments

- Activity modifications
- Non-steroidal anti-inflammatories
  - Ibuprofen, Naproxen, Aspirin, etc
- Ice/Heat
- Bracing
- Physical Therapy/Aquatic Therapy
- Injections
Nonoperative Treatments

- Activity Modification
  - Avoidance of stairs
  - Frequently resting when ambulating
  - Cane for support
  - Lifestyle changes due to pain
Nonoperative Treatments

- Non-steroidal anti-inflammatory drugs
  - Aspirin >> GI Problems, Bleeding
  - Ibuprofen, Naproxen >> GI?
  - Celebrex, Mobic >> Cost, BP problems?
  - Lodine, Relafen, Daypro >> GI? Effective?
Nonoperative Treatments

- **Ice/Heat**
  - Ice: Can minimize swelling
  - Heat: Can break-up swelling
  - Varying effects for different patients

- **Bracing**
  - Simple >> support, compression, warmth
  - Custom (unloader) bracing
    - Expensive, cumbersome, uncomfortable
    - Rarely long-term
Unloader Bracing
Nonoperative Treatments

- Physical Therapy
  - Exercises
    - Improve mobility
    - Increase strength
    - Decrease swelling
  - Modalities - Ultrasound, Ionophoresis
    - Decrease pain
    - Decrease swelling
    - Improve function
Nonoperative Treatments

- Aquatic Therapy
Aquatic Therapy

- Early, aggressive ROM exercises
- Minimal impact, non-loaded hip and knee therapy
- Resistance = improved strength
- Occlusive dressings required 2-3 weeks
Injection Therapy

- Steroid Injection
  - Cortisone, Celestone, Depomedrol
  - Usually mixed with local anesthetic (Lidocaine)
  - Typically effective very quickly
  - Can be repeated every 3-4 mos
  - Inexpensive, easy to administer
  - Most common injection
Viscosupplementation

- Synvisc, Hyalgan, Supartz, Euflexa
- Hyaluronic acid injections-intraarticular
- Typically 3 injections over 3 weeks
- Mechanism of action
  - Direct lubricant
  - Stimulates synovium to produce natural lubricant
- Pain=incorrect location
Nutritional Supplements

- **Glucosamine/Chondroitin Sulfate**
  - Proven useful through reliable research
  - Varying degrees of active ingredient
  - 2-3 mos. prior to determining utility

- **MSM**
  - Mechanism not well understood
  - Treats RA, snoring, muscle spasm, cancer
  - Not regulated, not proven
Surgical Treatments for Arthritis
Total Hip Arthroplasty
“Traditional” THA

- Posterolateral approach
- 8-12” incision
- 2-3 hr. procedure
- Frequent transfusions
- 5-8 day hospitalization
- Strict restrictions for life
New Techniques
Minimally Invasive Surgery
total hip replacement (MIS)

- Promises faster recovery, less surgery, less pain, equal results
- Google returns 547,000 results
- Popular in large cities (marketing?)
- MIS standard incision vs. two
  - incision technique
MIS Total Hip Replacement
MIS Hip Controversies

- Longer surgery (2-3 hrs. vs. 1 hr.)
- X-ray exposure
- Serious complications
  - Fracture
  - Malposition of components
  - Neurovascular injury
  - Muscle damage
  - Early revisions?
MIS Contributions

- More aggressive rehabilitation
- Intra-operative soft tissue management
- Comprehensive post-operative pain management protocol
- Earlier return to function
Bearing Surfaces
Worn Components and Osteolysis
Different Bearing Options

<table>
<thead>
<tr>
<th>Bearing Option</th>
<th>Wear Rate (microns/year)</th>
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<tbody>
<tr>
<td>CoCr/Polyethylene</td>
<td>200</td>
</tr>
<tr>
<td>CoCr/Crossfire® Polyethylene</td>
<td>20</td>
</tr>
<tr>
<td>Alumina/Crossfire® Polyethylene</td>
<td>6.2</td>
</tr>
<tr>
<td>Metal/Metal</td>
<td>4.3</td>
</tr>
<tr>
<td>Alumina/X3™</td>
<td>1.4</td>
</tr>
<tr>
<td>Alumina/Alumina</td>
<td>&lt;1</td>
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Hip Resurfacing
Replacement vs. Resurfacing
Hip Resurfacing

- Younger, more active patients
- Fewer long term restrictions
- Costly: very expensive components
- Unproven track record
- Likely to increase in popularity in the U.S. as it has in other countries
Total Knee Arthroplasty
X-Ray Evaluation
Misconceptions
Recent Advances
Minimally Invasive TKA

- 5-8 year history
- Marketing tool?
- Google returns 292,000 results
- Faster recovery?
- Less surgery?
MIS-Lessons Learned

- Quadriceps mechanism preservation
- Aggressive pain management
- EARLY physical therapy
- Shorter hospitalization
Computer Assisted Navigation
Navigation in TKA

- Not robotics
- Extra information during surgery
- Trackers around knee to pinpoint landmarks
- Precision cuts, placement of prosthesis
- NOT for every patient, yet
Navigation
Navigation Goals

- Standard surgery despite varied anatomy
- Reproducible alignment
- Correction of complex deformities
- Less invasive surgery?
Total Joint Aftercare

- Rehab
- Physical Therapy
- DVT Prophylaxis
- Restrictions
- Expectations
Inpatient Rehab

- Rarely required after uncomplicated TKA, THA
- Typically older, less healthy individuals living alone
- Typical stay 5-8 days
- ‘Step-down’ between inpatient and home
Physical Therapy

- More critical after knee replacement
- 2X/day in hospital, then 3X/wk X 3 wks.
- Full weight-bearing immediately
- Goal=less pain, increase ROM
## ROM Requirements

<table>
<thead>
<tr>
<th>Activity</th>
<th>Flexion Requirement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Walking</td>
<td>0-67°</td>
</tr>
<tr>
<td>Climbing stairs</td>
<td>0-83°</td>
</tr>
<tr>
<td>Descending stairs</td>
<td>0-90°</td>
</tr>
<tr>
<td>Sitting down</td>
<td>0-93°</td>
</tr>
<tr>
<td>Tying shoe</td>
<td>0-106°</td>
</tr>
<tr>
<td>Lifting your grandchildren</td>
<td>0-117°</td>
</tr>
<tr>
<td>Gardening</td>
<td>0-125°</td>
</tr>
<tr>
<td><strong>Triathlon provides</strong></td>
<td><strong>150°</strong></td>
</tr>
</tbody>
</table>
Long Term Restrictions

- NO impact activities (jumping, jogging)
- Limited squatting (flexion, adduction, internal rotation-HIP)
- Kneeling permitted
- Lifting up to 75 lbs, 50 lbs repetitive
- Permitted: biking, doubles tennis, light blue/green slope skiing
- Dental prophylaxis-for life?
Current Expectations

- Immediate full weight bearing (day of surgery)
- 2-3 days in hospital
- Walker 1 week, cane 1-2 weeks
- 3 weeks out-patient physical therapy
- Return to work/driving 4-6 weeks
- 15-20+ years before wear becomes an issue
Bilateral Total Knee Replacement

- Patient selection critical
- Healthy, motivated patients
- Very unhealthy patients (one anesthetic)
- Risk comparable or less than two staged surgeries
- Patient satisfaction improving
Operative Treatment Summary

- Total Hip Advances
  - Less invasive surgery
  - New bearing surfaces
  - Alternative procedures

- Total Knee Advances
  - Less invasive surgery
  - Computer assisted navigation
  - Rapid rehab protocols
Current Innovations
Summary

- Hip Resurfacing
  - Younger patients
  - High level activities
- Computer Navigation
  - High accuracy
  - Longer lasting?
- Aquatic Therapy
  - Low impact rehab
  - Better ROM?
Living With Arthritis
What to Expect

- Slowly progressive pain, stiffness
- “Good and bad” days
- Multi-modal treatment
  - Different combinations for different patients
  - Patient and symptom specific
- Not hereditary
- Not ‘destined’ for surgery
What to Do

- STAY ACTIVE!!!
- Talk to your doctor
Where To Get Information

- Arthritis Foundation
  - www.Arthritis.org

- American Academy of Orthopedic Surgeons
  - orthoinfo.aaos.org

- Dr Robert Cusick
  - www.KJSI.com
Questions?
Thank You

Robert Cusick, MD

www.KJ SI.com