Hip and Knee Replacements

What the PCP Needs to Know

Derek Ward, M.D.
Assistant Professor of Orthopaedic Surgery
Division of Adult Reconstruction
University of California, San Francisco

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Disclosures

- I have no disclosures
Outline

- The Basics of Hip and Knee Replacement
- What’s changed over the last decade
  - Longevity
  - Pain Management
  - Hospital Stay/Rapid Recovery
  - Thromboembolism prophylaxis
  - Risk Reduction

Utilization

- By 2030:
  - 3.5 million TKA (673%)
  - 570,000 THA (174%)

Projections of Primary and Revision Hip and Knee Arthroplasty in the United States from 2005 to 2030

By James Kuritz, PhD, Kevin Ong, MB; Edward Lau, MS; Thomas Vroom, PhD; and Michael Halpern, MHS, MD, PhD
Causes of Increased Utilization

- Aging Population
- Patients receiving arthroplasty at a younger age
  - Improvements in technology
  - Obesity

### Arthritis

- Cartilage Degeneration
  - Pain
  - Limp
  - Swelling
  - Loss of range of motion
  - Eventual deformity

- Causes
  - Osteoarthritis- “wear and tear”
  - Inflammatory arthritis
  - Trauma, old fractures
  - Osteonecrosis- “lack of oxygen to the bone”
  - Childhood/ developmental disease
Diagnosis

- Symptoms but...largely radiographic

- Radiographs – Weight bearing!
  - Knee: AP, Rosenberg, Lateral, Patellofemoral Views
  - Hip: Low AP Pelvis, Frog-leg lateral

- MRI is rarely necessary
  - Expensive

Inflammatory Arthritis

- Higher risk population

- New perioperative medication recommendations
Trauma

Osteonecrosis

- Steroids
- HIV/HAART
- Alcohol
Childhood Hip Disease

- Developmental Dysplasia
  - Spectrum of Disease

What Surgeries Do We Perform?

- Knee arthroplasty
  - Unicompartmental
  - Primary/Revision

- Hip arthroplasty
  - Primary/Revision

- Hip arthroscopy – Usually Sports medicine

- Knee arthroscopy - Usually sports medicine
What is Arthroplasty

- “Arthro”- joint; “plasty”- reconstruction
- Replacement of the diseased joint surface w/ a prosthesis (metal, plastic, ceramic)

Total Hip Arthroplasty (THA)

- Components:
  - Acetabular component/ socket/ shell/ cup- Titanium
  - Acetabular liner- PE vs CoCr vs ceramic
  - Femoral head- CoCr vs ceramic
  - Femoral component/ stem- Titanium
- Fixation:
  - cementless >> cemented, hybrid
Total Knee Arthroplasty (TKA)

- 3 compartments:
  - medial/ lateral/ patellofemoral

- Components:
  - Femoral component- CoCr
  - Tibial component- Titanium/CoCr
  - Tibial liner/ tray/ insert- PE
  - Patellar component/ button- PE

- Fixation:
  - Cemented >> cementless

Changes in Arthroplasty

- Longevity
  - Dramatic decrease in the implant “wearing out” with newer technology
  - Too young for arthroplasty?
    - 50s?
    - 40s?
    - 30?s....
  - Quality of life decision/balance of risk tolerance
Changes in Arthroplasty - Safety

- Too Old for Arthroplasty?
  - Quality of life decision
  - No difference in 1-year mortality when age-adjusted for expected mortality rates
  - Frailty and medical co-morbidities play a larger role than age

Changes in Arthroplasty – Pain Management

- Multi-modal, non-opiate based regimen
  - Spinal anesthesia
  - Regional nerve blocks/catheters
  - Intra-articular injection
  - Acetaminophen, celecoxib, gabapentin ATC

- Most patients are off narcotics in a matter of weeks
  - THA patients, 1-2 weeks
  - TKA patients, 4-6 weeks

- Change in expectations…..
Changes in Arthroplasty – DVT prophylaxis

- Most patients are on Aspirin 81mg PO BID x 4 weeks
  - No increased risk in DVT/PE
  - Decreased wound complications, infection, bleeding events
  - No need for injections/monitoring
  - Lower risk of needing a blood transfusion

- All patients
  - Neuraxial anesthesia
  - Rapid mobilization
  - SCDs

- Risk stratification
  - Enoxaparin, Warfarin, Xa Inhibitors

Changes in Arthroplasty – Hospital Stay and Rapid Recovery

- Outpatient procedures for some patients
- Average one night in the hospital if inpatient
- Very few patients require blood transfusions
- MOST patients go home (>90%)
- Less need for formal physical therapy
- ERAS = “Enhanced Recovery After Surgery”
Changes in Arthroplasty – Risk Reduction

- Diabetes
  - HgBA1c < 8
- Smoking/Tobacco
  - No Nicotine
- Obesity
  - BMI < 40
- Chronic Pain
  - Opiates – decrease dose by 50%
- Substance abuse
  - Minimum documented sobriety period

When Bad Things Happen…

- Low Complication Rate….but....
- Certain complications are devastating and easier to fix if diagnosed early
  - Infection
  - Loosening
- Don’t hesitate to refer any patient with new mechanical symptoms or pain after a hip or knee replacement
Key Points

- Large expected increase in the need for hip and knee replacement over the coming decades
  - High impact, cost-effective procedures

- Quality of life, frailty, and co-morbidities are more important than age in determining candidacy for surgery

- Advances have allowed for less painful surgeries with faster recoveries and low complication rates

- Address modifiable risk factors

- Refer arthroplasty patients with new symptoms early to catch complications

References


