HIPS: Treatment Guidelines and Exam

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Objectives

- Brief Anatomy/EXAM
- Hip Joint Replacement - THA
- Timing of Joint Replacement
- NEW and OLD HIP ISSUES
- Current Thinking
- New Horizons
Anatomy

- Anatomy HIP
  - Gluteus
    - Max
    - Med
    - Min
Anatomy

- Under the Glutei
- Short Rotators
- Sciatic nerve
Anatomy-Arthritis

- Anatomy HIP
  - Femoral head osteophytes
  - Acetabular “phytes”
  - Cysts
  - Loss of joint space
  - “Shortening”
Why do we hear so much about knee replacement??

- **Incidence of Joint replacement**
  - **Total Knee Replacement (TKA)**
    - Currently about 900,000/year in the US
    - Projected in 2030- 1.5 Million
    - Revisions about 5%
    - COST: 22.5 billion at 25K each
What about hips??

- Incidence of Joint replacement
  - Total Hip Replacement (THA)
    - Currently about 380,000/year in the US
    - Projected 2030-500,000
    - Revisions about 5%
    - COST: 9.5 BILLION
    - TOTAL 31.5 BILLION
LOTS OF REPLACEMENT parts!!

- Incidence of Joint replacement
  - Shoulder Replacement
  - Elbow Replacement
  - Ankle Replacement
  - Wrist/MCP Joints
  - Spine (Disc)
  - ALL COMBINED DO NOT APPROACH HIP OR KNEE REPLACEMENT
What is the hip OA pain??

The Title of this lecture is HIPS!

- Mostly anterior pain-Anterior structure
- Can be posterior buttock pain, lateral hip, occasionally numbness, lateral calf, low back, knee pain
- HALL MARK: GROIN PAIN
Intervention

- What?
  - Braces
    - Not really available for hips
  - Cane
    - Under used highly beneficial
Interventions

What?
- Therapy
  - WATER if at all possible - Arthritis Foundation
    - Gentle strengthening
    - Unlike the knee, the hip WILL NOT take abuse as readily as knee OA
  - Leg presses, knee extension, squats - the orthopedist will see these people sooner
If these don’t work then . . .

- What?
  - PAIN - Conservative measures
  - NSAIDS – PICK ONE -
  - Tylenol-Tylenol Arthritis-650mg
  - Glucosamine 1500mg/day
  - Narcotic pain meds Not standard of care for OA treatment!!
Hips and Knees are different

- Injections Steroid vs. hyalgan/synvisc/supratz
  - No FDA approval for anything but steroid
  - Every 3-4 months
- Really no limit if the patient is getting appropriate relief
Is it time yet ??

- X-rays are not the answer!!
  - They make a diagnosis
- Pain and function dictate care
- Fill up the “BUCKET” how ever you wish
When is Surgery??

- When?
  - This is the Ultimate question!
  - No set criteria
  - Patient specific
  - Different for all patients
  - When the BUCKET is filled
  - X-rays **do not** dictate timing
  - What should patient expect??
Expectations AFTER Surgery??

- What?
  - *Does physical activity increase after total hip or knee arthroplasty for Osteoarthritis: A systematic review.*
  - *Not Much!! Even to one year compared to controls*
  - This was supported by Dayton, Judd, Hogan June 2016, *American J Phys Med Rehab*
  - Need both patient reported scoring and functional assessment
AFTER 5 years from Surgery??

- *Randomized Controlled Trial longitudinal study, Arthritis Care Res, Apr 2016.*
- The surgical group caught up with the control group from a functional perspective
- However if you started low with pain and function you were at greater risk of being less active
Internal Derangement of the hip

- Physical Exam keys
  - Loss of **Internal Rotation** of HIP
  - Walks **ONTO** the affected hip
  - **GROIN PAIN**
  - Can be OA, impingement, AVN, infection, metal issues, tumor, synovial disorders
  - Knee patients walk “off of the knee”
HIP Impingement

- CAM or PINCER
- Either too much bone on the femoral neck or too deep a socket. Either way the “bones hits”
- There is soft tissue in between and can be torn—both labrum and cartilage
HIP Impingement

- CAM or PINCER
- If no OA then can repair torn cartilage and remove impinging bone
- Patient needs to have minimal to NO OA
- Better to be young and male for best outcomes
- Have the hallmark groin and “C-sign” pain
Other HIP pain

- “bursitis”
- Really not a bursa problem
- Abductor tendonitis
- Similar issues to the rotator cuff
- Injection with steroid and PT
- Beware of the Chronic Bursitis patient
Other HIP pain

- “bursitis”
- If injections help: Try 1-2 injections and PT then MRI of hip
- Patient may have tendonosis or a tear
- Sometimes this is missed on the reading
- Clinical questions about chronic “cipro” use
- If all negative then spine evaluation is warranted L5/S1 disc may affected fibers to superior gluteal nerve- RUNS the ABDUCTOR
Other HIP pain

- Hip Pain
- Facet OA - can be lateral but usually posterior - “pain in the butt”
- Intra abdominal process
- Hernia
- AVN
- Tumor
“Metal” HIP Problems

- Trunionosis, metal on metal, corrosion
- All have similar presentations
  - Different treatments
- HALLMARK: LATERAL HIP PAIN
  - Probably due to Abductor “destruction”
  - Check sed rate, CRP, cobalt, chromium, and MARS MRI for baseline
  - No set “number” dictates revision
  - These hips can act infected-elevated sed rate and CRP
Clinical Metal Issue??

- “I never got better after surgery”
  - OR
- “I was good and now I have more pain and **STIFFNESS**”
- At risk implants-recalled-modular neck, metal head with neck, metal on metal hip
Current Techniques

“Minimally Invasive Surgery”
- TKA/THA
  - What happens under the skin
  - More respect for tissues
  - Better hardware/Instruments-smaller tools
  - Better pain management
  - More time sensitive physical therapy
Current Techniques

- Posterior Approach-”traditional”
- Anterior Approach-ALL the RAGE!!
- Direct Lateral-falling out of favor
- Direct Superior-New and Improved
- SuperPath or Supercap-less common
Current Techniques

- J Arthroplasty 2016 Sep,
- 26,773 claims for THA Medicare
- No statistical significance based on surgical approach alone
Current Techniques

- Most techniques now involve allowing the patients to walk WBAT.
- SOME allow for no motion restrictions early in recovery period
- Getting up DAY “zero” decreased hospital stay by almost a full day
Current Personal Technique?

- WBAT with crutches until no limp
- No post op motion restrictions unless indicated by tissue or deformity
- Home within 24 hrs-33%
- Home within 48 hrs-70%
- Home same day- 2%
- Non cemented ceramic on ploy implant, Superpath approach using CT-3D planning and digital real time x-ray
Advances in Plastics/Metals/Ceramics

- UHMWPE (Ultra high molecular weight poly)
- Metal/poly
- Ceramic/poly
- Ceramic/Ceramic
- Metal/Metal - not any more (almost)
Advances in Plastics/Metals/Ceramics

- UHMWPE (Ultra high molecular weight poly)
  - Plastic has been cross-linked and we are seeing a 99% improvement in the wear rates
  - The plastic particles are what causes the breakdown of bone-osteolysis
  - Must follow these patients
Current Materials

- Advances in Plastics
Current Materials

- Advances in Plastics/Metals/Ceramics
  - Ceramics
    - Highly polish able
    - Minimal wear
    - Very little debris to activate bone destruction mechanism
    - Break? Less intra-operative options
    - NO CORROSSIVE POTENTIAL
WHAT’S ON THE HORIZON

??
Current Materials

- Advances in Plastics/Metals/Ceramics
  - Ceramics

- Hip Resurfacing
  - What is it??
Hip Resurfacing

- What is it??
- Recently FDA approved in the US
- OK to resurface femoral side
- Most data long term is from Europe
  - May be a good option for a younger patient
  - Data not yet clear
  - Increase in acetabular failure rate from primary THA ?? 5% and 5 years
OFF the Horizon

- Hip Resurfacing
  - Metal issues/pseudo tumors/pain
On the Horizon
(2010)

- More modularity in joint replacement
Off the Horizon

- Less modularity in joint replacement
On the Horizon (slide from 2008)

- Larger Heads in Hip replacement
  - Better stability
  - More motion
  - Less restrictions
Off the Horizon

- Larger Heads in Hip replacement
Change in Direction

- Leaning toward Smaller Heads in Hip replacement
  - Less trunionosis
  - Same modularity
  - Similar restrictions
The range of cup orientations that maximized stability and minimized wear (so-called ‘landing zone’) was substantially smaller than historical guidelines and specifically did not increase with head size, challenging the presumption that larger heads are more forgiving. In particular, when the cup is oriented to improve not only stability, but also wear in the model, there was little or no added stability achieved by the use of larger femoral heads. Additionally, ideal cup positioning was more sensitive to cup ante version than to inclination. 

On the Horizon

- More Computers in joint replacement
The Horizon has arrived

- More Computers in joint replacement
Real Time X-rays
3D CT Patient Specific
ROBOTS

- Currently “Haptic”
- Based on CT-highly accurate
- Expensive-
  - MAKO from Stryker is 700-900K
  - Soon may be taking 3 different x-rays and placing into a computer generated algorithm with the implant selected: this will tell the surgeon where the most stable place is to put the hip!!
DVT prophylaxis in Hip Replacement

- Patient specific DVT
- Apps for smart phones
- Moving away from LMWH and Coumadin to Aspirin
  - *Aspirin for thromboprophylaxis after primary lower limb arthroplasty: early thromboembolic events and 90 day mortality in 11,459 patients*
DVT prophylaxis in Hip Replacement


- National Joint Registry from England and Wales
- DVT and PE incidence and 90 day mortality
- “with individualized risk assessment. . . Aspirin is safe to use as the main agent in primary arthroplasty”
Tranexamic Guidelines
TXA

- Medication as had dramatic effect on intra and post operative bleeding
- Transfusion rates have dropped more than 50%. Some as high as 90%
- Less “blood” in postop course correlates with decreased drainage and lower infection rates.
On the Horizon

- More Biomaterials
  - Placing bioactive substances on implants
  - Better in growth
    - 3D printer foam metal
  - Quicker in growth to stability of implant
  - Antibiotic polymers
On the Horizon

- Pain Management- State of the ART
  - New
    - Day of surgery physical therapy
    - Positive messages- “Expect to do well”
AT the Current “Horizon”

- Pain Management - State of the ART
  - Local sensory nerve blocks in OR
  - TXA
  - NO Blood donation/cell saver
  - Transfusion rates < 1%
  - Toradol AM first post op day once block lessens
  - Tylenol 1000mg q6-oral or IV
  - Nausea meds-scopolamine patch
  - Narcotics PRN only
  - Morphine breakthrough
  - **0 PCA’s in last 5 years**
- AND what’s really on the Horizon?
On the Horizon!!

NEW ENGLAND BAPTIST HOSPITAL
FOUNDED 1893
125 PARKER HILL AVENUE
MAIN ENTRANCE
Thank You