The Active Adult with OSTEOARTHRITIS

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2020

Osteoarthritis

The most common arthritis worldwide affecting a majority of persons 65 and over

Common symptoms of OA

- Stiffness and decreased joint motion
- Pain – progresses through stages
- Swelling
- Joint deformity
- Instability

Generalized OA

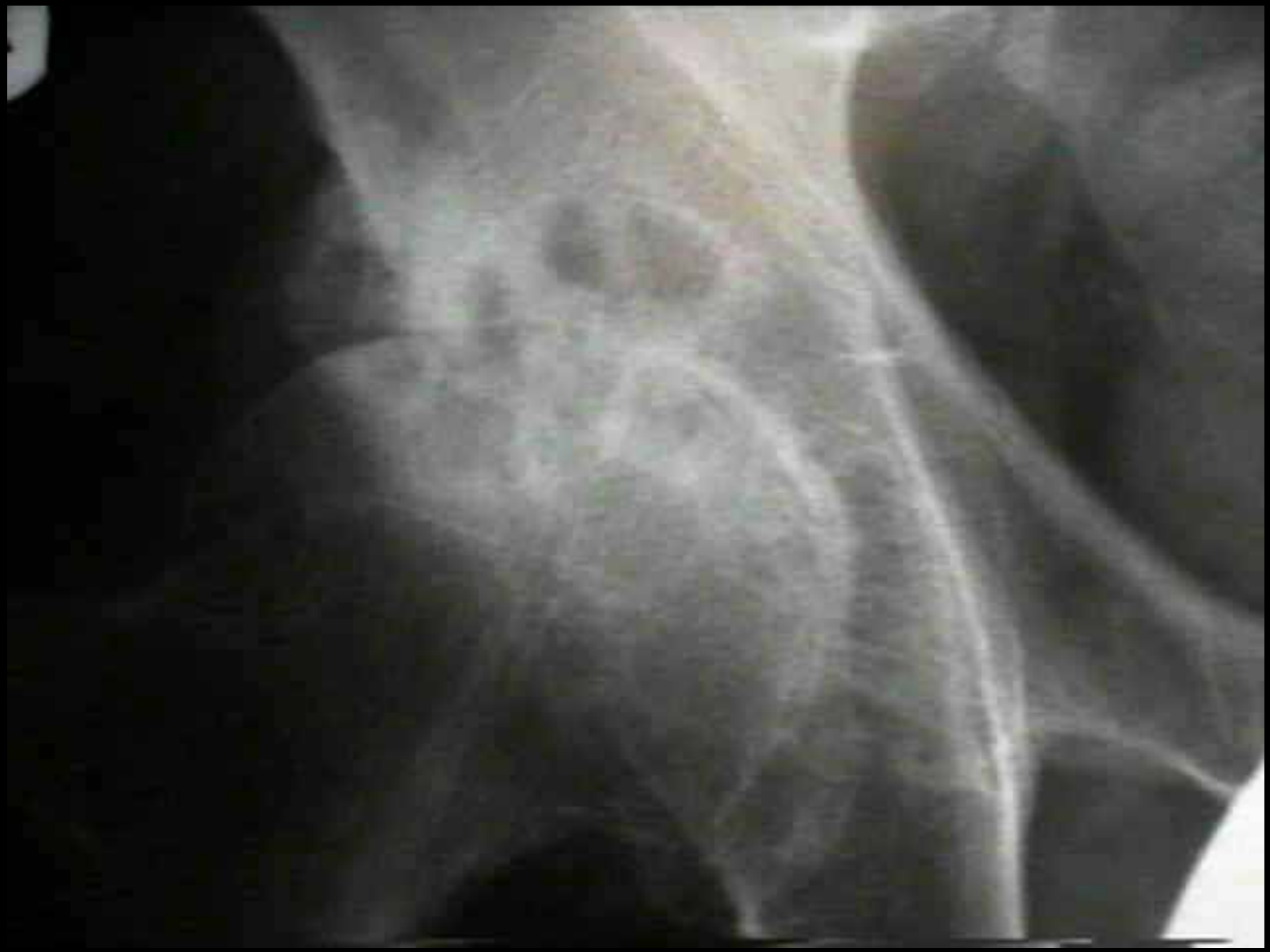
- Involvement of hands with Heberden and Bouchard nodes
  - Multiple Heberden nodes is key marker
  - Onset usually in middle age
- Involvement of spinal joints
- Involvement of 2 other joints
- Not likely a specific syndrome so much as a genetic subsceptibility to OA

Osteoarthritis Changes

- Process of continual destruction and repair
- Subchondral bone becomes thickened, sclerotic and eburnation occurs - pain from repetitive microfractures
- Subchondral cysts
- Osteophytes

Locations of Osteoarthritis

- Hip
- Knee
- Cervical and lumbar spine
- CMC, DIP, PIP and first MCP joint of hands
- Foot and Ankle



Heberden's nodes

Heberden's nodes, appearing as discrete postero-lateral swellings (index finger) or as a dorsal bar (middle finger) over the DIP joints.

DIP: distal interphalangeal.

Patient with hand osteoarthritis

Heberden's nodes (thumb, middle, ring, and little finger DIP joints), Bouchard's nodes (index finger PIP joint), and lateral radial/ulnar deviation (index PIP joint, ring DIP joint) in the left hand of a person with nodal OA.

DIP: distal interphalangeal; PIP: proximal interphalangeal; OA: osteoarthritis.

Diagnosis of OA

- Physical exam and XR are typically adequate
- MRI, CT and US useful in specific cases
- US and MR have shown that CPPD may complicate 30% of cases increasing to 60% in older patients
- CPPD crystals can create more inflammatory and pain issues

Treating the Patient with OA

- Rx is oriented toward maintaining function
- Reduction of pain
- Limiting ongoing injury
- Decreasing risk of complications such as surgical intervention or permanent joint damage

Nonpharmacologic Approaches to RX

- Emphasize exercise to maintain aerobic fitness
- Decrease stress of ADLs
- Weight loss when indicated
- Range of motion
- Improve strength

Changing Paradigm of OA and Exercise

- Old Paradigm: joint is damaged so maximal rest and limited stress is best strategy
- New Paradigm is POLICE
  - Protection
  - Optimal Loading
  - Ice
  - Compression
  - Elevation

Exercise as Therapy for OA

- Beneficial effect in OA of knee documented in 17 studies to reduce pain and improve function.
- Guidelines for optimal exercise type and dose are lacking but both biking and water exercise were very effective in Knee OA
- Trend to allow a mix of weight bearing – walking or hiking, strength work, Pilates or yoga, biking or swimming
- Alternate weight bearing and non WB days

Does Exercise Cause OA?

- Studies of runners suggest that risk is actually decreased
- Studies linking exercise to OA usually show that injury was actually the key factor
- Occupational studies probably demonstrate the same confounder

Jama 2020: Risks for Knee OA

- Large population study looked at activity levels and knee OA – 10 year f/u Xrays
- All subjects had mild symptoms and high function
- Low to moderate physical activity. OR 0.69
- Any vigorous activity OR 0.75
- Long term extensive sitting OR 1.0

Jama 2020: physical activity and knee OA

- 49.7% failed to perform any strenuous P.A. in 8 years
- 42.5% reported persistent moderate-to-high frequency of extensive sitting.
- Specific factors limit physical activity
  - Older age
  - higher BMI
  - more severe knee pain
  - non–college-graduate education level
  - weaker quadriceps
  - depression

OARSI guidelines for Medical treatment

- Topical non-steroidal NSAIDs were strongly recommended for individuals with Knee OA (Level 1A).
- OA and GI symptoms: COX-2 inhibitors were Level 1B and NSAIDs with proton pump inhibitors Level 2.
- OA and CVD or frailty: oral NSAIDs not recommended. Intra-articular (IA) corticosteroids, IA
- OA and CVD: hyaluronic acid, and aquatic exercise were Level 1B/Level 2 treatments for Knee OA, but not hip or other areas.

NSAIDS

- Used at both analgesic and therapeutic doses for OA – trend is for use minimum amount required
- Synovitis is rare so most patients do not require therapeutic dosing or continuous therapy
- Patients respond differently to various classes so change of drug should switch class
- Major drawback is the GI toxicity of all products and risk in patients with CVD or renal disease

Placebo, Tylenol, Opioids

- Acetaminophen/Paracetamol (APAP) was conditionally not recommended (Level 4A and 4B),
- use of oral and transdermal opioids was strongly not recommended
- Placebo response benefited 60% of patients

Duloxetine

- Pain relief from central nocioceptive pathways by selective inhibition of serotonin and norepinephrine reuptake
- Pain relief demonstrated in RCTs with RR 1.49 and 1.69 of 30 to 50% pain reduction
- Start with 30 mg but effective at 60 to 120 mg per day
- Nausea in 15 %, fatigue , dizziness, dry mouth

Tramadol for OA

- Downgraded benefit for pain to questionable clinical benefit *Cochrane 2019*
- Up to 50% more patients do experience a 20% or greater improvement than placebo
- Still only 20% of patients have strong response
- Side-effects led to RR of 2.6 of drop out

Corticosteroid Injection

- Studies suggest pain relief from 1 to 6 weeks with decline to no benefit by 13 weeks.
- NNT 8 with either 40 or 80 of triamcinolone or methylprednisolone
- By 6 months no difference shown in placebo-controlled trials
- Risk and side-effects minimal
- Long term PT and exercise programs provided as much pain relief

Hyaluranon – No longer recommended by AAOS

- Hyaluranon showed minimal benefit for pain vs. placebo that did not clearly meet clinically important difference
- Hyaluranon vs. CSI no clear benefit
- Side-effects of flares and wallet damage

Platelet Rich Plasma

- Meta-analysis of 10 trials showed significant benefit in pain reduction
- PRP outperformed placebo
- PRP outperformed Hyaluranon
- Trials had high risk of bias and unclear how many injections needed
- No long term or outcome-based EBM yet
- Relatively expensive

Supplements – limited EBM

- Most supplements show a lack of clinically important benefit
  - glucosamine, chondroitin,
  - vitamin D, diacerein, avocado soybean unsaponifiables (ASU),
  - fish oil
- curcumin (active ingredient of turmeric) small trials show benefit and no significant side-effects
- Boswellia serrata small trials with benefit and no significant side-effects

Activity After Knee Arthroplasty

- Diduch: 88 pts/ 114 total knees/ mean age 51
- 86 improved activity/ 24% to vigorous sport
- Bradbury: 159 pts/ 208 knees
- 65% returned to sports activity
- Bowling 91%/ golf 57%/ tennis 20%

Summary OA

- OA affects a majority of people sometime in life
- Exercise, weight loss and overall conditioning provide the cornerstone for successful disease control
- Medical options offer relief of pain
- Tylenol and Hyaluranon have lost favor
- TKR and THR returns older people to sport