Osteoarthritis – Medical treatments

Dr. Geoffrey Verrall
Sports and Exercise Physician (ACSEP)
Full time clinical practice (a new multidisciplinary practice)
South Australian Sports Institute (SASI) / Rowing Australia / Athletics Australia / Swimming
Australian and South Australian Cricket Team Doctor
Athletics Coach Hurdles / Tennis player
PART TIME RESEARCHER (NO Affiliation). 20 first author publications (Groin and Hamstring Injuries)
Adelaide, South AUSTRALIA

Presentation Outline

Key Messages
Outline
: Defining arthritis
: Presentations
: Investigations
: Medical Options
: Injectables
: "Exercise is Medicine"
: Surgical options

Key Messages - 1

"Exercise is Medicine"

There is no indication for resting limbs with osteoarthritis.

Resting does not alter the time course of the disease to any great extent

Key Messages - 2

The diagnosis is generally straightforward with pain generally localizing to the joint (medial knee, anterior medial groin for hip, lower back for back.

Investigations are helpful rather than being diagnostic

Key Messages - 3

The goal of treatment is to alleviate pain so as to facilitate movement.

Abolishment of pain is unlikely but there are many simple strategies that can be undertaken in a sequential manner in order to alleviate pain.

Key Messages - 4

Surgery has a role including arthroscopy.

Young people do not do as well with Joint replacement surgery as older more effected patients.

Night pain and unable to exercise (move) despite proper and committed medical treatment is the indication

Definition of Osteoarthritis

- **Defined as**
- degeneration of joint cartilage and the underlying bone

Epidemiology Osteoarthritis

- 10% of population
- If we live long enough we will get arthritis
- Morbidity greater than Mortality

Clinical Presentation - General

- Morning stiffness
- Pain after activity (warms up for activity)
- Progression over time
- Pain generally located at the injured joint

Clinical Presentation - Knee

- Medial side generally
- Tender medial joint line
- Ridge medially
- Presents after unaccustomed activity (stair climb on walk)
- Posterior knee / Calf / Baker's cyst / Acute and Chronic

Clinical Presentation - Hip

- Medial anterior groin pain
- Posterior buttock
- C sign with fingers
- Anterior thigh / Medial thigh / Medial knee
- (Pain goes down not up)
- Groin pain and hip pain with activity can be confusing – multiple structures, multiple possibilities

Clinical Presentation - Back

- Morning stiffness / Warms up
- Goes down leg when sitting / driving
- More debilitating when chronic

Clinical Presentation - Shoulder

- Pain all over
- The difference between a shoulder tendinopathy and a shoulder OA is the loss of ROM which tends to be global for OA
- Frozen shoulder lose ER

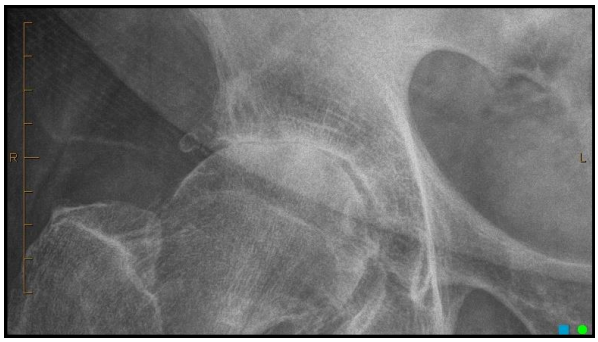
Investigations

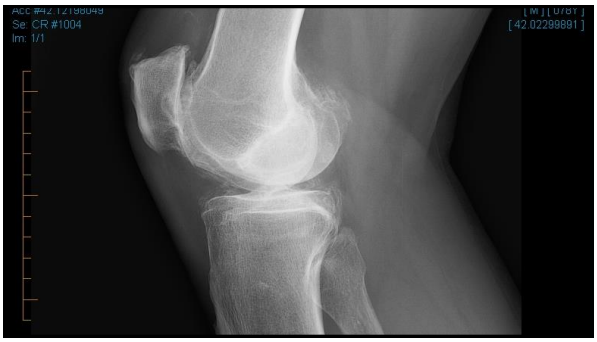
- Xray
- CT
- MRI
- Bone scan Tc99

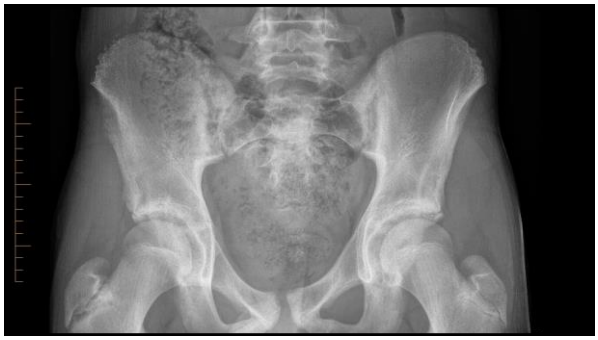
- Xray and CT ARE not temporal
- MRI and Bone scan ARE temporal

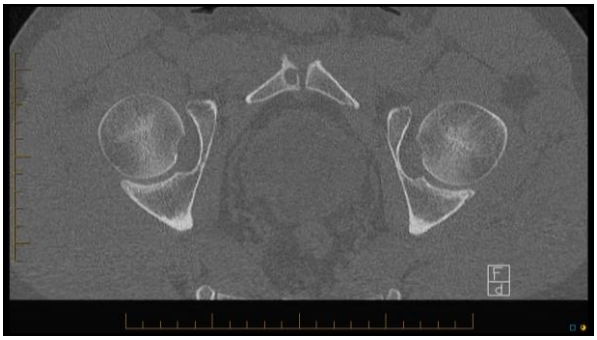
Xray / CT

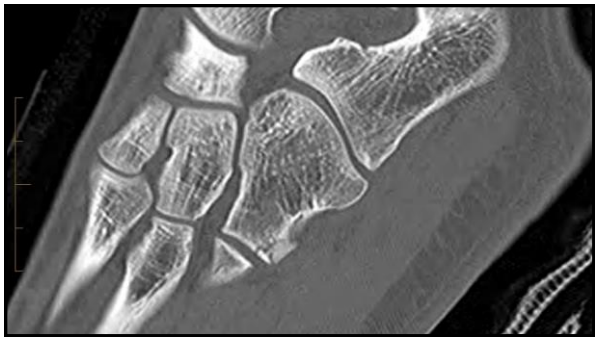
- Xray fine but remember the changes have been there for a long period of time (so may not be the cause of the pain)
- Primary bone Tumours - long bones "only", adolescent/20's – so generally not a concern
- CT – fractures, surgical planning





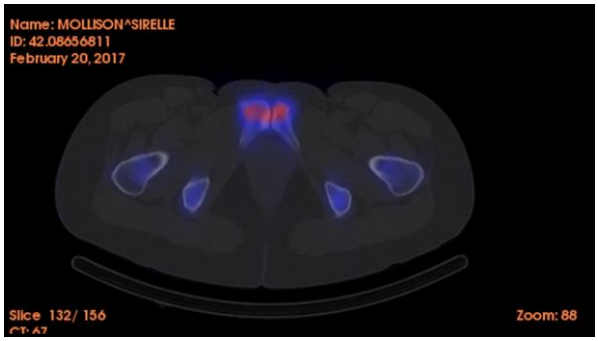






MRI / Bone scan

- Bone scan radiation dose – therefore I have not used a bone scan for a long period of time. I see no advantage over a MRI and a lot of disadvantages
- MRI
- (worth going through the views of a MRI and what they see)



MRI

- T1 – overall or anatomical view

Best for chondral thickness

- T2 – Fat suppressed view (looks for signal intensity changes like fluid)

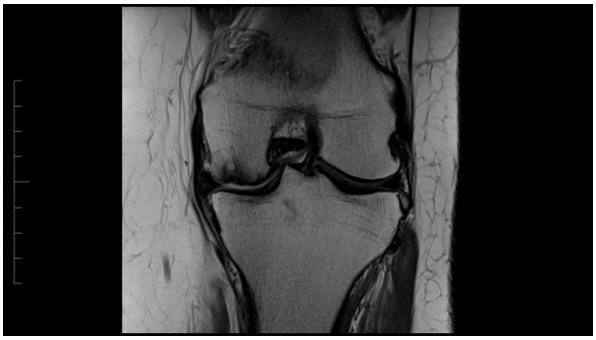
Best for soft tissue

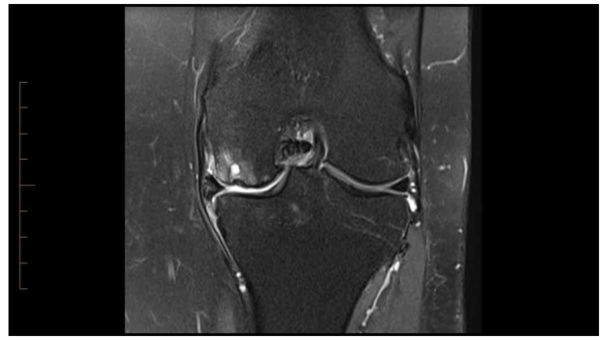
Best for what structure is injured

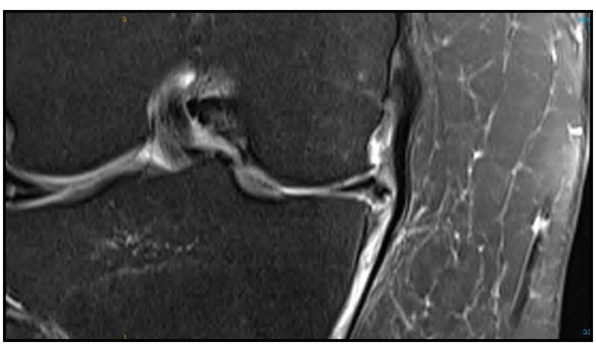
But not as good for chondral damage (Tesla)

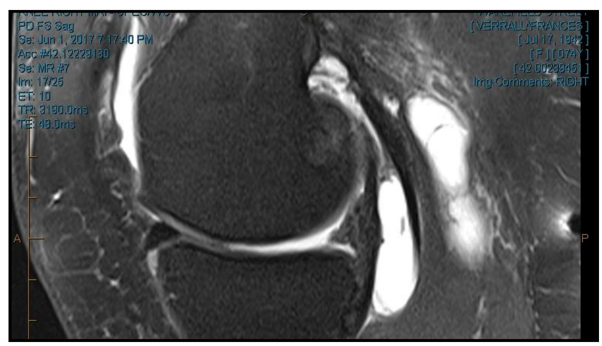
- T1 vibe views

Special views for stress fractures eg pedicles fast bowler backs





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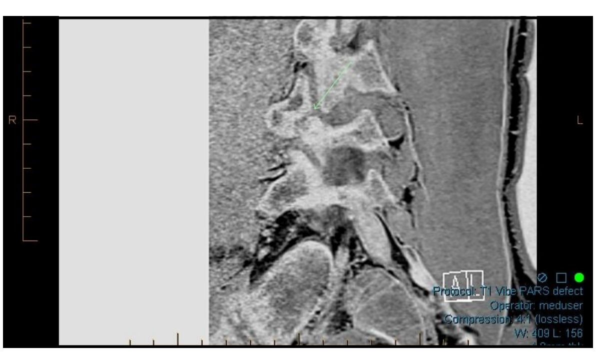
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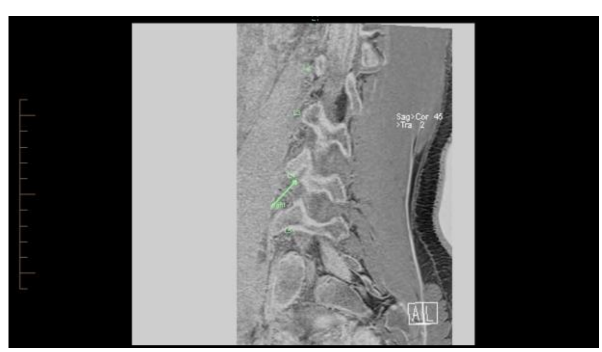
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Is there a definitive sign or test

- NO

Goal of Treatment

- With any consultation

Diagnosis
Cause of Diagnosis
Short Term plan
Long Term Plan

Goal of Treatment

- With any consultation

Diagnosis : OA (mild, moderate, severe)
Cause of Diagnosis (Injury, Genetics, Environment, Bad luck)
Short Term plan (Explanation, Pain relief/alleviate, Movement)
Long Term Plan (Movement, Functional ADL's, Quality of life)

- Comprehensive Care Plan (happy to be involved)

Pain alleviation

- Natural
- NSAID's
- Injectables

Corticosteroid
PRP (Platelet Rich Plasma)
Visco-supplementation
Other
Stem cell

- Surgical options

Arthroscopy
Joint Replacement

Natural

- Glucosamnine sulphate 1.5gm
- Tumeric (300-1000mg) daily
- Use every day for 2 months then reassess
- Expect to work in 10-30% (is that better than placebo)
- Not Fish oil
- Not Chondroitin
- Maybe Pentosan may be of benefit (but expensive) – Low molecular weight heparin, oral, nasal, injection. Increase hyaluronan

NSAID's

- Classification
- COX 1 and COX 2 inhibitors
- Newer ones COX 2 inhibitors
- Cyclooxygenase enzymes produce prostaglandins (mediators of pain and inflammation)
- Inhibiting this can cause gastric mucosal damage

NSAID's Classification

- SAFE but not as EFFICACIOUS
- LESS SAFE but more EFFICACIOUS

Choice

- Diclofenac up to 200mg per day for limited time period
- (has an unknown mechanism of action)
- (so some side effects are unique – bad dreams, arrhythmia, tiredness, excitement)
- Naproxen
- Meloxicam (preferential inhibiton of COX2 1:2)
- Celecoxib (COX2)
- Refocoxib (NEW ONE TO ME) not TGA approved

Diclofenac

- Major upper GI events with diclofenac were lower compared to naproxen and ibuprofen, comparable to celecoxib, and higher than etoricoxib. Arthritis Res Ther. 2015 Mar 19;17:66.
- Has an unknown novel Mechnism of Action
- COX1 and COX2 inhibitor of equal potency (1:2 Meloxicam, 2:1 Diclofenac)

Corticosteroids - Reputation

- Are they as bad as their reputation
- Where do they get there reputation

ORAL

NO LOCAL ANAESTHETIC

THICK PREPERATIONS

INCREASE RISK OF INFECTION

Corticosteroids - Modern

- More Water soluble (Celestone Chonodrose 1ml) – more the merrier NOT
- Less risk of a corticosteroid "flare"
- half life reduced
- Ultrasound directed (so they end up where you want them too)
- Not in the fat pad therefore in the knee with a straight (not flexed knee
- Efficacy not predictable but they generally do work
- (many patients having regular CSI)
- (remember the aim is to decrease pain so exercise can commence)

Platelet Rich Plasma – What is it

- Take blood out of body
- Reinject blood (blood injections)
- Spin and separate the plasma from the blood
- Can have PRP (Rich) and PPP (Poor)
- Reinjected under US control to joint
- What is Orthokine (same process except the PRP is filtered over glass beads)

Platelet Rich Plasma – Does it work

- Yes – Probably – Possibly
- The research has not gone down to maybe so that is good
- How long does it last – unpredictable
- Tends to work is less damaged joints (probably logically like most interventions)
- Side effects – flare (5-8%), infection, cost (no Medicare rebatee)
- Extra selling point – it may may a long term difference ?questionable
- I generally use CSI before PRP.

Viscosupplemetation – What is it

- Hyaluronan and Hylan derivatives
- And how it is meant to work – anti pain, antiininflammatory and restoration of the extracellular matrix
- High molecular weight (a hall mark of OA is the loss of high MW hylan in the synovial fluid)

Viscosupplemetation – Types

- SINGLE SHOT
- MULTIPLE SHOTS
- (Adant, Arthrum H, Artz (Artzal, Supartz), BioHy (Arthrease, Euflexxa, Nuflexxa), Durolane, Fermathron, Go-On, Hyalgan, Hylan G-F 20 (Synvisc Hylan G-F 20), Hyruan, NRD-101 (Suvenyl), Orthovisc, Ostenil, Replasyn, SLM-10, Suplasyn, Synject and Zeel Hyaln

Viscosupplemetation – Does it work

- Yes – Probably – Possibly (Cochrane Review supports a short term effect)
- The research has not gone down to maybe so that is good
- How long does it last – unpredictable
- Tends to work is less damaged joints (probably logically like most interventions)
- Side effects – flare (2-5%), cost ($500 per injection)
- Few patients come back for another injection

Movement

- A Start
- Assisted
- Long term
- Defining adequate exercise – for a person, for a joint, for Cardiovascular Health

A start

- 5 mins +2
- 2mins + 1
- No strength
- Mobility
- “Keep it simple”

Assisted

- Comprehensive Care Plan
- Ex physiology
- Physiotherapy
- Hand holding – Multiple assistants

Long term

- Weight loss (80% Intake, 20% Exercise)
- Exercise works best long term
- Classes

Defining adequate exercise

- For a person
- For a joint
- For cardiovascular health

Surgical Options

- Arthroscopy or Replacement

Arthroscopy

- Knee
- Hip
- Getting bad wraps
- Mechanical symptoms of medial knee can be meniscus but just as likely to be as a consequence od degeneration
- Logically we cannot repair the chondral damage process
- So how does it work

Arthroscopy – How it works

- The patient understands the next stop is a joint replacement
- Resets the pain
- Actually cleaning out the knee helps

Arthroscopy – Knee Hip

- Hip arthroscopy does not work for OA and is not a zero sum game
- Knee arthroscopy can work for OA (for a limited time) and is usually a zero sum game

Joint Replacement Surgery - Hip

- Best operation orthopaedics do – 95% satisfaction Hip
- GP needs to know – 2 approaches Anterior and on side
- End results are probably the same
- Less time in hospital with Anterior. Quicker recovery
- Pick a surgeon who does a lot of hip replacements as they probably have the best results irrespective of method
- Computer assisted (Marketing)

Joint Replacement Surgery - Knee

- Not as good for knee 75-90%
- Worse for young people
- Do not like the mobility loss
- Why is it worse for young people
- Use an orthopaedic score
- Function post surgery
- Function presurgery – OLD
- Function pre-surgery - YOUNG

Surgery - Back

- Single level disc disease with a radiculopathy
- Surgery only helps the leg pain not the back pain
- Fusions do ot work for people who want to be active and stay active

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There is no indication for resting limbs with osteoarthritis.

Resting does not alter the time course of the disease to any great extent

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The diagnosis is generally straightforward with pain generally localizing to the joint (medial knee, anterior medial groin for hip, lower back for back.

Investigations are helpful rather than being diagnostic

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The goal of treatment is to alleviate pain so as to facilitate movement.

Abolishment of pain is unlikely but there are many simple strategies that can be undertaken in a sequential manner in order to alleviate pain.

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Surgery has a role including arthroscopy.

Young people do not do as well with Joint replacement surgery as older more effected patients.

Night pain and unable to exercise (move) despite proper and committed medical treatment is the indication

Thank you for listening

Geoffrey.verrall@gmail.com
SPARC Sports and Arthritis Clinic
90 Henley Beach Rd, Mile End SA 5031
Sports and Exercise Physician
2 Registrars (one sitting final exam in 1 month)
Purpose built gym
Physio, Chiro, Dietician, Ex Physiology
AN OPINION
A MANGEMENT PLAN
A COMPREHENSIVE CARE PLAN FACILITATOR