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Hips and Knees – What are the options? GP Information

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Introduction

The Arthroplasty Unit at Oswestry consists of 11 specialist hip and knee arthroplasty surgeons. Five of us are full time at Oswestry whilst the other six split their time between either Shrewsbury or Wrexham undertaking trauma. We perform over 2000 primary joint replacements per annum making us the second largest unit by volume in the UK. We are also probably the largest single centre for revision hip and knee arthroplasty in the UK, undertaking in excess of 300 revisions per year.

Our infection rates remain amongst the lowest in the country (Surgical Site Infection National Annual Review) whilst our overall patient satisfaction and performance remains excellent. In the annual national patient survey we were No.1 in 1997 and have remained in the top 5 since.

We aim to provide clinical excellence whilst remaining an approachable, local service for our patients and GP colleagues.

History and Examination

- Age: <50, 50 – 65, >65 years.
- BMI: <35, 35-45, >45.
- Specific symptoms
- Red flag points
- Examination

Causes of Arthritis

- Osteoarthritis – most common (90%)
- Inflammatory arthritis – Rheumatoid, Psoriasis, Gout, Mono-arthritis; listen out for in the history. Is the disease active or quiescent at the moment or has the disease burnt out and led to secondary osteoarthritis? If active will need medical Rx, consider referral to Rheumatologist. Look for skin changes of psoriasis. Is it a solitary joint or are there multiple joints involved?
- Avascular Necrosis (AVN) – Steroids, Radio/Chemotherapy, Alcohol; Increasingly common, needs only 3 weeks of steroid therapy at any point in their life to run risk of AVN. Rapid onset of symptoms with often a normal x-ray at the start – requires a high index of suspicion, if in doubt get MRI or refer straight away. Can be treated by decompression rather than joint replacement, if detected early enough (before x-ray changes). Previous history of cancer and chemo/radiotherapy.

Rapid rehabilitation

- Day of surgery admission.
- Pre meds include gabapentins, NSAIDs.
- Light GA plus spinal plus 150mls local anaesthetic infiltration plus adrenaline.
- No opiates at all.
- Mobilise patient with physio on DAY OF SURGERY.
- No post-op nausea or vomiting, no 'hang over effect' from heavy GA.
- Very little in the way of pain post op; Regular gabapentins and NSAIDs for 3 days, iv paracetamol whilst in bed.
- Reduced risk of DVTs due to early mobilisation.
- Can go home as soon as mobile safely.

Glossary of common terms

AVN	Avascular Necrosis
DDH	Developmental dysplasia of the hip
HTO	High Tibial Osteotomy
Mono arthropathy	Single joint inflammatory disease, could be secondary to infection (often food poisoning).
Perthes	Disease in children akin to avn in adults.
PFJ	Patellofemoral joint
RA	Rheumatoid arthritis
SUFE	Slipped upper femoral epiphysis
THR	Total hip replacement
TKR	Total knee replacement
Valgus	Deformity in coronal plane away from midline
Varus	Deformity in coronal plane towards midline
Vastus medialis	Most medial head of quadriceps, important for patella stabilisation

- ① Vazquez-Vela et al. Patient demographics as a predictor of the 10 year survival rate in primary total knee replacement. *J Bone Joint Surg (Br)* 2003; 85 (1) : 52-56.

Joint replacement options

- Based on age of patient and predicted activity level.
- Longevity of implant
- Preservation of bone stock
- Ease of revision
- Available bearing surfaces

How long will it last?

- THR: 15 – 20 years
- TKR: 10 – 15 years

Hips under 50 years

- Uncemented
- Ceramic bearing surface
- Larger diameter heads
- Resurfacing and Metal on Metal Hips, currently the subject of an MHRA review

Hips 50-65 years

- Uncemented
- Ceramic bearing surface
- 28 – 36 mm head size (off the shelf)

Hips over 65 years

- Cemented
- Metal on poly
- Exeter stem, elite cup

Knees

Total knee replacement best results in all groups. May consider High tibial osteotomy in younger male patients to offload medial compartment and preserve joint for future TKR.

Revision surgery

- Failure/loosening – infected or aseptic.
- Refer EARLY
- More than happy to see patients before problems get severe and surgery gets more difficult

- Secondary to childhood problems – DDH, Perthes, Infection; Much more common than it used to be. Check childhood history including 'click hips' for DDH, treatment in plaster spicas or long term hospital bed rest as children for Perthes. History of infection in the past. Slipped upper femoral epiphysis – very, very rare to have problems without surgery, so check for history of surgical pinning, the metal may well have been removed long ago but the risk of AVN is still there.

Hips - specific symptoms

- Analgesia: Maximal use? Duration of usage, timing of medication.
- Pain: Groin, Thigh, Knee. Shin pain in 30%. Can be difficult to differentiate between the spine or knee as sources of pain. With knee pain ALWAYS think hip.
- Wakes at night? Most important factor, severely affects quality of life.
- Shoes, socks, cut own toenails? Determines functional ability of the hip due to stiffness and pain.
- Walking distance? With and without aids. Check they don't have to stop due to shortness of breath or claudication symptoms before hip/knee pain stops them.
- Stairs: one at a time, hand rail, stair lift?
- Aids / orthoses: Stick (which hand), insoles? Opposite hand for stick.

Hips - red flag points

- Injury: recent, within 2-3 years?
- Drugs: Steroids, Alcohol, Radio/chemo?
- Cancer: Primary or metastatic, Rx related?
All above are risk factors for AVN.
- Inflammatory disease: RA (active?), skin disorders (infection, PSORIASIS), gout?
- Childhood disorders: DDH, Perthes, SUFE including treatment.
As discussed previously, these are on the increase.

Hip examination

- Range of abduction; Stabilise pelvis and examine supine, compare to other side, look for pain or stiffness (pelvis will tilt).
 - Internal rotation – good indicator of early or medial pole OA. Can be done supine with the hip flexed up to 90 degrees, turn leg out to assess internal rotation. An easier method is to sit the patient on the edge of the couch and gently swing the foot like the pendulum of a clock, this will isolate hip rotation as the source of any pain or stiffness.
 - Impingement testing – FABER vs FADIR*
- FABER:** • Flexion • Abduction • External Rotation • Sacro-iliac disease
FADIR: • Flexion • Adduction • Internal Rotation • Impingement

Knees – specific symptoms

- Analgesia: Maximal use?
- Wakes at night?
- Walking distance?
- Stairs: one at a time, hand rail, stair lift? Is it worse going up (OA) or coming down (PFJ arthritis).
- Aids / orthoses: Stick (which hand), insoles? Stick in same hand.
- GIVING WAY – patello-femoral disease. Classical symptom as patient can't fully extend knee and so it feels much weaker.

Knees – red flag points

- Injury: recent, within 2-3 years? Meniscal tears, previous surgery (specifically open meniscectomy).
- Twisting injury: onset of swelling? Immediate swelling with nwb status = anterior cruciate ligament tear unless proven otherwise. Most other swelling takes at least overnight.
- Inflammatory disease: RA (active?), skin disorders (infection, PSORIASIS), gout? Knees affected early or first in most of these disorders. Consider aspiration and microscopy for crystals etc. Check ESR and CRP bloods. Consider rheumatologist if early on.

Knees – examination

- Hips first!
- Gait – lack of full extension; obvious if you look for it in terminal swing phase. Torn meniscus or PFJ problems.
- Fixed deformity – flexion, varus/valgus; Check to see if you can correct deformity passively. Fixed deformities may require more constrained knee replacements (bigger surgery).

- Joint line tenderness; medial OA or meniscal tears if acute in younger patients.
- PFJ – Clarke's test (only once!) Classic for PFJ arthritis but is painful.
- In very swollen knees it is either fluid or synovium. If fluid you can tap or ballot the patella, if synovial you cannot even get hold of the patella – think inflammatory arthropathy, may require medical Rx or even synovectomy.

What not to miss 1

- AVN risk factors for hips:
 1. Steroids
 2. Alcohol
 3. Cancer Rx
 4. Injury/surgery

What not to miss 2

- Inflammatory disorders
 1. Rheumatoid
 2. Psoriasis
 3. Gout
 4. Mono arthropathy
- Rapid onset of symptoms... leads to rapid bony destruction. Often reported as infection on x-rays.

Treatment

- Treat underlying cause
- Analgesia – NSAIDs, paracetamol, codeine, opiates.
- Lifestyle modification
- Alter mechanics – shoe raises, insoles, walking stick, lose weight, build up muscles.
- Why lose weight?
10 year survival rate for TKR in obese male patients under 55 years of age at surgery is less than 40%. ①
- Risk of infection for THR if BMI>40 is over 10% (cf 0.5% at RJAH).
- Physio regime is useful for PFJ arthritis - Target vastus medialis
Failure rate of PFJ replacement at 5 years is up to 10%.
- Total knee replacement has best longterm results with over 95% survival at 10 years.