How I Do It: Total Knee Replacement

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Patient Selection

- Symptomatic hip pathology requiring TKR
- Engaged with day case pathway
- No unstable medical co-morbidity requiring in-patient management
- No high dose opioid based analgesia /chronic pain regimen pre-operatively
- Suitable social support

Pre-operative Preparation

From booking:

- Pt counselled to expect DC procedure
- Nurse led pre-assessment process completed
- Participation in 'joint-school' patient education programme

On the day:

- Listed first on theatre list (ideally)
- Withhold ACE inhibitor/ A2RB drug on day of and day before surgery
- Carbohydrate drink 2hrs pre-op

Pre-medication:

- Paracetamol 1g
- Ibuprofen 1600mg SR (if not contraindicated)
- Oxycodone MR 10mg (5mg dose if age >70)

Anaesthetic Technique

Spinal:

- 3 – 3.4ml hyperbaric 2% Prilocaine
- NO intrathecal opioid

Sedation:

- Aim to minimise/ avoid. If required then low dose Propofol TCI with capnomask.

Local Anaesthesia:

- Ultrasound guided saphenous nerve block (0.25% levobupivacaine up to 20mls) + Surgical infiltration (ensure maximal LA dose not exceeded with combined technique)
- Antiemetics: (dual agents as standard)
- Dexamethasone 6.6mg IV
- Ondansetron 4mg IVAntiemetics: (dual agents as standard)
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Intra Operative Care

Goal directed:

- Normothermia: proactively warm patient with forced air blanket (commence pre-op) & fluid warmer
- Normovolaemia: IV fluids 1000-2000mls (warmed)

Blood Conservation:

- Tranexamic Acid 1g IV start of case + further 1g at end of case (dose reduced for eGFR<50 and or weight <50kg)
- Cell salvage collection **routinely**

Antibiotic Regimen:

- Teicoplanin (slowly in 100mls n/saline) & Gentamicin [weight adjusted doses]
- Thromboprophylaxis: mechanical- foot pump used intra-operatively & until mobilisation. Dalteparin 5000units (weight adjusted) sc pre-discharge.

Key recovery priorities:

- Manage any PONV aggressively
- Commence oral fluids
- Fortisip 200ml drink

Surgical Technique

- Routine TKR technique, standard medial parapatellar approach
- Tourniquet only inflated for cementation
- Local Infiltration of Anaesthetic to divided tissue, periosteum and subdermal fat layers. 80 ml 0.125% levobupivacaine or 40mls 0.25% levobupivacaine according to individual surgeon's preference.
- Careful wound closure in layers to include continuous absorbable suture to skin, plus tissue glue

Take Home Medication

- Paracetamol 1g qds
- Ibuprofen 400mg-600mg po qds 5/7 (if no contraindication) + PPI cover (Lansoprazole 15mg)
- Oxycodone MR 10mg po bd **for 5 post op doses** (*5mg if age >70) **with reinforced non continuation of this via discharge summary (automated process)**
- THEN step down on Day 3 to: Codeine 30-60mg po qds OR Tramadol 50-100mg qds if codeine intolerant for 3/7.
- Ondansetron 4mg po tds 2/7
- Macrogols 1 sachet po bd 5/7
- Dalteparin 5000units sc od for 2/7 (+ sharps bin) then step down onto:
- Aspirin 150mg po od 14/7 unless other anticoagulation plan in place eg warfarin/ clopidogrel/ DOAC then usually restart this day 1 post op

Post operative care

- Patient fulfils all standard daycase discharge criteria and demonstrate satisfactory mobilisation/ transfer abilities commensurate with safe discharge
- Xray taken pre-discharge and reviewed by surgeon
- Day 1 nurse led telephone call from DSU
- In-house 'orthopaedic outreach' nursing team visit patient in community; days 1,5,10 & 14 to support. Tasks include wound reviews, medication assistance, performing post op blood tests/ vital signs monitoring.
- Direct telephone access to this service for patients

Organisational issues

- Theatre listing – patient needs first (or possibly 2nd) slot on a list
- Consider your facilities estate resources to build your pathway; location of clean air theatres & day case discharge facilities.
- Working hours of MDT support staff eg: physios may not align with time of patients discharge
- Post-operative support for patients; diverse ways this may be able to be provided. Bespoke solution to your unit may be needed

Common Pitfalls

- Short acting spinal technique required to ensure full offset of sensory/motor block to allow adequate time for mobilisation. If unanticipated complications/ delays occur duration of block may become an issue.
- All staff need to be 'on message' so that the patient has confidence in the daycase pathway
- First mobilisation hypotension – we have found the 'fortisip' drink invaluable in reducing this, alongside good hydration and dual antiemetic regimen

Anticipated Day case Rates

- Not all patients will be suitable for daycase management.
- Estimates indicate approx. 20% of a waiting list cohort may be DC suitable