Department of Orthopaedic Surgery (non-arthroplasty) - Guideline for pre-anaesthetic work-up by surgical residents and interns

Introduction:

The Department of Anaesthesia and Acute Pain Medicine can provide important guidance on the perioperative care of your patients. In addition to providing anaesthesia, we have specific expertise in:

- assessing perioperative risk
- optimisation of medical conditions prior to surgery
- planning post-operative care including acute pain management

The Department of Anaesthesia and Acute Pain Medicine is able to offer the following services in order to help with appropriate pre-anaesthetic work-up and optimisation of your surgical patients:

- Review in PAC-Anaesthesia for elective surgical patients (often possible at short-notice)
- Review on the ward for in-patients or urgent cases
- Contribution to and presentation at case-conferences or MDM's
- Phone advice where appropriate
- Review of notes and telehealth-consult with patient (especially for country patients) to help work out the best course of action

Below is a guide for pre-anaesthetic work-up for patients having orthopaedic surgery other than arthroplasty. There is a separate set of guidelines for arthroplasty surgery. It should be used to help guide the following situations:

- When to refer to PAC-Anaesthesia
- When to notify the Orthopaedic Surgery Clinical Lead Anaesthetist (Dr Will Watson, contactable via switch) or the Anaesthetist In-Charge (4471) if a patient is scheduled for surgery
- What investigations to order pre-operatively (that are in addition to the investigations required by the surgical unit)

    - Basic blood tests, including FBE, U&E and Gp & hold may be indicated depending on the nature of the procedure and patient factors. They are not considered here.
- When to book an HDU/ICU bed

This is intended to be a guide only, and not all patients or operations will fit neatly in to this approach. The Anaesthetic Department is always available to offer advice and help.

Referral Guidelines:

Low-risk and Intermediate-risk Operations:

- Foot and ankle surgery
- Arthroscopy
- Removal of small soft tissue and bone tumours
- ORIF for fractures distal to the elbow or knee, or clavicle

Patients having low-risk or intermediate-risk operations rarely need referral to PAC-Anaesthesia, complex pre-operative investigations or an HDU bed. Exceptions to this include:

- Patients with confirmed or likely significant cardiac disease, in particular moderate or severe aortic stenosis, moderate or severe pulmonary hypertension, symptomatic cardiac failure or symptomatic or unstable ischaemic heart disease
- BMI > 60
- Patients unable to achieve 4 METS (eg. Climb a flight of stairs)

Patients who fit in to any of these categories should be treated as for “high-risk operations” below.

High-risk operations:

- Major tumor cases including hemipelvectomy, sacrectomy, major amputations
- Major non-arthroplasty hip and pelvis cases such as osteotomy
- IM nail, megaprosthesis or similar for pathological fracture secondary to tumour

Patients having high-risk operations are more likely to need pre-anaesthetic investigation and/or review in PAC-Anaesthesia. **All major tumour cases should be referred to PAC-Anaesthesia. They may also need an HDU bed booked.** Many soft tissue tumours (eg thigh, buttock) should not be considered “major tumour cases” as the surgery is unlikely to be difficult or prolonged. Below is a guide to investigations that may be appropriate (adapted from Up to Date).

Investigations:

- ECG
    - indicated only for patients > 60 years old and those with cardiac disease, peripheral vascular disease, cerebrovascular disease and/or vascular risk factors
- CXR
    - rarely indicated and should not be routine; occasionally useful if there is clinical suspicion of undiagnosed respiratory disease; not useful for assessing severity of CCF or COPD, or for predicting the risk of post-operative respiratory failure
- TTE
    - Indicated if the patient has had an abnormal TTE or confirmed cardiac disease (eg cardiac failure, pulmonary hypertension, aortic stenosis) and no TTE in the last 2 years
    - May also be indicated if the patient has undiagnosed shortness of breath or clinical evidence of undiagnosed cardiac disease (eg a new murmur, new atrial fibrillation, signs of cardiac failure)
- Spirometry
    - Not generally useful for risk stratification above and beyond clinical assessment
    - Unlikely to be useful in patients who already have a diagnosis of COPD or other respiratory disease
    - Occasionally useful for assessing response to treatment or diagnosing the cause of dysponea
- Non-invasive cardiac stress tests (dobutamine stress-echo or thallium stress test)
    - May be considered if the patient has symptoms suggestive of myocardial ischaemia, especially if pre-operative revascularisation (CABG or PCI) could be considered; May also be indicated if the patient cannot achieve 4 METS and is having intermediate or high risk surgery
    - If you are considering ordering a non-invasive cardiac stress test based on clinical suspicion then please also discuss these patients with the anaesthetist doing the list (via ext 14471) or the Orthopaedic Surgery Clinical Lead Anaesthetist. The Department of Cardiology and/or Perioperative Medicine will also need to be involved to ensure appropriate follow-up.

Mandatory referral to PAC-Anaesthesia:

- Major tumour resections such has hemipelvectomy, major amputations or sacrectomy
- Other tumour cases with an expected duration of > 8 hours

Fe-deficiency anaemia:

- All patients with Fe-deficiency anaemia detected pre-operatively who are having major orthopaedic surgery should have pre-operative IV iron replacement and referral to PMU

Other situations:

Other situations in which referral to PAC-Anaesthesia or discussion with the anaesthetic department will be useful:

- Past-history of anaesthetic complication/difficulty
- Severe chronic pain or opiate tolerance
- Severe liver disease
- Significant pre-operative malnutrition or anaemia

ICU/HDU beds:

- The following situations usually require a post-operative HDU bed:
    - Hemipelvectomy
    - Other major tumour cases involving significant blood loss and very prolonged surgical time (eg major cases involving multiple surgical units)