Scrubbing up for Orthopaedic Procedures: Preparation and Role of the Scrub Nurse

Abstract

This lecture looks at the duties of the scrub nurse in detail in orthopaedic theatre nursing. It discusses scrubbing up and gloving and also draping and assisting in theatre. It takes a close look at instruments used in orthopaedic surgery and orthopaedic surgery itself.

Learning Outcomes

- Confidence in scrubbing up, gloving up and assisting in orthopaedic surgery
- Understanding of and confidence with orthopaedic instrumentation

Course Notes

Duties of the scrub nurse

- Drape patient/ prepare instrument trolley - Arrange instruments according to order in which they will be needed. This is where knowledge of the surgical procedure is helpful.
- Maintain order and cleanliness of the instrument trolley(s) - A damp swab is useful to wipe over instruments before they are replaced on the trolley.
- Pass instruments as appropriate - Again, knowledge of the procedure is important here to try and gauge what the surgeon may want next. Instruments should be passed firmly with the finger rings or handles in the surgeon's hands.
- Help provide haemostasis and suction - This can be achieved by using haemostats diathermy, suction or swabbing.
- Retraction of soft tissue.
- Maintain a clean and clear operating field - This reduces the likelihood of dropping instruments.
- Keep account of all swabs and sharps - Counts should be carried out before the procedure and before closure. Care should be taken with sharps ensuring that they do not pierce through any drapes.
- Communicate with circulating staff and anaesthesia when relevant - For example if there is any excessive haemorrhage or movements by the patient.
- Provide lavage when needed.
• **What makes orthopaedics different**

  - Many orthopaedic surgeries use implants meaning that infection involving these can be catastrophic and lead to complications such as osteomyelitis and implant failure.
  - The use of powered and specialist equipment. Knowledge of these is paramount to avoid breakages and misuse.
  - The fact that orthopaedics can be quite a lengthy and technical procedure means that often a scrub nurse will be required.
  - Having a scrub nurse will reduce operating time thus risk of infection.

**Scrubbing up**

  - There are a variety of theories about how is best to scrub up for any surgical procedure such as the timed method and brush stroke method.
  - Following the WHO 6 step method followed by a scrub for five minutes with Chlorhexidine Gluconate and a scrubbing brush should be sufficient.
  - Use of a dispoasable gown and the closed gloving technique should be used

**Double gloving**

  - Traditionally double gloving is used when implants are used and an infection would be catastrophic such as hip replacements and TPLO’s.
  - Studies have shown that approximately 31% of surgical gloves have holes in them at the end of surgery (Shmon, 2003).
  - Double gloving will provide an extra layer against full thickness perforations but double gloving can also be uncomfortable and reduce dexterity.
  - Decision of the surgeon in charge.
  - There are certain gloves available which are a different colour and when worn beneath normal latex gloves they can make perforations stand out thus making detection easier.
Examples of some orthopaedic procedures

Cruciate ligament repair
• Tibial Plateau Levelling Osteotomy (TPLO)
• Tibial Tuberosity Advancement (TTA)
• Extracapsular repair

Arthrodesis
• Carpus
• Tarsus

Fracture repairs
• Internal Fixation
• External Skeletal Fixation (ESF)

Joint Replacements
• Total Arthroplasty of the Elbow (TATE)
• Total Hip Replacement (THR)
• Knee replacement

Draping for orthopaedic procedures

In order to avoid strikethrough which can contribute to the risk of infection it is advisable that disposable drapes are used for orthopaedic procedures.

Mainly involving a limb therefore the limb is hung from a chain or drip stand to enable for four quarter draping around it. Once the four drapes are on then the foot can be covered in another disposable drape then covered with a sterile cohesive bandage.

Adhesive drapes are often used for orthopaedic procedures such as ‘Opsite’ or ‘Ioban’. They provide an extra barrier over the skin although their use in minimising bacterial counts is debatable (Owen and Holt, 2007).
Common instrumentation

• Drill and components - Drill holes for a screw to be placed
• Drill guide - To help drill a hole in the correct place
• Tap - Create a thread to aid in placing a non self-tapping screw
• Depth gauge - To measure a hole once it has been drilled
• Stifle distractors
• Periosteal elevator - To separate periosteum/ soft tissue from bone
• Nerve hook - Mainly used in neurology but useful in cruciate surgery to manipulate structures within a joint ie, the meniscus
• Arthrodesis, kirschner wires and intramedullary pins - Used directly for fracture fixation or temporarily to hold fragments together
• Retractors - Gelpis
  Hohmans
  Hohmans
  Langenbeck
• Fragment reducing/ bone holding forceps - Used to hold fragments of bone together
• Plates/ Screws - Cortical Vs Cancellous screws
  DCP plates - Hold fragments of bone in compression
  Locking plates and screws - Work differently to DCP in that the bone is not drawn up towards the plate. Screws have slightly smaller threads.
• Pin benders
• Wire twisters
• Wire cutters
• Ruler
• ESF components - Clamps
  Connecting bars
  Pins (Ellis and positive profile)
Don't forget.....

Many orthopaedic procedures require post operative radiographs to check the positioning of implants. This could mean a return to theatre if the surgeon may wish to change anything. Cover the instrument trolleys at the end of surgery to protect them from fur and dust when the animal is moved from theatre.