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**Background and aims:** There is no consensus about the optimal concentrations of ropivacaine for continuous interscalene block.

**Methods:** In a double-blind, randomized, prospective design, 56 patients scheduled for shoulder surgery received a continuous interscalene block with either ropivacaine 0.1% or 0.2% for 48 h. Pain scores, supplemental analgesia, ropivacaine consumption, motor block, side effects, and patient satisfaction were assessed. In a double-blind, randomized, prospective design, 56 patients scheduled for shoulder surgery received a continuous interscalene block with either ropivacaine 0.1% or 0.2% for 48 h. Pain scores, supplemental analgesia, ropivacaine consumption, motor block, side effects, and patient satisfaction were assessed.

**Results:** Except for supplemental analgesia ( $P = 0.011$ ), pain scores, ropivacaine consumption, motor block, side effects, and patient satisfaction were comparable in both groups. Except for supplemental analgesia ( $P = 0.011$ ), pain scores, ropivacaine consumption, motor block, side effects, and patient satisfaction were comparable in both groups.

**Conclusions:** This study suggests that continuous interscalene block with ropivacaine 0.1% and 0.2% provides similar pain relief after shoulder surgery.

504

#### ANALGESIA FOR PROXIMAL FEMORAL/HIP FRACTURE - PRE OPERATIVE FASCIA ILIACA CATHETER WITH INTERMITTENT BOLUS L/A ADMINISTRATION

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**Background and aims:** Hip fractures are a common cause of increased morbidity and mortality in an ageing population. Adequate pain relief has been traditionally fraught with difficulty in assessment of pain and limitation in the use of opioid analgesia due to side effects. Pre operative fascia iliaca block with catheters is a safe alternative method to provide effective analgesia in the peri operative period.

**Methods:** Prospective observational audit of fascia iliaca block with catheter and intermittent bolus of 0.25% levobupivacaine administration for proximal femur fractures. Patients upon referral to the anaesthetist by orthopaedic team, were consented and blocks performed in the dedicated operating theatre suite. The fascia iliaca catheter insertion was performed under ultrasound guidance by inplane approach using Pajunk stimulong sono kit. Subsequently, the patients received 12 hrly boluses of 0.25% levobupivacaine for upto 48hrs.

**Results:** 42 patients with fascia iliaca catheters were audited. Prior to block, 56% of patients had NRS of 6-10 at rest and 80% had NRS 6-10 on movement. Post block, 0% had NRS 6-10 at rest, 68% had NRS 1-2, 32% had NRS 3-5 and 20% had NRS 6-10 on movement. 23% of patients required morphine (10-30mg) and 7% codeine (240-360mg) during the first 48 hrs after the block. There were no major complications apart from 2 catheter dislodgements.

**Conclusions:** This is the first observational audit of ultrasound guided fascia iliaca block with indwelling catheter inserted pre operatively for proximal femoral fractures. With intermittent bolus administration we demonstrated extended analgesia in the pre and perioperative period with significant reduction in systemic analgesia and their associated adverse effects. With the use of ultrasound and meticulous monitoring we have further demonstrated a low complication rate and a high success rate.

505

#### HAS ULTRASOUND MADE ANY DIFFERENCE TO ANAESTHETISTS' PRACTICE? A SURVEY OF SIX DISTRICT GENERAL HOSPITALS

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**Background and aims:** Ultrasound-guided regional anaesthesia (USRA) was introduced into practice in 1978<sup>1</sup> and is currently viewed as the 'gold standard' for regional anaesthesia<sup>2</sup>. As NICE (UK) guidelines<sup>3</sup> support the use of USRA, we investigated the impact (if any) of ultrasound on regional anaesthesia in our region.

**Methods:** An internet-based anonymous survey was sent to anaesthetists in six hospitals in Essex, UK. Questions included anaesthetists' block practice

pre and post-ultrasound and whether block efficiency and outcome improved post-ultrasound.

**Results:** 93 anaesthetists responded to the survey. Pre-ultrasound, respondents attempted a cumulative total of 304 landmark-based blocks (114 upper limb, 115 lower limb, 37 truncal); post-ultrasound introduction, only 130 blocks (cumulative total) were attempted 'blind' (29, 72 and 29 respectively). The commonest pre-ultrasound block done was axillary brachial plexus (47 anaesthetists); post-ultrasound, only 5 respondents did this block 'blind'. The biggest increase in ultrasound-guided blocks were TAP blocks (22 anaesthetists pre-ultrasound; 40 with ultrasound) and supraclavicular (11 pre-ultrasound; 33 with ultrasound) blocks. 44 respondents (47%) believed ultrasound represented advancement in their practice (increased success and improved block quality); 43(46%) believed their block repertoire increased with ultrasound. Importantly, 38(41%) of respondents thought ultrasound blocks were more efficient (time to surgical readiness). 59 anaesthetists have been on formal ultrasound training programmes. These results illustrate definitive progress in ultrasound related block practice.

**Conclusions:** The increasing use of ultrasound technology in regional anaesthesia practice is promising and is to be encouraged. It is unlikely that landmark based blocks will ever be completely eliminated.

#### References:

1. BJA 1978;50:965-7.
2. BJA 2007;98:299-301.
3. NICE IPG 285;Jan2009.

506

#### A REVIEW OF NON-PHYSICIAN DELIVERED UPPER LIMB REGIONAL ANAESTHETIC BLOCKS AT A TERTIARY REFERRAL HAND CENTRE

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**Background and aims:** The Birmingham Hand Centre is based at the Queen Elizabeth Hospital and provides trauma and elective tertiary hand services for the West Midlands and specialist reconstructive surgical expertise for military combat injuries through the RCDM. There are approximately 2500 trauma and 1000 elective operative procedures each year. The regional block service has developed alongside the hand service and the physicians' assistant (anaesthesia) role has become integral to delivery of a safe and efficient service.

**Methods:** Since 2010, prospective data was collected on patients having a regional block as part of their surgical management and was recorded in a database. Patients undergoing axillary block anaesthesia using a standard ultrasound and nerve stimulation technique were identified and a subgroup of those administered by a PA were analysed. Data recorded included patient demographics, failed block requiring either peripheral top up or conversion to general anaesthesia and complications.

**Results:** 2536 upper limb regional blocks were recorded of which 1382 were performed by PAs. The PA general anaesthesia conversion rate at less than 1% was significantly lower than the non-PA group. Two patients in the non-PA group suffered neurological complications (1:1218). There were no neurological complications in the PA group.

**Conclusions:** Non-physician practitioners of regional anaesthesia are able to provide a safe and efficient service with low rates of conversion and neurological injury.

507

#### MEDIAL TECHNIQUE FOR COMBINED POPLITEAL SCIATIC AND SAPHENOUS NERVE BLOCKADE

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**Background and aims:** Combined popliteal sciatic and saphenous nerve blockade for lower extremity anesthesia is a widely accepted practice. Combined sciatic and saphenous nerve blockade under ultrasound guidance from the medial approach is described. This technique is performed faster than the two injection technique, does not require repositioning, and significantly

reduces both pain and risk of infection. Future advances in needle technology will allow continuous nerve blockade by this approach.

**Methods:** With the patient supine the lower extremity is externally rotated and the knee and hip are slightly flexed. The adductor groove and saphenous nerve are identified by ultrasound and the probe is placed in the popliteal fossa to identify the sciatic nerve. The needle is inserted medially at the saphenous nerve injection site and advanced to the sciatic nerve and local anesthetic is injected. The needle is withdrawn to the saphenous nerve and the remainder of local anesthetic is injected.

**Results:** Combined sciatic and saphenous nerve blockade using a medial approach eliminates repositioning for its performance. The single injection technique eliminates needle reinsertion, and pain from the procedure and risk of contamination from excessive ultrasound probe and needle manipulation are also reduced.

**Conclusions:** Combined medial sciatic and saphenous nerve blockade by a single injection approach improves ease and speed of this technique by reducing the need for operator or patient repositioning and reduces the pain and risk of infection from a multiple injection approach. Future developments in needle technology will allow continuous infusions to be placed by this technique.

## 508

### SHORT-TERM AND LONG-TERM NEUROLOGICAL COMPLICATIONS OF PERIPHERAL NERVE BLOCKS IN ORTHOPAEDIC AND TRAUMA SURGERY IN THE UNIVERSITY TEACHING TERTIARY CENTRE

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**Background and aims:** The goal of this prospective study was to record neurological complications associated with peripheral nerve blocks used for trauma/ orthopaedic surgery in the University Hospital.

**Methods:** After having obtained an informed consent with regional technique all patients with a peripheral nerve block on the upper or lower extremity operated from January to December 2011 were prospectively studied. The blocks were used either as a single anaesthetic procedure or as a part of combined anaesthesia or analgesia. Following data were recorded: demographic parameters, block location, guidance (landmarks, nerve stimulation, ultrasound), onset, quality and duration of the block. For neurological complications the patients were checked after the procedure and at 24h, 48h and 3 and 6 months.

**Results:** 189 blocks on upper and 71 on lower limb were performed in 260 patients during study period using landmarks (6.2%), nerve stimulation (20.4%) and ultrasound guidance technique (63.2%) respectively. We found 23 prolonged blocks or temporary hypaesthesia/paraesthesia (8.8%, 19 for upper and 4 for the lower extremity blocks). The incidence of complications was not related to type of guidance technique used. 4 long-term neurological complications (1.5% - 3 hypaesthesias, 1 paraesthesia) lasting longer than three months were also found.

**Conclusions:** Peripheral nerve blocks for orthopaedic/trauma surgery were associated with acceptable rate of neurological complications. There was no difference between the extremities or techniques of nerve location. However, it is not fully clear whether complications were connected to nerve blocks only or to surgical technique too.

## 509

### RANDOMIZED, CROSSOVER, OBSERVATIONAL SIMULATION-BASED EVALUATION OF A NEEDLE GUIDE (NG) FOR IN-PLANE ULTRASOUND-GUIDED REGIONAL ANAESTHESIA (RA)

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**Background and aims:** We hypothesized the Infiniti NG (Civco Medical Solutions, USA) would facilitate IP US guided RA in a simulation model in comparison to freehand (FH) techniques.

**Methods:** A prospective randomised single blind crossover observational evaluation of the Infiniti NG using a training device (Blue Phantom, Sono-site, UK) was conducted with 22 anaesthetists. Each localised a specific 'nerve' IP with a 10cm Stimuplex needle (B Braun, Germany) using either

FH or NG technique, whilst observed by a RA specialist who was blinded to the technique and could see only the screen of the US machine (Micromaxx, Sonosite, UK). The fraction of time the needle tip remained in view, time taken to complete the task, number of needle passes, anaesthetist preference for ease of use and confidence and supervisor preference for confidence of supervision were recorded. Parametric data were analysed using the paired t-test, non-parametric data the Chi-squared test.

**Results:** There was no significant difference in time to target (NG 23.0s±16.3; FH 17.9s±11.7; p=0.17), number of needle passes or needle tip or shaft visualisation. Ten anaesthetists (45%) preferred and felt more confident with the NG. Eleven anaesthetists (50%) preferred and felt more confident using FH. The supervisor's confidence correlated with the preference and confidence of the anaesthetist performing the block except on two occasions.

**Conclusions:** The NG did not improve needle visualization or facilitate IP nerve blockade. Approximately half of the anaesthetists surveyed preferred using the NG. The supervisor usually felt more confident supervising the technique preferred by the anaesthetist.

## 510

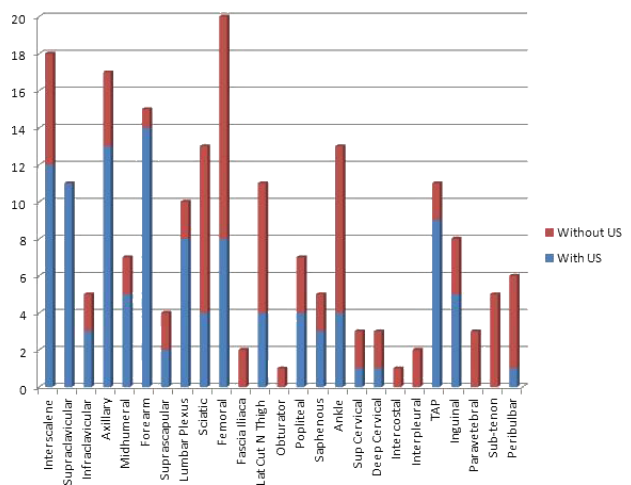
### A SURVEY OF THE PRACTICE OF NON-NEURAXIAL REGIONAL ANAESTHESIA IN A LARGE TEACHING HOSPITAL

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**Background and aims:** The practice of regional anaesthesia (RA) varies greatly, including aspects which may impact on patient safety. We sought to document the practice of RA amongst consultant anaesthetists at our institution.

**Methods:** 39 consultant anaesthetists responded to a questionnaire regarding their practice of RA. Which RA techniques they performed, whether a landmark or ultrasound guided technique was used and if the technique was performed with the patient awake, sedated or under general anaesthesia (GA) was asked. Local anaesthetic (LA) used, including concentration, volume and additives was also recorded.

**Results:** 8 responders performed no non-neuraxial regional techniques. The total number of responders performing each RA technique and the use of ultrasound is shown in graph 1. 56% of all RA techniques were performed with ultrasound guidance. 93% of upper limb blocks (excluding forearm blocks) were performed with the patient awake or sedated. 59% of lower limb blocks were performed under GA. Bupivacaine 0.25%-0.5% was the most common LA used. Prilocaine was used by two responders. A combination of bupivacaine 0.25% with lidocaine 1% was most commonly used with non-GA RA. Only 2 responders regularly used an additive; one using 1:500 000 adrenaline the other 1mcg/kg of clonidine.



[Graph 1]

**Conclusions:** Non-neuraxial RA is performed by 79% of consultant anaesthetists in our institution. Ultrasound use is common but not ubiquitous. It