RA-UK Annual Scientific Meeting 2017 (Brighton)
Abstracts

A Survey of Patient Knowledge of Nerve Blocks in Day Case Orthopaedic Surgery

James Arlidge[1], Rasha Abouelmagd[2], Daisy Tong[3].
[1,2] Anaesthetic SpR, [3] Anaesthetic Consultant, King's College Hospital, London.

INTRODUCTION

The Royal College of Anaesthetists and Regional Anaesthesia UK both state that for elective surgery, patients should receive information about their anaesthesia prior to meeting their anaesthetist[1,2]. This is preferably in the form of a patient friendly leaflet and can be provided at booking in or at pre-assessment clinic. It is the role of the anaesthetist performing a nerve block to ensure this information has been understood and answer any questions. To give informed consent, patients need to know the procedure specific benefits, risks and alternatives to a nerve block anaesthetic. It is also important that patients know what to expect following a regional anaesthetic, including the risk of injury to an insensate limb, duration of block and when to start taking postoperative analgesia, and who to contact if they have concerns.

AIMS

We aim to establish if day case orthopaedic patients are provided with adequate information about peripheral nerve blocks, and whether this information is being provided in a timely manner. We also aim to explore patient satisfaction with the information provided.

METHODS

All patients undergoing day case orthopaedic surgery in March 2017 filled in a pre-assessment questionnaire (n=18), while only those having a peripheral nerve block also filled in a post-operative questionnaire (n=11). Patients having a procedure not amenable to a regional anaesthetic technique were excluded.

RESULTS

Figure 1. Pre-Assessment Questionnaire

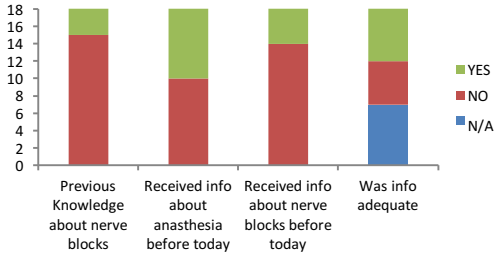
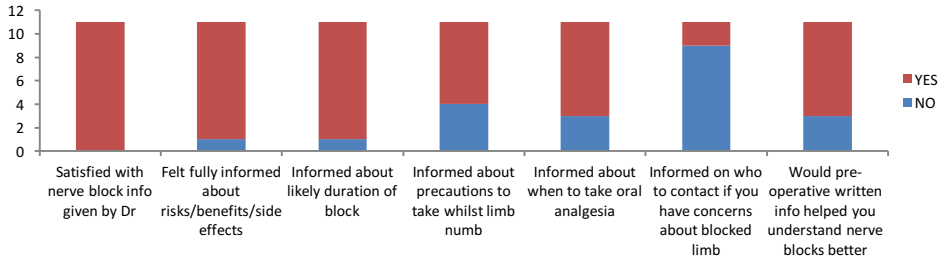


Figure 2. Post-operative Questionnaire



DISCUSSION

This pilot patient survey, with ongoing data collection indicates that patients have limited prior knowledge of peripheral nerve blocks, and are frequently not informed pre-operatively about general or nerve block anaesthetic techniques (fig. 1). Those undergoing regional anaesthesia are largely well informed by their anaesthetist, however information on post-operative precautions, analgesia and contact details in case of problems are frequently missed (fig. 2). The majority of patients showed a preference for pre-operative information in a written form, however video, website and patient experiences/feedback where also highlighted as potential useful modalities.

CONCLUSION

Patients are generally satisfied with the information they are given regarding peripheral nerve blocks on the day of surgery, however we are frequently missing opportunities to provide patients with information pre-operatively, to aid in their decision making. Our plan is to produce a Plain English 'nerve block' patient information leaflets at King's. It will be made readily available and distributed at anaesthetic pre-assessment clinic and orthopaedic book-in clinic, where 'information about anaesthesia should be given alongside information about the procedure itself'[3]. We will then re-assess for improvements of patient knowledge of peripheral nerve blocks.

REFERENCES

1. http://www.aagbi.org/sites/default/files/consent06.pdf 'Consent for anaesthesia' AAGBI publication 2006'
2. http://www.ra-uk.org/images/Documents/ConsentforRA2015.pdf 'Patient consent for peripheral nerve blocks' RA-UK. 2015
3. https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/138296/dh_103653__1_.pdf 'Reference guide to consent for examination or treatment'. 2nd edition. Department of health. 2009

Abstract Title: IMPROVING THE CONSENT PROCESS FOR ULTRASOUND GUIDED REGIONAL ANAESTHESIA (RA)

Ruth Greer, Anthony Carey, Edward Lent
North Bristol NHS Trust, Bristol

Introduction

Regional Anaesthesia (RA)-UK guidelines on peripheral nerve blocks state properly taken consent helps patients make informed decisions and protects anaesthetists from litigation. They advocate using preoperative information leaflets or videos, taking consent prior to theatre including benefits, risks and alternatives, documenting consent, patient understanding, and questions answered. Preoperative multimedia information reduces patient anxiety, improving experience. The AAGBI suggest effective communication and thorough consent reduces risk of medicolegal claims. We designed an audit comparing consent standards for RA in Southmead Hospital with RA-UK guidelines, identifying areas requiring improvement. We aimed to produce a patient information video on RA to improve patient understanding, consent and experience.

Method

A prospective audit of RA consent at Southmead Hospital was carried out from February to April 2016. Data collected reflected RA-UK standards and was obtained from anaesthetic charts and questioning patients and anaesthetists.

Results

Compliance with RA-UK standards for consent was suboptimal. Documentation was variable, risk discussion occurring more frequently than benefits or alternatives, documented understanding and questions answered was poor. Patients were not consistently given pre-procedure information leaflets and an information video was not available. We produced 'Nerve Blocks: An Information Video For Patients' detailing the patient journey including procedure, risks and benefits. It is available on the RA-UK website (www.ra-uk.org/index.php/patient-info-video) and YouTube channel free of charge to any patient and healthcare professional to view, worldwide. Southmead Hospital patients are given the web link at preoperative clinic and hospital tablets are available to view the video.

Discussion and Conclusion

Our audit prompted production of this informative patient information video, available free, worldwide, to patients and healthcare professionals as an extremely useful means to deliver preoperative information, inform consent and reduce medicolegal exposure nationally. Once in use, we will survey patients and anaesthetists on perceived efficacy.

References

Regional Anaesthesia (RA)-UK. Consent for peripheral nerve blocks. 2015. http://www.ra-uk.org/images/Documents/ConsentforRA2015.pdf. Accessed 16/12/16.

Association of Anaesthetists of Great Britain and Ireland (AAGBI). Consent for anaesthesia. January 2006. http://www.aagbi.org/sites/default/files/consent06.pdf. Accessed 16/12/16.

W T Frame. Medico-Legal Aspects of Regional Anaesthesia. Core Topics in Anaesthesia. Association of Anaesthetists of Great Britain and Ireland (AAGBI). 2015.

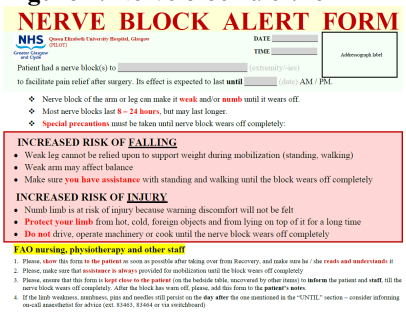
Conflicts of Interest: Small Project Grant of £1,800 from RA-UK to fund video filming, editing and production.

Abstract Title: Standardized peripheral nerve block labelling and patient information: its role in patient awareness and handover optimization in the postoperative period. Vera Sokolova, Dmitrijs Sokolovs Queen Elizabeth University Hospital Glasgow

Introduction: Peripheral nerve blocks (PNB) are associated with risk of falls and damage to insensate extremity in the postoperative period. [1] Patients must be informed about the need to mobilize with care and assistance, avoid driving, using machinery and cooking, and the need protect the extremity from trauma and thermal damage until the block has worn off. [2] Absence of robust information and labelling system may lead to improper patient and nursing staff awareness, resulting in substandard care and increased risk.

Methods: **1) Prospective audit**: April – June 2016, 38 consecutive lower limb operations (initially 40; 2 excluded due to inadequate documentation). "Anaesthetist-to-recovery" handover regarding postoperative PNB management instructions was assessed via questionnaire 1 (filled out by recovery nurses). Patients' awareness about PNB and associated risks was assessed via questionnaire 2. **2) Intervention**: introduction of PNB **alert form** (read to the patient twice – in recovery and on the ward, **Fig. 1**) and **sticker** (placed on the front of drug prescription chart, **Fig. 2**). The form explains relevant risks and alerts the patient and staff. The sticker provides additional indication for the staff taking over the patient care at night or reviewing the patient. **3) Re-audit**: November 2016 – February 2017, 33 elective lower limb operations (initially 40, 7 excluded due to inadequate documentation). Alert form was shown to patients in recovery as soon as adequate communication was possible. Patient awareness about the PNB associated risks was assessed by recovery nurses before leaving recovery (questionnaire 3). Form and sticker used to aid handover to the ward. The form was read to the patient once again by the ward nurse after taking over. Each patient was followed up on the ward the same day (questionnaire 4). Opinion of the ward nurses looking after the patients was assessed on the same day (questionnaire 5). Results are summarized in **Table 1**.

Figure 1. Nerve block alert form


NERVE BLOCK ALERT FORM

NHS Queen Elizabeth University Hospital, Glasgow (QEUH) Greater Glasgow and Clyde

DATE

TIME

Addressograph label

Patient had a nerve block(s) to _____ (extremity/-ies)

to facilitate pain relief after surgery. Its effect is expected to last **until** _____ (date) AM / PM.

- Nerve block of the arm or leg can make it **weak** and/or **numb** until it wears off.
- Most nerve blocks last **8 – 24 hours**, but may last longer.
- **Special precautions** must be taken until nerve block wears off completely:

INCREASED RISK OF FALLING

- Weak leg cannot be relied upon to support weight during mobilization (standing, walking)
- Weak arm may affect balance
- Make sure **you have assistance** with standing and walking until the block wears off completely

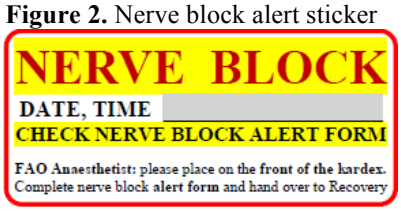
INCREASED RISK OF INJURY

- Numb limb is at risk of injury because warning discomfort will not be felt
- **Protect your limb** from hot, cold, foreign objects and from lying on top of it for a long time
- **Do not** drive, operate machinery or cook until the nerve block wears off completely

FAO nursing, physiotherapy and other staff

1. Please, show this form to **the patient** as soon as possible after taking over from Recovery, and make sure he / she **reads and understands** it
2. Please, make sure that **assistance is always** provided for mobilization until the block wears off completely
3. Please, ensure that this form is **kept close to the patient** (on the bedside table, uncovered by other items) to **inform** the patient and **staff**, till the nerve block wears off completely. After the block has worn off, please, add this form to the **patient's notes**.
4. If the limb weakness, numbness, pins and needles still persist on the **day after** the one mentioned in the "UNTIL" section – consider informing on-call anaesthetist for advice (ext. 83463, 83464 or via switchboard)

Figure 2. Nerve block alert sticker


NERVE BLOCK

DATE, TIME

CHECK NERVE BLOCK ALERT FORM

FAO Anaesthetist: please place on the front of the kardex.
Complete nerve block alert form and hand over to Recovery

Results: In addition to the findings in Table 1, questionnaire 4 revealed that 97% of patients (n = 32) found the form helpful to learn about the PNB and associated risks. Questionnaire 5 revealed that 100% of nurses found the idea of alert form/sticker useful, aiding adequate handover, identification of patients with PNB, and understanding when to raise concerns about a prolonged PNB.

Table 1:

Question	Pre-intervention (n = 38)			Post-intervention (n = 33)
	Handover "anaesthetist-to-recovery" (questionnaire 1)		Patients' awareness of the PNB and associated risks (questionnaire 2)	Patients' awareness of the PNB and associated risks (questionnaire 3)
	Documented	Verbal		
Type of PNB performed	89%	95%	42%	88%
Anticipated *duration* of the block and associated numbness/weakness	8%	21%	29%	94%
Anticipated *distribution* of the block	11%	13%	32%	97%
Risk of *damage to insensate extremity*, instructions to protect it until the block has worn off	5%	18%	24%	82%
Risk of *falls* and instructions to mobilize with care and assistance	15%	10%	24%	88%

Discussion: Our proposed system raised patient awareness about PNB and associated risks more than three times. It ensured a 100% handover about PNB at all stages between anaesthetists, recovery and ward nurses.

Conclusions: Uniform and robust PNB labelling and patient information system is of key importance for adequate patient awareness, optimal handover and risk prevention. It is of particular importance in case of variable nursing staff experience with

PNB, in situations when the patient is looked after by the bank nursing staff, and for emergency/urgent cases, in which patients usually receive less detailed pre-operative information.

References:

1. Johnson RL, Kopp SL, Hebl JR, Erwin PJ, Mantilla CB. Falls and major orthopaedic surgery with peripheral nerve blockade: a systematic review and meta-analysis. BJA 2013 Apr;110(4):518-28.
2. Sardesai A, French J, Pawa A. RAUK Consent for peripheral nerve blocks 2015, p. 7.

Abstract Title: Re Audit – Stop Before You Block Campaign - Is it really working?

Madhu Adala, Suresh Narayanan, Ashwani Gupta
Queen Elizabeth Hospital Gateshead

Introduction: Never events are serious but largely preventable patient safety incidents. These events should not occur if existing national guidance or safety recommendations are implemented by healthcare providers. Wrong site or wrong side block is one of the common never event, which occurs periodically. NHS Improvement reported 442 never events between 1st April 2015 and 31st March 2016 of which 42 are wrong side blocks (1). At Queen Elizabeth Hospital, Gateshead we reported 4 wrong side blocks between 2014 and 2016. As part of prevention measures we took a Stop Before Block (SBYB) Campaign and Re Audited the compliance within our department.

Methods: Re-Audit of SBYB is a prospective audit and was carried out for 6 weeks from November 2016 to December 2016. Recovery nursing collected information form anaesthetic staff when the patient who received a nerve block was brought to into the recovery area. They also gathered information from the anaesthetic chart and WHO checklist.

Results:

Audit Questions	Current Audit Compliance (n=30)	Previous Audit Compliance (n=36)
Total number of cases audited	30	36
Was 'STOP before block done'?	29 (97%)	19 (53%)
Was the WHO checklist done?	30(100%)	36(100%)
STOP before you block in WHO checklist complete?	29(97%)	34(94%)
Is STOP before you block documented in anaesthetic chart?	26(87%)	16(44%)
Documented pre-operative discussion of blocks with the patient?	30(100%)	35(97%)
Block procedure documented in anaesthetic chart?	29(97%)	35(97%)

Discussion: There was a significant improvement in our department's compliance of SBYB practice. We had 100% compliance compared to 53% previously. We also found improvement in compliance of the WHO check list, discussion about regional nerve block and its documentation.

Conclusions: Improved awareness and safety consciousness of anaesthetic staff was key to the improvement in our practice. The National campaign (2) initiated by both Safe Anaesthesia Liaison Group (SALG) and Regional Anaesthesia UK (RAUK) in 2015 and our local campaign also helped create awareness among our staff members. A pre needle time out should be performed before each nerve block and if there in a new site of block or change in position of patient or a time gap between the first block and the second block or if it is performed by another team. A specific regional anaesthesia block time out policy should be in place for all departments where nerve blocks are performed.

References:

1. NHS Improvement. *Never Events reported as occurring between 1 April 2015 and 31 March 2016 – final update*. Available from: https://improvement.nhs.uk/uploads/documents/NE_data_report_1_April_2015_-_31_March_2016_FINAL_v2.pdf. [Accessed 30th March 2017].

2. Safe Anaesthesia Liaison Group (SALG) and Regional Anaesthesia UK (RAUK). *Stop Before You Block Campaign*. Available from: https://ra-uk.org/index.php/stop-before-you-block. [Accessed 30th March 2017].

3. Mulroy MF, Weller RS, Liguori GA. A Checklist for Performing Regional Nerve Blocks. Reg Anesth Pain Med. 2014; 39: 195–199

Patient Consent and Information For Regional Anaesthesia in Foot and Ankle Surgery – How Can We Improve?

Sara Ko, Stuart Wade, Alison Schulte
Brighton and Sussex University Hospitals NHS Trust

Introduction

Guidelines from the AAGBI and RA-UK place emphasis on the importance of consent for peripheral nerve blocks with information ideally given to patients for elective surgery as early as possible[1,2]. Although patient information leaflets cannot substitute direct communication, they are an excellent source of providing basic information to aid the consent process and can also prompt patients to address any concerns with their anaesthetist. At Brighton and Sussex University Hospitals NHS Trust, foot and ankle surgery is regularly performed as day case procedure under regional anaesthesia +/- sedation. No patient information regarding regional anaesthesia for foot and ankle surgery was available prior to direct communication between the responsible anaesthetist on the day of the surgery. We introduced a patient information leaflet regarding regional anaesthesia for foot and ankle surgery within our Trust and assessed its impact on the consent process and on patient satisfaction.

Method

We initially surveyed all patients who underwent foot and ankle surgery under regional anaesthesia in January 2017. A standardised (score 1-5) questionnaire concerning the consent process, understanding and experience of the regional anaesthesia was completed retropectively. A patient information leaflet 'Regional Anaesthesia for Foot and Ankle Surgery' was introduced in February 2017 via the Trust intranet and given to patients as hard copies on the morning of the procedure. Following its introduction all patients undergoing foot and ankle surgery in March 2017 were surveyed and initial results were analysed and compared with the previous group.

Results

Pre – Verbal consent / info only. Post - RA leaflet + verbal consent.

	Understood nerve block indications	Understood nerve block procedure	Understood nerve block risks	Info reflected procedure	Info following procedure	Opportunity to ask questions	Who to contact if complication	Overall satisfaction
Pre	3.86	3.68	3.18	3.68	3.80	4.41	3.77	3.86
Post	4.67	4.56	4.89	4.89	4.89	4.78	5.00	5.00

With anaesthetic verbal consent and information only, patients scored their understanding for the indications for regional anaesthesia as 3.68 with patient understanding of the associated risks of RA scored as 3.18. Following introduction of the leaflet prior to the procedure patient understanding of indications and risks improved to 4.67 and 4.89 respectively. Of those patients given an information leaflet all sections returned scores above 4.50 with overall patient satisfaction regarding the information provided prior to having regional anaesthesia rising from 3.86 to the maximum 5.

Discussion

There is a clear positive progression in all aspects that concern our study after provision of the patient information leaflet. Of particular interest is the increase in the score regarding how well patients felt they understood the risks involved in regional anaesthesia prior to it being performed, with a rise from 3.18 to 4.89. This potentially highlights the importance of such information being available prior to the anaesthetic consultation, thus facilitating the consent process for regional anaesthesia.

Conclusions

The response from our study reflected positively with recommendations from both RA-UK and AAGBI regarding the provision of patient information leaflets prior to peripheral nerve blocks. The definitive improvement in patient satisfaction and understanding is very encouraging for our Trust to continue improvement in the availability and quality of such information.

References

1) Yentis SM, Hartle AJ, Barker IR et al. AAGBI: Consent for anaesthesia 2017. Anaesthesia 2017. Jan, 2017.
2) Sardesai A, French J, Pawa A. Patient Consent for Peripheral Nerve Blocks 2015. Available from: https://www.ra-uk.org/index.php/guidelines-standards/5-guidelines/detail/255-patient-consent-for-peripheral-nerve-blocks

Abstract Title: Day Case Anterior Cruciate Ligament Repair

Jonathon Pearson, Helbert Arkhurst, Guru Mudimadagu, Rob Stuart, Nat Haslam

Introduction
Anterior Cruciate Ligament (ACL) Repair is not routinely done as a day case procedure. The reasoning for this is multifactorial: pain, dizziness, post-operative nausea and vomiting (PONV), social reasons, late post-operative admissions, and failed physiotherapy assessments. Peri-operative analgesia for ACL surgery is challenging and there does not appear to be an effective solution in the literature. Day case and physiotherapy requirements limit the scope of effective regional techniques and so a multimodal approach is key. The adductor canal block has demonstrated some potential for improved pain management in ACL reconstruction but with variable results (1) and patients may still be limited by poor mobility. Currently large doses of intravenous opioid analgesia are used to manage severe post-operative pain which results in less day case discharge.

We considered the use of an obturator nerve block as part of a multimodal pain management strategy in an attempt to improve the rate of day case ACL reconstruction. Obturator nerve does not completely cover the ACL repair surgical site, but sensory branches contribute to pain during ACL repair (2).

Methods
Initially we conducted a retrospective data collection of pain scores, analgesia requirements and PONV in patients undergoing routine primary ACL repair (48 patients). We then conducted a prospective data collection of pain scores, analgesia requirements and PONV after introduction of an obturator nerve block as part of the routine care for patients undergoing routine primary ACL repair (50 patients).

Results
Day case rate improved from 52% to 78% with the use of an obturator block. Timing of surgery changed between the comparison groups with more patients having their procedures done before 1pm in the block group (50% - no block vs 72% with block). Patients having ACL repair before 1300 have a high chance of day case discharge (80% - no block vs 88% with block). Patients operated on after 1500 are less likely to be discharged the same day (22% no block vs 50% with block).

Average pain scores in recovery were 5.2 vs 5.1 (no block vs block). 50% patients without block required more than 20mg morphine in recovery compared to 8% in the block group. PONV rates dropped from 27% to 6% when a block was done and 86% patients in the block group spent less than 2 hours in recovery compared to 67% in the no block group.

Discussion
Obturator block for ACL reconstruction reduces morphine consumption, PONV rates, time in recovery and contributes to successful day case discharge. Obturator nerve block successfully contributes to the multimodal analgesia approach to day case ACL repair. Routine multimodal analgesia is still required with obturator nerve block and includes (where not contraindicated) paracetamol, non-steroidal anti-inflammatories and intravenous opioids.

Timing of surgery is key to facilitating day case surgery with morning procedures more likely to be discharged as day case. It was evident however that those patients operated on later in the day were more likely to be done as a day case if they received a block.

Conclusions
Obturator nerve block is an effective adjunct to multimodal pain management for ACL reconstruction. The use of this block and timely (morning) surgery can facilitate ACL repair as a day case procedure.

References
1. Abdallah FW, Whelan DB, Chan VW, Prasad GA, Endersby RV, Theodoropolous J, Oldfield S, Oh J, Brull R. Adductor canal block provides noninferior analgesia and superior quadriceps strength compared with femoral nerve block in anterior cruciate ligament reconstruction. The Journal of the American Society of Anesthesiologists. 2016 May 1;124(5):1053-64.
2. Sakura S, Hara K, Ota J, Tadenuma S. Ultrasound-guided peripheral nerve blocks for anterior cruciate ligament reconstruction: effect of obturator nerve block during and after surgery. Journal of Anesthesia. 2010 Jun 1;24(3):411-7.

In line with local guidance this audit was registered with the hospital audit department. None of the authors have any conflicts of interest and there was no financial support for the project.

Abstract Title: The addition of a low dose adductor canal block to peri-operative local infiltration reduces or abolishes intravenous opiate requirements after anterior cruciate ligament reconstruction without impairing early mobilization.

J Niewarowski, N Bottomley, J Chantler - John Radcliffe Hospital

Introduction: Elective anterior cruciate ligament reconstruction (ACLR) surgery is a common orthopaedic procedure associated with moderate to severe postoperative pain. Our institution routinely performs these procedures in a day case setting[1]. Our established analgesia process is to combine local anaesthetic infiltration (LAI) of the operative site (100 ml 0.3% ropivacaine, 30mg ketorolac and 1mg epinephrine) with regular simple analgesia. Although pain is well controlled following surgery, the majority of patients require intravenous "rescue" opiates in recovery. We hypothesised that the addition of a low dose adductor canal block (ACB) to an established standard operating procedure including LAI would reduce analgesia requirements without delaying mobilisation.

Method: 50 consecutive patients having elective ACLR under GA were enrolled in two prospective audits in accordance with our institution's consent policy for service evaluation. Anaesthesia was provided by a single practitioner and all patients completed the institutions written analgesia protocol including infiltration of the operative site. The last 37 patients were consented for ACB with 0.2% ropivacaine. To reduce the risk of toxicity, the volume administered was limited to that required to obtain a satisfactory ultrasound image, and the local infiltration reduced by the equivalent volume. Therefore patients having both LAI and ACB received a reduced total LA dose compared to LAI alone. The primary outcome was fentanyl administered in theatre recovery by nursing staff to achieve target pain scores. Results from the two groups were analysed using a Students t-test.

Results: Both groups of patients were similar according to age, ASA grade and gender. Patients receiving an ACB had an average of 11.4 (±1.8ml) of ropivacaine injected at the block site. All patients completed standard mobilisation on the day of surgery and met discharge criteria for pain relief.

Table 1. Patient demographics and results (Values are mean ±standard deviation)

Variables	Control Group n=13	Block Group n=37
Age (years)	33±11	27±7
Sex (male/female)	8/5	23/14
Weight (kg)	77.3±11.8	76.8±14.6
Fentanyl used intraoperatively (mcg)	202±15	124±34
Requirement for any Fentanyl in recovery (%)	100%	30%
Fentanyl used in recovery (mcg)	156±54	25±42
Length of stay (hours)	13.9±7.9	12.24±5.52
Overnight admission rate	15%	9%

Discussion: Nerve blockade and local infiltration are thought to provide similar analgesia following ACLR[2]. The normal LA dose required for successful ACB normally precludes combination with LAI due to the risk of LA toxicity[3]. This study used a single operator model to investigate the pragmatic impact of the addition of a low volume ACB. We believe this to be the first prospective publication of this technique following ACLR. Our investigation showed that the amount of fentanyl administered in theatre and recovery were significantly smaller in the block + local infiltration group compared to the group receiving local anaesthetic infiltration alone ($p<0.05$). There was no signal of delayed mobilisation, and a trend towards earlier discharge, in the ACB group. We urge caution applying this technique in other settings where low volume ACB might not be attainable.

Conclusion: In an established day case setting, the addition of low volume ACB to standard analgesia including local infiltration, significantly reduced opiate requirements in theatre recovery without delaying early mobilization, and abolished the requirement for any rescue opiates in 70% of patients.

References:

1. Khan T et al. The use of standard operating procedures in day case anterior cruciate ligament reconstruction. Knee 2012 Aug;19(4):464-8.
2. Abdallah FW et al. Adductor Canal Block Provides Noninferior Analgesia and Superior Quadriceps Strength Compared with Femoral Nerve Block in Anterior Cruciate Ligament Reconstruction. Anesthesiology 2016 May;124(5):1053-64.
3. Jæger P et al. Optimal volume of local anaesthetic for adductor canal block: using the continual reassessment method to estimate ED95. Br J Anaesth. 2015 Dec;115(6)

Regional Anaesthesia Skills and Teaching Survey – Is Peer-to-Peer a viable teaching method

Daniel Lake, Athmaja Thottungal

As an Anaesthetic trainee, rotating throughout all the hospitals in the deanery is an essential part of the spiral learning facilitating the basic, intermediate and higher training. This enables exposure to different anaesthetic techniques to build on experience and knowledge. In our experience we have found that different departments approaches to regional anaesthesia has been highly variable with pockets within the regions offering highly specialised regional anaesthesia and teaching to trainees with other areas offering minimal regional anaesthesia and no training. This gave us the idea that the constant rotating of trainees throughout the deanery offers a way of disseminating information from the pockets of more exposure to less. This peer-assisted learning has been used often before in the university setting with documented benefits for both the trainee and the trainer.[1] We also noticed that many departments have highly skilled staff grade anaesthetists who would regularly perform regional lists yet due to service commitment would rarely be able to formally teach these skills. We wanted to assess whether the skill mix and teaching ability would be available at our District General Hospital to change our current teaching program to allow for dissemination of regional training throughout the anaesthetic department up and down the experience ladder instead of the more traditional top down teaching framework.

We designed a paper survey which was distributed and completed by the anaesthetists of all grades present at our department audit meeting. The survey listed all regional blocks and asked the anaesthetists to rate their frequency of performing the block (0 [never] - 10 [often]), awareness of the block (0 [none] - 10 [very aware]), confidence to perform the block (0 [none] - 10 [very confident]) and confidence to teach the block (0 [none] - 10 [very confident]). The data was then input into Microsoft Excel and analyzed.

We gathered surveys from 15 anaesthetists, 67% of the responses were from consultants, 20% trainees and 13% staff grades and 93% of anaesthetists use ultrasound guidance as their chosen technique. The five most frequently performed blocks were; Interscalene Block, Infraclavicular Block, Axillary Brachial plexus block, Mid Humeral / Peripheral nerve block - forearm, Illioinguinal and Illiohypogastric nerve block. The teaching confidence distribution showed highest confidence (10) in the staff grade group for both Interscalene and Infraclavicular blocks. The five least frequently performed blocks are; Stellate / Cervical ganglion, Suprascapular nerve block, US assisted spinal block, US assisted epidural and obturator nerve block. The teaching confidence for these seldom performed blocks was 0 in the staff grades and trainees yet ranged between 4.5 and 8 in the consultants for all but one of the blocks.

The survey provided information on how frequently blocks are performed within our department which helps better tailor future training needs. We have also highlighted that the staff grades can offer a lot to a regional anaesthesia training program and not only help develop the regional anaesthesia service we can offer patients but also help develop their teaching skills, a need for revalidation and appraisals. We believe using the data gathered in this survey we can tailor a teaching program that will add one block to each weekly afternoon teaching session. The staff grades can be timetable to teach the blocks they are confident at teaching and commonly perform on their lists. The registrars can be timetabled to teach the more commonly performed blocks and the consultants for the less frequently performed block. We also want to encourage all available levels of anaesthetists to attend the teaching program to try and raise the awareness and skill of perform all kinds of blocks throughout the whole department.

In conclusion this survey helps to identify strengths and weaknesses in our current regional anaesthesia practice and teaching, and will allow us to identify who in the department can provide teaching for each specific block. The staff grades can provide a valuable resource in teaching blocks which they perform regularly and the registrars rotating between hospitals can be a method of distributing the skills to hospitals were particular blocks are seldom performed.

This survey did not require ethics approval and we have no conflicts of interest to declare.

1. Using peer-assisted learning to teach basic surgical skills: medical students' experiences, Saleh et al. Med Educ Online. 2013; 18: 10.3402/meo.v18i0.21065.

Abstract Title: **Elective laparotomy: To epidural or not to epidural?**

J Whitgift, J Stimpson

Introduction
Patients undergoing major abdominal surgery are a complex group of patients and often present a challenge due to significant analgesia requirements in the post-operative period. There is no set standard for the management of pain following laparotomy, and multiple analgesia regimes are used. There are many patient and clinician factors which influence choice of post-operative analgesia[i,ii,iii]. Opiate medications have conventionally been the mainstay of pain management in laparotomy, despite an unfavourable side effect profile. This service evaluation project aims to explore the post-operative recovery period of elective laparotomy patients on different analgesia regimes to help inform local practice.

Methods
All adult patients undergoing elective laparotomy Feb 2016 to Oct 2016 were identified using the ITU elective booking system (n =58). Data was collected from patient electronic notes.

Results
41 patients had epidurals and 17 had alternative analgesia regimes. Failure to insert epidurals occurred with 4 patients. Alternative regimes included single shot spinals (5), regional nerve blocks (4), intravenous lidocaine infusion (1) and Patient Controlled Analgesia only (7). Mean opiate requirement in morphine equivalence was 69.8mg in the epidural group and 92.0mg in the no epidural group. 19 (46%) patients with epidurals used no opiates in ITU compared to 1 (6%) patient in the no epidural group. Median hospital stay was shorter in the epidural group (8 days) compared to the no epidural group (11 days). There was no correlation between the amount of opiate used and duration of ITU stay ($R = 0.27$) or hospital admission ($R = 0.059$, $p = 0.623$). There was a higher rate of complications observed in the group without epidurals (52%) compared to the epidural group (34%), including a higher incidence of post-operative ileus and hospital acquired pneumonia.

Discussion
Optimisation of analgesia can enhance post-operative recovery; allowing patients to take deep breaths, aid secretion clearance and increase engagement with physiotherapy. Ultimately decreasing the incidence of post-operative complications and improving time to mobilisation and hospital discharge[iv,v]. The majority of patients in this cohort received epidurals. Patients receiving epidurals had a shorter median duration of hospital admission, lower incidence of complications, and a higher proportion required minimal or no opioids.

Conclusion
When successful epidurals provide good analgesia following elective laparotomy. Multimodal techniques are recommended as a way of providing good analgesia effects while limiting side effects.

References
i Garimella, Veerabhadram, and Christina Cellini. "Postoperative pain control." *Clinics in colon and rectal surgery* 26.03 (2013): 191-196
ii Kranke, Peter, et al. "Continuous intravenous perioperative lidocaine infusion for postoperative pain and recovery." *The Cochrane Library* (2015).
iii Guay, Joanne, Mina Nishimori, and Sandra Kopp. "Epidural local anaesthetics versus opioid-based analgesic regimens for postoperative gastrointestinal paralysis, vomiting and pain after abdominal surgery." *The Cochrane Library* (2016).
iv Kehlet H, Holte K. Effect of postoperative analgesia on surgical outcome. Br J Anaesth. 2001;87(1):62–72.
v American Society of Anesthesiologists Task Force on Acute Pain Management. Practice guidelines for acute pain management in the perioperative setting: an updated report by the American Society of Anesthesiologists Task Force on Acute Pain Management Anesthesiology 20121162248–273.273

Service evaluation project proposal was approved by the audit department. Ethical approval was not sought. There are no known conflicts of interest.

Abstract Title:

Length of stay in elective hip/knee arthroplasty patients with Prilocaine spinal anaesthesia.

S Koodlahalli Thippaiah[1] B Packiananthaswamy[2] SG Ram[3] Hull and East

Yorkshire Hospitals NHS Trust

Introduction: Intrathecal 2% Prilocaine is routine used for day surgery procedures but it has quick onset and intermediate duration of action upto 4 hours compared to intrathecal 0.5% Bupivacaine[1]. Prilocaine has shown faster discharge rates and may allow service improvement through benefits to individual patients and enhance recovery programmes (ERAS) [2, 3]. Early physiotherapy and early mobilisation helps to achieve the requirements for discharge criteria, thereby enhancing the recovery and minimising hospital acquired complications. Because of added advantage for ERAS, we use 2% hyperbaric prilocaine (3.2ml) for our lower limb arthroplasties.

Methods: We conducted a retrospective audit looking into data of all patients who had 2% prilocaine spinal anaesthesia for elective hip/knee arthroplasty from February 2016 to February 2017. We collected data from 38 patients. Parameters included: Time of anaesthetist's spinal anaesthetic preparation to time of adequate block (defined as anaesthetic ready time/onset of block), surgical duration, time for first physiotherapy, length of stay in the hospital and complication if any. The data were analysed using excel spreadsheet and interpreted statistically.

Results: 38 patients were included in the study. 74% (n=26) were females. ASA grade varied from 1 to 3. Twenty patients had total hip replacement and eighteen patients had total knee replacement. Anaesthetic onset time was 4.5 minutes (mean) with range 3 to 6 minutes. Total duration of hip surgery was 86 minutes (mean) with range 57 to 131 minutes. While total duration of knee surgery was 99 minutes (mean) with range 55 to 139 minutes.

83% patients (n=32) had physiotherapy on same day. Remaining (n=6) patients had physiotherapy on the following day. Length of stay in hospital has mean of 3 days, median of 3 and range 1-6 days.

Conclusion: Patients undergoing hip/knee arthroplasty with Prilocaine spinal anaesthesia has intermediate duration of action lasting upto 180 minutes allowing for physiotherapy to be performed in most patients on the same day. Same day physiotherapy has enhanced their recovery reducing their length of stay from 4.8 days (hospital data for primary Hips/Knee replacements) to 3 days in those groups of patients.

References:(1)Daniel E Becker, Kenneth L Reed. Essentials of Local Anesthetic Pharmacology. *Anesth Prog.* 2006 Fall; 53(3): 98–109. (2) Rätsch G1, Niebergall H, Hauenstein L, Reber A. Spinal anaesthesia in day-case surgery. Optimisation of procedures. *Anaesthesist.* 2007 Apr;56(4):322-7.(3) Scottish Medicine Consortium.- prilocaine hydrochloride 2% hyperbaric solution for injection. Available from: http://www.scottishmedicines.org.uk/files/advice/prilocaine_hydrochloride_hyperbaric_solution_Prilotekal_FINAL_DECEMBER_2010_doc_for_website.pdf

Abstract Title:

The femoral nerve block: an unhappy marriage with total knee replacement

Joshue McGuire

Introduction

For routine, elective large joint arthroplasty, early mobilisation is essential to aid recovery and regain of functionality (1). The choice of anaesthetic technique has an effect on this process. Inadequacy of analgesia along with adverse effects such as prolonged motor block, nausea and vomiting all play a role. The aim of this audit was to quantify this effect.

Methods

50 consecutive elective, total knee replacements were assessed in a specialist orthopaedic centre. Electronic patient records were examined and various aspects of care analysed. We recorded their patient's length of stay, the anaesthetic technique utilised, post-operative analgesic usage and barriers to physiotherapy.

Results

Of the 50 patients, there was significant variation in anaesthetic technique utilised. In the THR group, 78% of patients received a general anaesthetic. There were significant variations as to whether the technique was then combined with subarachnoid or peripheral nerve blocks. 78% of patients received a single nerve or combination peripheral nerve block. If utilised, the femoral nerve block was the most common peripheral nerve block utilised.

The most common barrier recorded by the physiotherapists was uncontrolled pain. For patients who received a peripheral nerve block, a significant proportion were unable to mobilise due to ongoing motor block. In the group of patients who received a femoral nerve block 75% experienced a barrier to physiotherapy; 30% were in too much pain to mobilise. Patients who received an adductor canal block did not have any barriers to physiotherapy.

Conclusions

In the presence of significant variability of anaesthetic technique a substantial portion of patients experienced a delay in their journey, implying a need for a standardised, evidence-based approach (2). Femoral nerve blocks were not effective at preventing pain in this population, moreover the resultant motor block is a common barrier to physiotherapy. Alternative techniques such as the adductor canal block should be considered.

1. Sourdet S, Lafont C, Rolland Y, Nourhashemi F, Andrieu S, Vellas B. Preventable Iatrogenic Disability in Elderly Patients During Hospitalization. J Am Med Dir Assoc. 2015;16(8):674-81.
2. Association of Anaesthetists of Great Britain and Ireland. Peri-operative care of the elderly 2014. Anaesthesia 2014; 69 s1: pages 81-98

Declaration: No conflict interest. Appropriate approval gained.

Abstract Title:

Improving outcomes post elective lower limb arthroplasty – variation in anaesthetic practice and the femoral nerve block as a barrier.

Joshue McGuire, Aziz Easat, Adrian Wong, David Garry, Nicholas Bottomley and Vipul Jain. Oxford University Hospitals NHS Foundation Trust

Introduction

For routine, elective large joint arthroplasty, early mobilisation is essential to aid recovery and regain of functionality (1). The choice of anaesthetic technique has an effect on this process. Inadequacy of analgesia along with adverse effects such as prolonged motor block, nausea and vomiting all play a role. The aim of this audit was to quantify this effect.

Methods

100 consecutive elective cases (50 THRs, 50 TKRs) were assessed in a specialist orthopaedic centre. Electronic patient records were examined and various aspects of care analysed. We recorded their patient's length of stay, the anaesthetic technique utilised, post-operative analgesic usage and barriers to physiotherapy.

Results

Of the 100 patients, there was significant variation in anaesthetic technique utilised. In the THR group, 78% of patients received spinal anaesthesia. There were significant variations as to whether the technique was then combined with general anaesthesia, sedation or peripheral nerve blocks. In the TKR group, 50% of patients received a general anaesthetic combined with peripheral nerve blocks.

The most common barrier recorded by the physiotherapists was uncontrolled pain. For patients who received a peripheral nerve block, a significant proportion were unable to mobilise due to ongoing motor block.

In the group of patients who received a femoral nerve block 75% experienced a barrier to physiotherapy; 30% were in too much pain to mobilise

Conclusions

In the presence of significant variability of anaesthetic technique a substantial portion of patients experienced a delay in their journey, implying a need for a standardised, evidence-based approach (2). Femoral nerve blocks were not effective at preventing pain in this population, moreover the resultant motor block is a common barrier to physiotherapy. Alternative techniques such as the adductor canal block should be considered.

1. Sourdet S, Lafont C, Rolland Y, Nourhashemi F, Andrieu S, Vellas B. Preventable Iatrogenic Disability in Elderly Patients During Hospitalization. J Am Med Dir Assoc. 2015;16(8):674-81.
2. Association of Anaesthetists of Great Britain and Ireland. Peri-operative care of the elderly 2014. Anaesthesia 2014; 69 s1: pages 81-98

Declaration: No conflict interest. Appropriate approval gained.

Abstract Title:

A National Survey of Pre-Operative Analgesia in Patients with Proximal Femoral Fracture

Chris Browell, Iain Walker, Jonathon Womack, Sameer Ahmed, Mritunjay Varma, Feras El-Jelani

Introduction

In 2013 there were 64,000 cases of fractured neck of femur in the UK, with a mean hospital stay of 19.8 days, and a 30 day mortality of 8%[1]. Patients who have sustained fractures will experience pain from the time of the injury until fixation and then, subsequently, post-operatively. Delivery of prompt regional anaesthesia improves patient experience and can reduce pre-operative myocardial infarction[2]. Our aim was to investigate current practice, method of delivery and barriers to the delivery of regional anaesthesia.

Methods

A survey was sent to trauma centres in the UK using SurveyMonkey™ via the National Hip Fracture Database. It questioned centres regarding their provision of pre-operative analgesia; regional anaesthesia for proximal femoral fractures; perceived barriers to providing regional anaesthesia, follow-up and audit.

Results

87 UK trauma units replied. The use of pre-operative analgesia varied widely; 69.7% of trauma units stated that they routinely provided regional anaesthesia in some form pre-operatively. The most common technique (55.3%) reported to be used was a single shot landmark fascia iliaca block. Ultrasound guided blocks were used in 30.6% of units. The remaining units encouraged regional anaesthesia but had no specific protocol. Only 2 trauma units place nerve catheters routinely for extended analgesia. Regional analgesia was provided predominately by the Emergency Physician (81.2%) in the Emergency department. Perceived barriers to performing a regional technique included coagulopathy, con-current anticoagulant use and lack of trained staff. Of interest 16% of respondent units have trained non-medical health care professional to perform regional blocks. 74% of the trauma units do not have a target time for performing a regional technique and 43% of the units do not have a mechanism for auditing the service.

Discussion

The survey represents current practice within UK trauma units. It is evident practice varies widely in the delivery of regional anaesthesia in the pre-operative period. Hospitals are often not working from a guideline and thus audit is infrequent. This is complicated by multiple specialities delivering regional anaesthesia, in a variety of locations.

Conclusions

The National Institute for Clinical Excellence (NICE) comments in their report that pain management is often sub-optimal for proximal femoral fracture[3]. There is therefore scope to establish practical guidelines to improve delivery of regional anaesthesia. Further to our survey, more research is warranted to establish the optimal technique and provision strategy for regional anaesthesia for proximal femoral fractures in the pre-operative period.

References

1. Royal College of Physicians. National Hip Fracture Database annual report 2014. London: RCP, 2014
2. Matot I, Oppenheim-Eden A, Ratrot R, Baranova J, Davidson E, Eylon S, Peyser A, Liebergall M. Preoperative Cardiac Events in Elderly Patients with Hip Fracture Randomized to Epidural or Conventional Analgesia. Anesthesiology 2003; 98:156–63.
3. National Institute for Health and Care Excellence. Hip fracture quality standard (QS16). London: NICE, 2012.

Can a DGH Fascia Iliaca Block Service survive being left to its own devices?

Ben Carey (ST4 St. Thomas' Hospital); Luke Foster (CT1 Royal Surrey County Hospital); Robin Wingate (Consultant, Royal Liverpool University Hospital); Nick Courtenay-Evans (Consultant, East Surrey Hospital); Gill Foxall (Consultant on leave from RSCH); Matt Berry (Consultant RSCH); Hersh Saxena (Consultant RSCH)

Introduction

Peripheral nerve blockade can be used to augment analgesia in patients with a fractured neck of femur (NOF), reducing opiate requirements in a vulnerable patient group (1). A local Fascia Iliaca Block (FIB) service was introduced in 2014 with low uptake, which was then updated to an ED doctor led service with anaesthetic support after re-audit in 2015, to achieve a rate of 86% FIB performance or documented contraindication to FIB (2). This audit has come back 2 years later to see whether these results are being replicated despite little or no anaesthetic input into this service over this period.

Methods

Audit occurred over a period of 8 weeks in January-March 2015, and January-March 2017, with NOF patients identified after admission. Notes were retrospectively audited for demographics, admission date & time, speciality delivering FIB, and any contraindications/complications noted.

Results

	Jan-Mar 2015	Jan-Mar 2017
Sample Size	43	40
FIB performed	31	27
Contraindications noted	6	4
FIB performed/contraindicated	37 (86%)	31 (78%)
Mean FIB time after admission	2h43	2h34
Performed by:	ED: 23; Anaes:6; Unknown:2	ED: 25; Anaes:1; Unknown:1

Original audit had 2 exclusions (1 missed diagnosis & 1 fall on ward) and 6 contraindications (4 raised INR; 1 'too confused to consent'; 1 unable to find medication). Re-audit had no exclusions and 4 contraindications (2 raised INR; 1 'agitation'; 1 on Apixaban). No complications were noted.

Discussion

One of the major problems with service provision is being able to sustain it after it has been introduced. One of the authors of this poster (BC) designed the protocol, and performed the original audits, interventions and education around the service, in 2014 and 2015. But, over 2015/16, the trainees involved moved hospital, the lead for regional anaesthesia went on long-term leave and the regional fellow was not replaced, and very few of the original anaesthetic team who set up the service remained at the hospital. As such, anaesthetic input into the service decreased, and there were no education sessions for ED about how to perform a FIB, and no audit or performance assessments performed. This is likely to be common for a number of services introduced where team members go elsewhere, are distracted by exams or personal matters, or simply move onto the next project.

In light of this, the numbers from the follow-up audit are encouraging. To achieve 78% FIB or documentation as to why it was contraindicated is remarkable, albeit a drop from the original 86% benchmark. Clearly there is room for improvement, which could be through providing teaching and providing anaesthetic support for any blocks not performed, and there is an argument that many contraindications (e.g. raised INR) could still receive a FIB if performed safely with ultrasound. To have achieved this high rate of FIBs is testament to the willingness to adopt the technique in a busy A&E department by ED doctors, particularly the Senior Registrars and Consultants. It also suggests that the protocol, documentation (notably the proformas as part of the NOF pathway) and original teaching may have been robust enough to leave a lasting legacy that has survived despite the lack of input from the Anaesthetic department. As before, there are problems with the documentation of observations post-FIB, and a complete lack of documentation of the FIB's analgesic efficacy via pre- and post-FIB pain scores, which again could be addressed through education.

Conclusion

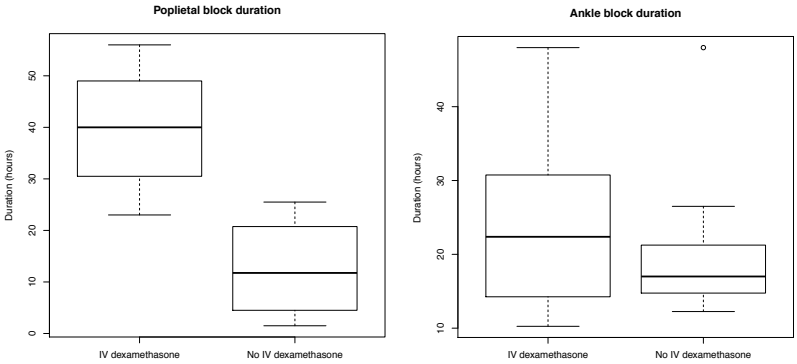
The perpetuation of any service post-introduction is an area that can be neglected, yet the FIB service in this DGH has survived despite staff upheaval. Work should focus on education and audit, aiming to include those patients who would still be eligible but fail to have a FIB, and improving documentation.

References
1) The National Institute for Health and Clinical Excellence. Clinical Guideline 124. The management of hip fracture in adults. 2011.
2) 'Setting up a Multidisciplinary Fascia Iliaca Block Delivery Service in a District General Hospital.' B. Carey et al. 2015. Poster presented at RA-UK May 2015

Abstract Title: Duration, effectiveness and factors associated with lower limb blocks – a prospective audit

Maria Armstrong, Conor McIvor, William Scott, John Dolan
Glasgow Royal Infirmary, Glasgow, UK

Introduction Effective ankle and popliteal blocks enable many patients having foot and ankle procedures to be discharged on the day of surgery. A broadly accepted standard of analgesia for day surgery patients is that 95% should not experience severe pain in the first 48 hours post operatively.[1] The majority of foot and ankle patients get a regional block. We audited adherence to this standard across all foot and ankle block patients and looked at association with factors likely to contribute to analgesic efficacy.
Methods Patients were briefed in clinic and also on the day of surgery that they may receive a follow up phone call a few days after surgery. All were phoned between 3 and 14 days after surgery. They were again asked if they could answer some questions and explicitly given option to decline without any consequence. Up to 3 attempts at communication were made. This was discussed with the regional ethics committee chair who agreed that it would not require formal ethics approval. All stored data was anonymised.
All patients were asked about when they first felt pain, how severe it was, sleep disturbance, medications they took in the first 48 hours and if they would recommend a block. Details of technique, perioperative medication, timings and analgesia and were obtained from the electronic notes. Data analysis was in R and Excel 2011.
Results 59 patients were identified over 8 weeks. Contact was successful for 44 patients. 6 were excluded. 9 had popliteal blocks. There were 29 ankle blocks targeting between 3 and 5 nerves. 1 popliteal and 2 ankle blocks were regarded as technical failures with severe pain scores and substantial morphine required immediately post op. These were not included in analysis of duration of action of blocks.



Ttests were performed. For popliteal blocks p=0.01 and for ankle blocks p=0.25.
The dose of dexamethasone was 3.3mg in all but one case. No perineural adjuncts were added. There were non significant trends towards taking 10pm oral analgesia being associated with both increased duration of analgesia and less severe pain. Nearly a third of patients reported disturbed sleep the first night. Even when blocks were ineffective patients would recommend regional analgesia and request it again.
Discussion There is a clear increase in length of block with dexamethasone with popliteal blocks and a positive but less clearly defined signal from ankle blocks. A good body of evidence exists supporting efficacy of perineural dexamethasone in regional blockade although it remains off license and hence practice remains mixed.[2] Intravenous dexamethasone is cheap, acceptable and may be as effective.[3][4]

---

[1] RCOA Audit recipes 2012. RCOA.
[2] Chong, MA et al. Perineural Versus Intravenous Dexamethasone as an Adjuvant for Peripheral Nerve Blocks: A Systematic Review and Meta-Analysis.

Reg Anes Pain Med. Online first 1/3/17. DOI 10.1097/AAP.0000000000000571

[3] Rahangdale R. et al. The Effects of Perineural Versus Intravenous Dexamethasone on Sciatic Nerve Blockade Outcomes: A Randomized, Double-Blind, Placebo-Controlled Study. *Anaes Analg* 118(5): 1113-1119
[4] RL Dawson et.al. A randomised controlled trial of perineural vs intravenous dexamethasone for foot surgery. *Anaesthesia.* 71(3):285-90

Conclusion This small number study supports a role for iv dexamethasone as a powerful cheap safe widely accepted analgesic adjunct in lower limb blockade particularly in popliteal blockade in major foot surgery, although not all are yet using it in our institution.

Abstract Title:

Efficacy of Suprascapular Nerve blocks in Shoulder Arthroscopy.

Dr R Cruickshank, Dr S Williams, Dr A Sajith

Salisbury District General Hospital

Suprascapular nerve blockade (SSNB) is known to be efficacious in providing useful analgesia following shoulder surgery. However to our knowledge the use of this nerve block has not been compared in the setting of sub-acromial infiltration of local anaesthesia.

In this study we collected prospective data on the analgesia provided in two groups of patients undergoing elective shoulder arthroscopy. Group one received SSNB plus sub-acromial infiltration instillation of local anaesthetic. Group two received sub-acromial instillation alone.

In group one SSNB was performed under GA using a modified Winnies approach with nerve stimulator. Injectate consisted of 20ml 0.25% Levo-bupivacaine. Additionally 20ml of 0.25% Levo-bupivacaine was injected into the sub-acromial space. Group two received sub-acromial injection only.

All patients received pre-operative paracetamol and, where appropriate, Ibuprofen. Intra-operative opiates were titrated to clinical requirement.

Results were collected for analgesic requirements, pain scores and complications (median scores provided):

Number – Group 1 21 vs Group 2 23
Age – 53 vs 53
Total fentanyl consumption – 138mcg vs 152 mcg
Total morphine consumption – 9.1mg vs 13.2mg
Pain score recovery – 3 vs 5.8
Pain score ward – 1.7 vs 2.7
Number patients painfree post-op 8 vs 2
No complications were recorded in either group.

From these results we conclude that SSNB confers useful additional analgesia in addition to sub-acromial infiltration. As a straightforward, safe regional technique it can be learnt quickly by anaesthetists for use in elective day-case surgery.

Abstract Title: Effect of ultrasound-guided regional anaesthesia for foot & ankle surgery on Patient Reported Outcome Measures; a retrospective pilot study.

J Fisher[1], J Bowness[1], A Taylor[1], P. Raju[1], F Harrold[2], GA McLeod[3]

Introduction The impact of pre-incisional regional nerve blockade on chronic pain and functional outcome after surgery has yet to be defined[1]. Anecdotally, patients receiving ultrasound-guided ankle nerve block for foot surgery in our department report improved pain and outcome six months post-operatively. Patient Reported Outcome Measures (PROMs) are used to assess patients after orthopaedic surgery. It consists of validated self-reported scoring systems that quantify patient pain and well-being before and after their procedure. The orthopaedic surgery department in NHS Tayside has begun collecting this data for patients undergoing foot and ankle surgery. The aim of this study was to identify whether an ankle block prior to incision is associated with improved PROM scores.

Methods Caldicott Guardiann approval was obtained to undertake a retrospective review of patient records, for patients who underwent foot surgery. PROMs data from the pre-operative and post-operative (6 month) assessments were assessed. Eight anaesthetists performed an ankle block for two surgeons performing surgery. Patients were identified as receiving an ankle block if it was used as the sole anaesthetic technique or combined with general or spinal anaesthesia. 41 patient records were assessed; 16 having undergone an ankle block and 25 did not. Scoring systems included the EuroQol (EQ) questionnaires which consists of two parts: an EQ-5D (questions on several indicators of health, a higher number corresponding to better health) and EQ-5D-VAS (visual analogue scale of health status) [2]. Patients also completed the Manchester-Oxford Foot Questionnaire (MOxFQ), a 16-item survey developed for use in researching outcomes after foot and ankle surgery [3] The raw scores from each item are converted to a metric from 0 to 100, where 100 denotes the most severe suffering. We calculated the mean scores for both EQ-5D and VAS, the overall MOxFQ and three questions specifically concerning pain from MOxFQ.

Results Both groups demonstrated some improvement in mean scores across all PROMs at 6 months. EQ-5D scores increased by 0.2 for both groups of patients (range -0.5 to 1.0). The EQ-5D-VAS (from 0 to 100) changed minimally from pre-operative baseline scores in both groups. However, the mean scores taken from individual MOxFQ pain questions indicate a potentially greater reduction in pain scores for patients who received a block. Six months after surgery, mean (standard deviation; SD) maximum foot and ankle scores were 30.0 (24.3) versus 38.5 (29.4), mean (SD) maximum pain on walking was 28.8 (29.5) versus 43.3 (36.6), and mean (SD) maximum pain on social interaction was 22.5 (28.9) versus 29.6 (28.8) for ankle block and alternative techniques respectively. Mean (SD) total MOxFQ scores reduced by over a quarter from 38.3 (30.7) to 27.6 (27.1).

Discussion Our results indicate an association between an ankle block for foot surgery and improved PROMs, specifically pain scores, 6 months after surgery. Our small sample size limits the statistical analysis, but does lay the foundation for further investigation. Using a repeat measures ANOVA design (G*Power, Dusseldorf), ⟨ = 0.05 and ® = 0.90, we calculated we would require a sample size of at least 400 to detect a significant difference in total MOxFQ between groups.

Conclusions Ankle nerve block for foot and ankle surgery may correlate with improved PROMs measured at 6 month follow-up. Further study is needed to determine if there is a significant difference in outcome. Future investigations assessing the translation of acute to chronic pain should also consider variables such as psychological factors, the surgical procedure and post-operative analgesic management.

References.

1. Andreae MH, Andreae DA. Local anaesthetics and regional anaesthesia for preventing chronic pain after surgery. The Cochrane database of systematic reviews. 2012;10:CD007105. doi:10.1002/14651858.CD007105.pub2.
2. Devlin N, Parkin D, Browne J. Patient-reported outcomes in the NHS: New methods for analysing and reporting EQ-5D data. Health Economics. 2010;19(8):886–905. doi: 10.1002/hec.1608
3. Morley D., Jenkinson C., Doll H., Lavis G., Sharp R., Cooke P., and Dawson J. The Manchester–Oxford Foot Questionnaire (MOXFQ) – Development and validation of a summary index score. Bone Joint Research, 2013; 2(4):66–9

Abstract Title: Assessment of 'Stop Before You Block' Practice

Priya Shekar, Meela Ghosh

Introduction

The 'Stop Before You Block' (SBYB) campaign is a National Patient Safety Agency (NPSA) initiative introduced in 2010[1]. The aim of the initiative is to reduce the incidence of wrong-side nerve blocks being performed during regional anaesthesia, which can lead to serious complications including wrong site surgery. Wrong-side nerve blocks are now also a NPSA Never Event[2] and have previously occurred within our Trust. The aim of the project was to assess SBYB practice of anaesthetists working at the Freeman Hospital Central Operating Theatres. The project standard was 100% adherence to SBYB practice for regional nerve blocks performed on both awake and anaesthetised patients.

Methods

A prospective audit was carried out between June and September 2016. All anaesthetists who performed regional nerve blocks for orthopaedic procedures were included. A proforma was produced and the anaesthetic assistant who was in the anaesthetic room while the block was performed was asked to complete it. It was asked that the proformas were completed as discreetly as possible to try and avoid anaesthetists being aware that their practice was being audited. The proforma contained simple questions regarding the WHO sign in and the specific steps of the SBYB process.

Results

A total of 52 nerve blocks were audited. 77% of the blocks were performed on patients who were anaesthetised rather than being awake. The WHO Surgical Safety Sign In had 100% compliance. 73% of cases fully adhered to SBYB practice, with SBYB practice better adhered to in blocks on awake patients compared to blocks on anaesthetised patients (92% vs. 68%). In anaesthetised patients, the patient's consent form was rechecked in 80% of cases, and only 68% anaesthetists checked both the side and site of the block prior to needle insertion. Additional comments included *'the process was rushed due to a busy list'*, and *'anaesthetist required prompting to do SBYB'*.

Discussion

Anaesthetists are not meeting SBYB audit standards within this hospital. Adherence to SBYB practice is better for awake patients compared to anaesthetised patients; however the risk of an incorrect side block occurring is higher in anaesthetised patients. Documented reasons for failure of SBYB practice were time constraints, lack of awareness by anaesthetist and anaesthetic assistants of the process, and the potential belief that SBYB is an extra unnecessary step. At the time of the audit, SBYB posters were in every anaesthetic room acting as a visual aid memoire. The results of the project showed that further reminders and education regarding SBYB and its relevance was needed. This project was presented at the Anaesthetic Department audit meeting in September 2016. It was felt that dissemination of these results and education of all anaesthetic team members would be the most effective method of changing practice. Subsequently, the project was presented to the Operating Department Practitioners and Anaesthetic Nurses at their audit meeting. Also, there are now large SBYB signs on each of the ultrasound machines in theatres with the aim being that anaesthetists technically should not be able to perform a block without seeing this visual reminder.

Conclusion

Despite full adherence to the SBYB process not always being achieved, there are still some safe steps taken by anaesthetists prior to performing nerve blocks. This is reassuring, as the purpose behind SBYB is to improve patient safety. In order for the process to be successful it requires engagement and shared responsibility by all anaesthetic team members. With changes now implemented, it is hoped that there will be an increase in SBYB compliance when a re-audit takes place later this year.

References

1. **NHS England SALG, Nottingham Hospitals NHS Trust, RA-UK. *Stop Before You Block Campaign.* Available from: https://www.rcoa.ac.uk/sites/default/files/CSQ-PS-sbyb-supporting.pdf [Accessed 20th March 2017]**
2. **NHS England. *Never Events List 2015/16.* March 2015. Available from: https://www.england.nhs.uk/wp-content/uploads/2015/03/never-evnts-list-15-16.pdf [Accessed 20th March 2017]**

3. **SALG. *Wrong Site Blocks During Surgery*. November 2010. Available from http://www.rcoa.ac.uk/system/files/CSQ-PS-10-wrong-site-block.pdf [Accessed 20th March 2017]**
(There are no conflicts of interest and no ethical approval was needed)

Abstract Title: Orthopaedic Theatre Throughput Enhancement based on a Mobile Block Room Model. A Quality Improvement Project.

Dr Rachael L Bird, Dr Ian Baxter

Introduction

Providing regional anaesthesia for patients can have outcome benefits including decreased post-operative pain, nausea and vomiting, decreased recovery times, increased patient satisfaction and reduction in opioid use[1,2]. Providing this service requires expertise and additional theatre time. In the climate of limited resources and increasing demand, improvements in efficiency and productivity alongside quality improvement are sought after. Traditionally, operating theatres run in a linear manner, but by performing regional anaesthesia for surgical lists between cases, in a different room, anaesthesia and surgery for consecutive procedures can overlap. Thereby processing the patients in parallel[3]. Our aim was to move from standard linear processing to a parallel processing model, using a mobile 'Block Room' providing a regional anaesthesia service to improve theatre efficiency and productivity, reduce waiting lists, and improve quality by concentrating skills to a group of anaesthetists. The focus of the service was on Foot and Ankle surgery due to its high volume of regional anaesthesia and long waiting list at our institution.

Methods

A mobile block room team consisting of one consultant anaesthetist and one anaesthetic assistant was piloted for Foot and Ankle Orthopaedic surgery at the Freeman Hospital over a 10-month period. Covering 5 sessions per week, it commenced on April 18th 2016. The Block Room team completed regional and general anaesthesia in the anaesthetic rooms of theatres already running to reduce non-operating time. The Trust routinely gathers data on indicators of efficiency, length of procedure, session finish times, case number per day, severe pain in recovery and waiting lists. These parameters continued to be collected for analysis of data pre and post Block Room pilot start.

Results

Average number of cases performed per day increased from 3.6 to 4 during the pilot period. The Case mix also changed, with more long cases (>120mins) performed on Block Room days compared to non-Block Room days (47.8% vs 29.8%). The number of late finishes was reduced from 16.7% to 10.2% after pilot start. Efficiency of planned session overall saw a median shift from 70.7% to 73.5%. Waiting list analysis showed a 23.2% reduction (54 patients) in waiting list of over 18 weeks, and 15.7% reduction in number of patients (91 patients) waiting overall since the start of the Block Room pilot.

Discussion

An increase of 0.4 cases per day is projected as 52 cases per year at the current level of Block Room service. If the service expands to 10 sessions per week it would see potential for 104 additional Foot and Ankle cases per year. The altered case mix suggests more available surgical time since pilot start as the proportion of long cases has markedly increased, alongside an increase in cases per day. This increase in longer cases was deliberate on behalf of the surgeons to reflect the composition of their waiting lists. Session overruns have reduced, resulting in a reduction in expenditure (staffing) and reduced impact on next day surgery. Having patients on surgical waiting lists for over 18 weeks incurs a financial penalty of £300 per patient per month. The waiting list was rising month on month, peaking in April 2016 at the time of Block Room introduction, and continues to fall since. This has resulted in a net financial benefit to the trust from the extra cases and the reduced fines from 18- week waiters.

Conclusions

Parallel processing with a mobile block room has proven to enhance theatre throughput resulting in an increase in productivity and efficiency, providing additional income whilst reducing expenditure by reducing overruns, outsourcing, and waiting list penalties. A Block Room is cost effective, income generating and improves quality.

References

1. Webster F, Bremner S, McCartney CJ. Patient experiences as knowledge for the evidence base: A qualitative approach to understanding patient experiences regarding the use of regional anaesthesia for hip and knee arthroplasty. Reg Anesth Pain Med 2011;36(5):461-5
2. Liu SS, Strodtbeck WM, Richman JM, Wu CL. A comparison of Regional Versus General Anaesthesia for Ambulatory Anaesthesia: A Meta-analysis of Randomized Controlled Trials. Anesth Analg. 2005;101(6):1634-42
3. Baxter I, Haslam N, Morrison A. The development of a Block Room. Anaesthesia News Dec 2013, (317): 27-28

Abstract Title: Evolution of a regional anaesthesia service

R Harris, I Mehmood, R Hartley
Salford Royal NHS Foundation Trust, Salford, UK

Introduction

Regional anaesthesia is commonly used at Salford as the sole anaesthetic technique for upper limb surgery. A previous audit in 2012 (1) showed positive patient experiences from regional anaesthesia. We wanted to audit current practice at our institution, compare with previous experience, and identify any areas for improvement.

Methods

Data was collected for patients undergoing forearm and hand surgery solely under regional anaesthesia between September 2016 and January 2017. Patients were then contacted by telephone between 2 and 7 days later to complete follow up.

Results

We identified 70 patients undergoing hand and forearm surgery under regional anaesthesia; 50 patients were successfully followed up via telephone call. A 'stop before you block' moment was documented in 64 cases, with no details recorded for the other 6. Ultrasound guidance was used in 100% of cases. Out of 6 patients undergoing brachial plexus block with a short-acting local anaesthetic, 4 needed additional intra-operative analgesia. Surgery was catergorised as arthroscopic, soft tissue, minor bone or bony surgery. Mean pain scores following block dissipation were 4.6, 4.1, 4.8 and 7.7 in these categories respectively. Only 45% of patients undergoing bony surgery rated their discharge analgesia as adequate, compared with an overall adequacy rate of 80%. 94% of patients said they would have a regional block again. However, 40% cited pain on insertion of the nerve block or disliked the subsequent sensation of a numb arm.

Discussion

Consistent with the previous audit (1), patients undergoing upper limb surgery continue to be extremely satisfied to receive regional anaesthesia alone. A number of patients did not expect the discomfort associated with nerve block insertion or the prolonged sensation of an anaesthetised arm. An information leaflet has been printed to explain regional anaesthesia options, conduct, risks, side effects and post-operative care. This will be given to all patients listed for upper limb surgery at pre-operative assessment to facilitate the consent process.

Patients undergoing bony surgery experienced comparatively higher post-operative pain scores. A pathway for supplying opiates to selected patients is in the process of being implemented. Documentation of a 'stop before you block' moment continues to be of medicolegal importance and has been highlighted to the department.

References

1. Hartley R, Mehmood I, Allan M. Patients' experiences of ultrasound guided upper limb regional anaesthesia in Salford. *Anaesthesia.* 2013; 68 (Supplement 3): 74

Abstract Title: Quadratus Lumborum Block For Post Operative Analgesia In Orthopaedic Pelvic Reconstructive Surgery

Samuel Hird, Samson Ma, Alex Eeles, Puneet Ranote, Teresa Parras. St Georges Hospital, Tooting, London

Orthopaedic reconstructive surgery after pelvic trauma is associated with significant post-operative pain and side effects associated with excessive morphine use. There is currently no robust data comparing the use of Quadratus Lumborum Blocks (QLB) to other methods of analgesia in pelvic reconstruction, which is a significant part of the workload at our tertiary trauma centre. Although neuroaxial blockade may be used it is avoided due to difficulties in positioning and the subsequent inability to test perineal sensation immediately post operatively. We aim to demonstrate the effectiveness of QLB as part of a multimodal analgesia in pelvic reconstructive surgery by assessing postoperative pain, nausea and consumption of morphine.

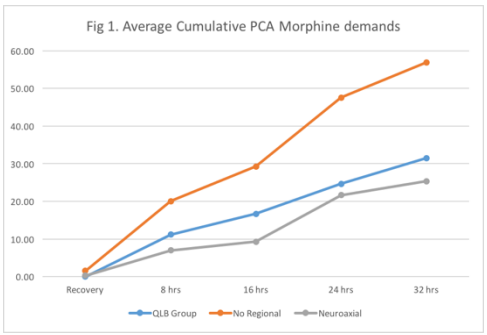
Methods

We conducted a part prospective and part retrospective study looking at all patients who had undergone pelvic reconstruction surgery due to trauma. The data was collected for the period October 2015 to August 2016. The admission documents, anaesthetic charts and post-operative notes were examined for the following data for comparison in the 3 groups- those who had QLB, those who had no regional blocks (NRB) and those who had neuraxial blocks (NB).

1. Intra-operative morphine use
2. Post operative Morphine use at recovery (time 0 hours), 8, 16, 24 & 36 hours
3. Post operative Pain scores (0 – 4) at recovery (time 0 hours), 8, 16, 24 & 36 hours
4. Post operative Sedation scores (0 – 4) at recovery (time 0 hours), 8, 16, 24 & 36 hours
5. Post operative Nausea scores (0 – 4) at recovery (time 0 hours), 8, 16, 24 & 36 hours
6. Length of stay in recovery

Results

A total of 24 cases were captured in this period QLB (6) NRB (15) NB (3). We found comparable pain scores at all intervals with QLB and NB group (average 0.67) ; these were significantly less than the NRB group (average 1.27). More morphine was administered in the NRB group than the QLB and NB groups (10.27mg vs 6.67mg). Post operative morphine demands and consumption was comparable for the QLB and NB groups and less than the NRB group (Fig 1). Post-operative nausea and sedation scores at these intervals were low and comparable with all 3 groups. Length of stay in recovery was very similar in all 3 groups.



Discussion

QLB is is a relatively low risk regional technique that can provide good intraoperative and postoperative analgesia for Orthopaedic pelvic reconstructive surgery. It has been well documented as a technique for hip fracture surgery, laparotomy, nephrectomy and caesarean section. Its use has recently been compared to continuous lumbar plexus block [1]. In this study, although the NR were provided with comparable analgesia for this type of surgery, our surgeons prefer sacral sparing to allow them to determine postoperative sacral nerve functions, which would otherwise be blocked by the neuroaxial technique. Although we did not demonstrate significant differences in postoperative nausea and sedation or length of stay in recovery we are aware that there were limitations due to the small number of patients.

Conclusions

QLB is a good choice of regional anaesthetic that can significantly reduce postoperative pain in Orthopaedic pelvic reconstructive surgery. It should follow that reduction in morphine use should lead to reduction in side effects such as sedation and nausea, this

had not been demonstrated, perhaps due to limited number of patients studied in these groups. Future studies should aim to gather a more representative sample size to demonstrate any significant differences.

References

1. La Colla L, Uskova A, Ben-David B. Single-shot Quadratus Lumborum Block for Postoperative Analgesia After Minimally Invasive Hip Arthroplasty: A New Alternative to Continuous Lumbar Plexus Block? *Regional Anesthesia & Pain Medicine:* January/February 2017 - Volume 42 - Issue 1 - p 125–126

Abstract Title: Is there a role of PECS blocks in simple mastectomy surgeries? A Quality improvement project

Dr Amitabh Aggarwal, Dr Mike Blundell, Mr Seb Aspinall

Introduction

Breast Surgery is one of the common surgeries performed worldwide with about 16,485 women undergoing mastectomy in 2008-2009[1]. Mastectomy patients are prone to considerable acute postoperative pain, restricted shoulder mobility, PONV and chronic post-surgical pain. Regional Anaesthesia (RA) modalities used for analgesia post mastectomy have evolved with time with thoracic paravertebral block being the most widely used technique currently. However, new technique of Pectoral nerve (Pecs) block, developed recently, has been shown to be devoid of major adverse effects.

The aim of this Quality improvement project was to evaluate the effect of Pecs block on patients undergoing simple mastectomy surgery at Northumbria Trust hospitals.

Methods

This was a prospective Quality improvement project looking at the usefulness of Regional Anaesthesia for simple mastectomy surgeries, especially after the introduction of the Pecs block. We also did the retrospective analysis of mastectomy database over the period of 2 years looking at the cases when no RA was performed. The primary outcomes evaluated were post-operative analgesia at 4 and 8 hours Using visual analogue scale of 0-10, post-operative opioid use, episodes of PONV and if RA facilitated the process of performing mastectomies as a day case. The RA was performed after a valid patient consent, under GA using the standard ultrasound guided technique.

Results

Data was collected regarding 52 simple mastectomies in total, with 29 cases having no RA and 23 cases having Pecs block.
Patients receiving Pecs block had lower pain scores at 4 and 8 hours post mastectomy surgery (table enclosed).

	No Regional Anaesthesia (n=29)	**Regional Anaesthesia (n=23)**	**p-value**
Pain Score 4 hours (mean +/- SD)	4.6 (2.9)	2.59 (2.89)	*p = 0.017**
Pain Score 8 hours (mean +/- SD)	3.6 (2.1)	1.89 (1.82)	*p= 0.0038**

Patients having Pecs block were discharge as day case (82.6% vs 10.3%, *p= 0.0008**) and had a less incidence of PONV (8.7% vs 44.83%, *p = 0.036**). The 24 hour opioid consumption was less when Pecs block was administered, 26% patients with Pecs block used opioids whereas without Pecs block 48% patients used opioids (*p = 0.298*).

Discussion

The encouraging results of the study make Pecs blocks an attractive option as part of multi-modal analgesia post mastectomy. Patients receiving Pecs block benefit by better overall patient satisfaction, lower postoperative pain, decreased opioid use, less incidence of PONV and earlier discharge to home. Better management of acute pain may decrease the incidence of chronic pain post mastectomy.

Conclusion

Taking active steps to facilitate mastectomy as day case is an important initiative. Our study revealed the benefits of Pecs block in simple mastectomy surgeries. We have implemented a pathway to use Pecs block on all the patients undergoing mastectomy surgery at our hospitals. We are also facilitating training for ultrasound guided Pecs block for all the Anaesthetists involved in the breast surgery cases.

References

1. *National Mastectomy and Breast Reconstruction Audit © 2011.*

Abstract Title: A case series of anterior approach sub-omohyoid suprascapular nerve block for chronic shoulder pain

Dr Ping Chen, ST7 trainee, Addenbrooke's Hospital, Cambridge
Dr James Stimpson, Consultant, Queen Elizabeth Hospital, King's Lynn

Introduction: shoulder pain caused by rotator cuff tear and glenohumeral joint arthritis is a common complaint that can result in significant functional disability and decrease in patients' quality of life. Suprascapular nerve (SSN) block has been proven a safe and effective procedure in shoulder pain therapy.[1, 2] Techniques described in the literature are almost entirely posterior approach, which target the nerve within the supraspinous fossa. The supraclavicular approach of the nerve underneath the omohyoid muscle has been described by Siegenthaler et al.[3] (Figure 1). We have adopted this novel technique in our institute and report the outcomes of the service.

Methods: Patients were referred by orthopaedic surgeons who consider the SSN block might be beneficial for their shoulder pain. 111 patients underwent the procedure during the retrospective data collection period; however only 85 patients with completed follow up data were included in the series. All patients received SSN block using ultrasound-guided supraclavicular approach. 5mls of 0.5% Levo-Bupivacaine followed by 40mg or 80mg Depo-Medrone was administered. Patients were followed up by the referring orthopaedic team. Shoulder function was evaluated using the Oxford Shoulder Score (OSS) before and 2 to 3 weeks after the procedure. The waiting time from referral to procedure was also noted.

Results: There were 64 women and 21 men in the group, mean age were 76.2 years. Majority of the pathology were rotator cuff tear and glenohumeral joint arthritis among the referred patients. The median (IQR) OSS for pre- and post-procedure were respectively 18 (12-23) and 25 (19-33). The Wilcoxon rank sum test demonstrated statistical significance with p value <0.01. The waiting time from referral to procedure for this group of patients was 91 days earlier than the usual pathway of pain management clinic. 2 patients reported a heavy ipsilateral chest; diaphragm movement was normal suggesting blockade of the long thoracic nerve at the point of injection.

Discussion: The SSN is located superficially at sub-omohyoid level compared to its location in the suprascapular fossa. Visualisation and localization of the SSN with ultrasound is therefore very accurate. The omohyoid muscle above the SSN is also an easily identifiable landmark.[3] This service and technique introduced in our institute not only demonstrated the clinical benefit for patient, but also a marked improvement in meeting 18 weeks target and waiting time, adding value to the patient experience.

Conclusions: In our practice, the anterior approach to SSN block is an effective method in achieving pain relief and functional improvement in patients with chronic shoulder pain. Using the experience of shoulder regional anaesthetists to facilitate these blocks can significantly reduce waiting times for this treatment.

No conflicts of interest declared. Patient's consent obtained.

References:

1. Dahan TH, Fortin L, Pelletier M, et al. Double blind randomized clinical trial examining the efficacy of bupivacaine suprascapular nerve blocks in frozen shoulder. *J Rheumato*l. 2000;27:1464-1469
2. Emery P, Bowman S, Weddervun L, et al. Suprascapular nerve block for chronic shoulder pain in rheumatoid arthritis. *BMJ*. 1989;299:1079-1080
3. Siegenthaler A, Moriggl B, Schliessbach J, et al. Ultrasound-guided suprascapular nerve block, description of a novel supraclavicular approach. *Reg Anesth Pain Med*. 2012;37(3):325-328

Abstract Title: Audit of Ultrasound guided Regional Anaesthesia practice at Northumbria Healthcare Trust

Dr. M. Blundell, Consultant Anaesthetist.
Dr. Madhu Adala ST7 Specialist Registrar.
Northumbria Health Care Trust.

Introduction: Ultrasound guided regional anaesthesia (UGRA) has shown to improve patient experience and shorten recovery times following surgery (1). Audit of our UGRA practice is vital to develop a high quality of patient care although the national standards to compare are lacking. Referring to published results from over 23,000 blocks in the International Registry of Regional Anaesthesia (IRORA)(2) we set out 'Quality Measures' for our own UGRA practice within Northumbria Healthcare Trust (NHCT), and use these to assess patient outcomes and experience on a yearly basis in order to maintain standards and improve our service.

Methods: NHCT is a combination of five hospital sites offering regional anaesthesia services using a block room facility. We collected data of our UGRA practice in block rooms from December 2014 to 2015. Of over 2000limb block procedures registered, follow up was carried out and recorded in 299 (15%). Data was collected using a paper questionnaire and included details of surgical procedure, peripheral nerve block, effectiveness of the block in theatre and recovery room, and feedback from a follow up telephone call.

Results: We compared our practice to the NHCT Block Room Quality Measures and found:

NHCT Standard	Results	NHCT Standard	Results
100% procedures should not involve Wrong Side/Site Blocks	100%	>95% Would have the block again	97%
100% procedures should not involve any Drug Errors	100%	>95% should be given adequate analgesia to take home	94%
<5% GA conversions / failures (Block Success)	4.8%	>95% Patients should be happy with information given	>98%
100% No long term complications	100%	>95% would recommend	98%
Bypass recovery / Rapid recovery (<30mins)	48%	<5% patients having an 'Awful' Experience	0.7%
95% Patients Pain scores <5	88.5%	< 5% suffer from PONV	3.8%

Discussion: It was disappointing to only have a follow-up rate of 15%, which highlighted an ineffective system that has now been redesigned to give much higher rates of follow-up. For the group where follow-up was possible, results show that we are achieving the majority of high standards set. We consider our practice to be excellent with regards to safety of side or site and drug errors (100% in all 2000+ block registered). Although we had a good block success and PONV rate we had an increased number of patients with post operative pain scores of >5. Failed blocks and pain at non-surgical sites accounted for the majority of these scores. However, the IRORA data showed 38% had a score >5, so this could be a difficult standard to achieve. We are more vigilant about prescribing pain medication appropriate to surgical type following 6% reporting inadequate analgesia. One patient during this time period developed a complication of persisting numbness in the lateral wall of axilla following an Axillary block. This resolved fully within 6 months and the patient reported high satisfaction with her block and its outcome.

Conclusions: Quality Measures for UGRA at NHCT set high standards for performance and safety. By carrying out patient follow-up we have demonstrated that we are achieving the majority of these standards, and have allowed us to develop strategies and guidelines to improve our practice where we have failed. Assessing block outcomes and patient experience are vital tools to providing high standards and we suggest Quality Measures like those used at NHCT could be adopted nationally.

References:

1. Chazapis M, Kaur N, Kamming D. Improving the Peri-operative care of Patients by instituting a 'Block Room' for Regional Anaesthesia. BMJ Qual Improv Report. 2014;3:1.
2. B D Sites, M J Barrington, M Davis. Using an International Clinical Registry of Regional Anesthesia to Identify Targets for Quality Improvement. Reg Anesth Pain Med. 2014;39: 487–495.

Abstract Title: A survey of Anaesthesia practice and patient satisfaction following hand/forearm/elbow surgeries

Dr. B Rajdev[1]
Dr S Lakhotia[2]
Dr M Singh[3]
Dr B Das[3]

Introduction- Quality improvement drive and revalidation agenda support the use of patient satisfaction to measure performance for departments and/or individual doctors. Anaesthesia for ambulatory surgery requires rapid recovery from anaesthesia, minimal postoperative nausea and vomiting and excellent postoperative analgesia. Single shot regional anaesthesia (RA) meets all these requirements

Method- Data collection was prospective, and it included 30 patients operated for Upper limb surgery as day cases. Data collection was done with the help of a proforma with questions in 3 domains - Intraop, Recovery and Postop

Results: Out of the 30 patients, 16 (53%) had brachial plexus block+ peripheral nerve block, 4 (13%) had only brachial plexus block, 4 (13%) had GA alone and the rest had GA with a block. Supraclavicular approach was most common method of brachial plexus block. All except 2 blocks were done awake. 8 of the 10 patients who had GA wanted GA. 99% patients were pain free in recovery. 27 of our patients responded to telephonic survey. 86% of the patients who had block said it was not painful and 88% said surgery was painless.75% had no discomfort due to heavy arm. Nearly half of them had no pain on day 1 postop. Block lasted from 2 - 48hours.

Discussion:

60% patients operated under regional. Most blocks were done awake. In all blocks, Ultrasound was used except 2 peripheral blocks. None needed GA conversion. 100% of the responders were satisfied with information. 96% were satisfied with care.74% were very satisfied with pain relief and 22% were satisfied. 88% would prefer awake surgery in future

Conclusions: Majority of Upper limb surgeries were done under regional blocks. These blocks were done mostly awake and under ultrasound guidance. Success rate was 100%.Most of our patients were satisfied with the pain relief and would prefer awake surgery in future.

References:
1. Ironfield, C., Barrington, M., Kluger, R., & Sites, B. (2014). Are patients satisfied after peripheral nerve blockade? Results from an international registry of regional anesthesia. Regional Anesthesia and Pain Medicine, 39(1), 48-55.
2. Hirst C, Russon K et al- asking patients about their awake shoulder surgery survey. RAUK ASM 2012

Abstract Title: Audit of Analgesia for Emergency Laparotomy

Olaia Garcia-Verdugo[1], Paul Townsley[1]
[1] *Nottingham University Hospitals NHS Trust*

	Epidural	Rectus Catheters + PCA	Spinal Opiate + PCA	Regional Block + PCA	PCA Only	Oral analgesia
n (%)	25 (50%)	16 (32%)	2 (4%)	2 (4%)	3 (6%)	2 (4%)

Introduction: Analgesia for emergency laparotomy can be challenging due to the urgency of the surgery and often poor physiological status of the patients. Our audit aimed to compare the analgesia strategies and their effectiveness in this surgical cohort against the RCoA standards:
1.'Where appropriate patients should have an epidural sited for peri-operative analgesia'[1]
2.'Less than 5% of patient days should have moderate or severe pain in a 24-hour period'[2].

Methods: Between 18/04/16 to 09/07/16 we audited every adult patient who underwent emergency laparotomy at Nottingham University Hospitals, QMC Campus (n = 50 patients). We recorded patient demographics, co-morbidities, pre-operative septic status, coagulation status and the analgesia strategy used. Primary outcomes measured were pain scores at 1, 6, 12, 24, 48 hours after surgery, morphine consumption in recovery, 24 and 48 hours after surgery. Secondary outcomes measured were use of vasopressors, critical care admission, delirium & ileus. We excluded patients with a history of chronic pain, planned post-operative ventilation, polytrauma patients and repeated surgeries.

Results:

Patient Demographics: Median age 62 (18–90). 13/50 (26%) patients were septic on presentation. 11/50 (22%) patient had abnormal coagulation on presentation

Analgesia Strategy Used

Epidural analgesia was only discussed with 73% of patients who had no contraindications. 7/11 (64%) patients with abnormal coagulation received epidural analgesia. 6/13 patients (46%) with sepsis received epidural analgesia.

Pain Scores: Incidence of mild, moderate and severe pain in the first 24h was 66%, 30% and 6% respectively. Patient with epidural, rectus sheath catheters or spinal opioid analgesia had only mild pain in the first 24 hours post-op. Patient who received only opioid analgesia experienced either moderate or severe pain.

Morphine consumption: Table showing cumulative mean morphine consumption (mg) by strategy

	Epidural	Rectus Sheath + PCA	Spinal Opiate + PCA	Regional Block + PCA	PCA Only	Oral analgesia
Recovery	0.1	6.2	0	0	18.5	13
24h	0.8	48.7	48	32	120.5	26
48h	0.8	80.3	101.5	56	150	43

Morphine consumption was lower when rectus catheters were placed by surgeons (n=8) compared to anaesthetists (n=8 at all time points (1.6mg, 39.6mg, 66.5mg vs 8.6mg, 59.4mg, 86.3mg respectively)

Secondary outcome measures Overall admission to HDU was 70%. Vasopressor requirement was similar in septi patients with epidural and septic patients without epidural (29% vs 33%), Vasopressor requirements were higher in non septic patients who received epidural vs non-septic patients with no epidural (42% vs 16%).

Discussion: We failed both audit standards. 1. 27% of patients with no contraindication to epidural analgesia were nc offered it. 2. 33% of patients experienced moderate/severe post-op pain. Lowest pain scores and morphine usage were th epidural group followed by those that combined a regional technique with PCA. We found differences in the equipmer used by surgeons and anaesthetists for rectus sheath analgesia, which may explain the different morphine consumption.

Conclusions: 1. We have implemented a local guideline for analgesia in emergency laparotomy. The main features ar i) to encourage appropriate use of epidural analgesia ii) to encourage alternative regional techniques where epidura analgesia is not used. 2. We are changing our anaesthetic rectus sheath catheters to match the multi-perforated catheter used by surgical colleagues.

References:

[1] Royal College of Anaesthetists | Raising the Standard: a compendium of audit recipes | 3rd Edition 2012, *page 145*

[2] Royal College of Anaesthetists | Raising the Standard: a compendium of audit recipes | 3rd Edition 2012, *page 145*

Abstract Title: A Safe Site for Rectus Sheath Block based on Analysis of Abdominal Wall Arterial Anatomy in 100 Patients

Authors and Affiliations: James Bowness[1], Jonny Seeley[1], Angela McKinnie[2], Ian Zealley[2], Calum Grant[1]

1 Anaesthetic Department, Ninewells Hospital, Dundee, Scotland 2 Radiology Department, Ninewells Hospital, Dundee, Scotland

Introduction

Continuous rectus sheath block (RSB) is often used when epidural analgesia is contra-indicated. Complications include damage to the vascular anatomy of the abdominal wall, potentially resulting in rectus sheath haematoma or epigastric artery pseudoaneurysm. These complications have been described after percutaneous instrumentation of the anterior abdominal wall[1,2,3]. The investigators sought to determine which readily-identifiable location(s), at which RSB may be performed, the anterior abdominal wall vasculature is encountered with the lowest frequency.

Methods Caldicott Guardian approval was obtained to undertake a retrospective review of arterial phase contrast-enhanced abdominal CT scans performed for patients with suspected intra-abdominal pathology. Each scan was assessed by a radiologist to determine the presence and, if so, location of the epigastric artery at multiple axial and coronal sections. Images were assessed to determine artery size, and whether it lay within or behind the medial, middle or lateral third of the rectus abdominis muscle.

Results 100 scans were assessed: 62 males, 38 females (mean age 69.2 years, range 25 - 91). The dominant artery in the anterior abdominal wall (minimum diameter ≥1 mm) was identified at the midpoint between the xiphisternum and umbilicus in 5% of cases bilaterally (table 1). Such an artery was identified in 67 - 70% at the level of the umbilicus and 88 - 91% at the level of the anterior superior iliac spine (ASIS). The artery most commonly lay within the rectus abdominis muscle (table 2). The vessels were found to be of the smallest diameter at the midpoint between the xiphisternum and umbilicus (maximum 1.4 mm).

	Left (n = 100)			**Right (n = 100)**		
	Lateral	**Middle**	**Medial**	**Medial**	**Middle**	**Lateral**
Midpoint (xiphisternum - umbilicus)	0%	5%	0%	0%	5%	0%
Umbilicus	11%	54%	5%	3%	47%	16%
ASIS	62%	25%	1%	2%	29%	60%

Table 1 Frequency of main artery (≥1 mm) identified in the anterior abdominal wall

	Left (n = 100)				Right (n = 100)			
	Intra-rectus	**Posterior to rectus**	**Not seen**	**Other**	**Intra-rectus**	**Posterior to rectus**	**Not seen**	**Other**
Midpoint (xiphisternum - umbilicus)	4%	1%	92%	3%	3%	3%	93%	1%
Umbilicus	67%	11%	21%	1%	62%	6%	25%	7%
ASIS	68%	28%	0%	4%	64%	29%	0%	7%

Table 2 Position of main artery (≥1 mm diameter) identified in the anterior abdominal wall

Discussion Epigastric arterial vessels were found to be absent in the majority of subjects at the midpoint between the xiphisternum and umbilicus. When present it is of the smallest caliber. This is relevant in regard to potential damage to the vasculature of the anterior abdominal wall.

Conclusions This study describes anatomical variation of the epigastric arteries and concludes that needle insertion midway between the xiphisternum and umbilicus, approaching from lateral to medial, is the safest approach in regard to RSB. This knowledge may also be important to other procedures (e.g. insertion of port sites during laparoscopy).

References

1. Yuen PM, Ng PS. Retroperitoneal haematoma after rectus sheath block. *J Am Assoc Gynecol Laparosc*. 2004 Nov; 11(4): 448.

2. Procacciante F, Diamantini G, Paolelli D, Picozzi P. Rectus sheath haematoma as an early complication of laparoscopic hemicolectomy: a case report and review of the literature. *Chir Ital*. 2009 Jul-Aug; 61(4): 481-3.

3. Splinter KL, Cook CL. Inferior epigastric artery pseudoaneurysm following tracer injury. *J Minim Invasive Gynaecol*.

2012 May-Jun; 19(3): 393-5.

Abstract Title: Block Room or Blocked Rooms? Beginnings of an ambulatory upper limb surgery service in Belfast.

Authors: Dr Nick Black[1] Dr Lloyd Turbitt[2] Dr David Johnston[2]

1 - Anaesthetic Fellow, Level 3 Theatres, Royal Victoria Hospital, Belfast 2 - Consultant Anaesthetist, Level 3 Theatres, Royal Victoria Hospital and Musgrave Park Hospital, Belfast

Introduction

While block rooms have been commonplace in North America for some time, the first ambulatory anaesthesia unit for elective upper limb surgery has recently been introduced in Northern Ireland. The study was undertaken to compare the theatre timings following the introduction of this block room with usual practice, a general anaesthetic in theatre.

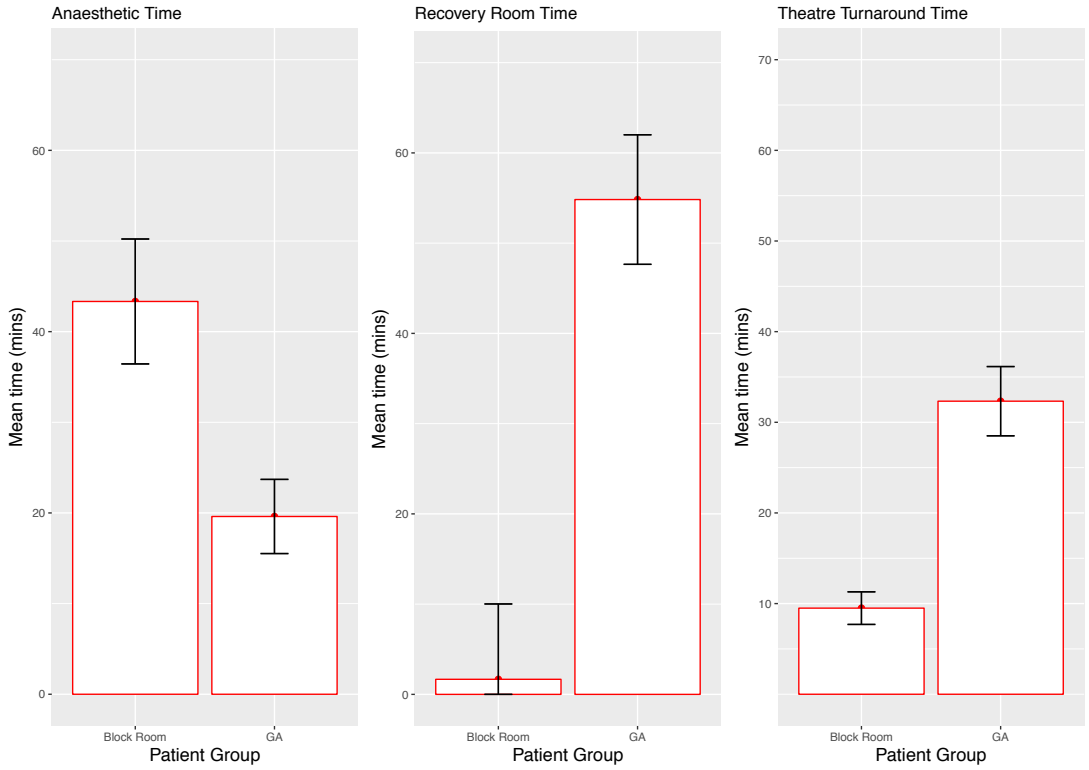
Methods

This retrospective cohort study was undertaken for upper limb surgery in Musgrave Park Hospital, Belfast. There were 12 patients in the block room group (BR), who had a brachial plexus block only. The previous 18 patients having upper limb surgery under GA (GA) were used as controls. All theatre timings were taken from the Belfast Orthopaedic Information System (BOIS). Statistics were performed using R, and Mann-Whitney-U tests were used to test significance.

Results

The mean anaesthetic time was significantly longer in the BR group, 43.33mins, compared with 19.61mins in the control group ($p<0.001$). There was no significant difference in operative time, at 43.06mins (GA) and 47.58mins (BR) ($p=0.66$). Average recovery room time was significantly less in the BR group, 1.67mins, versus 54.83mins for GA ($p<0.001$). Theatre turnaround time was 32.33mins in the GA group and 9.5mins in the block room group ($p=0.002$). Key results are shown in Figure 1.

Figure 1. A comparison of key results. Standard error bars are displayed for the mean times.



Discussion

Many benefits of block rooms have been described including: faster theatre turnover, increased case throughput, high- quality education and reduction in theatre delays (2,3). This study describes the initial results of Northern Ireland's first block room. Significant time benefits have been demonstrated. Notably, patients spent significantly less time in theatre recovery ($p<0.001$) and theatre turnaround was reduced by 72% in the block room group. There are several limitations to this study: small number of patients, comparing

awake surgery under block to GA and no demonstrable increase in theatre productivity.

Conclusions

This small retrospective cohort study provides an initial assessment of a block room trial and has shown significant improvements in both time spent in theatre recovery and theatre turnaround time.

References

1. R: a language and environment for statistical computing. http://www.R-project.org (accessed 01/03/2017)

2. Head SJ, Seib R, Osborn JA and Schwarz SKW. A "swing room" model based on regional anaesthesia reduced turnover time and increased case throughput. *Can J Anesth* 2011;58:725-732

3. Chazapis M, Kaur N and Kamming D. Improving the peri-operative care of patients by instituting a "block room" for regional anaesthesia. *BMJ Quality Improvement Reports* 2014; u204061.w1769 doi: 10.1136/ bmjquality.u204061.w1769

None of the authors have any conflicts of interest. No financial grants were involved in this work. Local audit policy was followed.