RA-UK 2019 ASM

Thursday 16th – Friday 17th May

Belfast, The ICC

Abstract Booklet

Oral Presentation

Electronic Regional Anaesthesia Database: analysis on the quality of documentation of peripheral nerve blocks and the potential for a Welsh Regional Anaesthesia Network

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Abstract

INTRODUCTION

We examined the effect of the introduction of an Electronic Regional Anaesthesia Database (ERAD) on the quality of documentation for peripheral nerve blocks (PNBs) at our hospital.

METHODS

We retrospectively analysed the anaesthetic charts of 100 patients who had received a PNB, 50 before and 50 after the database's inauguration. We compared the details recorded against a checklist of key desirable features[1,2,3].

RESULTS

Our analysis shows that documentation of all of the key elements of a peripheral nerve block in our checklist improved following the introduction of an ERAD.

Table 1

	Before database (%)	With database (%)	Difference (%)
Indication for procedure/type of surgery	100	100	0
Consent and risks	65	100	35
End time	0	100	100
Start time	10	100	90
Patient identifiers present	100	100	0
Responsible consultant anaesthetist identified	90	100	10
Block operator identified	100	100	0
Assistance identified	0	100	100
Type and quantity of sedation	92	100	8
Name of block	95	100	5
Laterality of block	40	100	60
Aseptic technique	55	100	45
Needle make, gauge, length	70	100	30
Method of localisation	100	100	0
Needle entry	40	85	45
Note on aspiration	70	100	30
Note on monitoring for pain on injection/paraesthesia	75	100	25
Local anaesthetic concentration	90	100	10
Local anaesthetic volume	100	100	0
Procedure documented	100	100	0
Documentation legible	95	100	5
Complications noted	50	100	50

DISCUSSION

The ERAD was introduced in February 2018. Clinicians log in to a Microsoft Access Database from a computer in theatre and enter the details of the PNB. Once complete, a sticky label containing details of the block is printed and attached to the patient's anaesthetic chart.

The results demonstrate a large improvement in the completeness of the anaesthetic procedure record following the introduction of an ERAD. This is of little surprise as the database prompts the clinician for each key element. The record will not save and print if it is not fully complete.

It was not possible to locate the anaesthetic chart of one patient in the "before" group. The electronic database is saved on the local intranet and maintained to local health board governance standards.

We highlight some of the other advantages of an ERAD (figure 1).

We are exploring the potential of the database to be shared across local health boards in South Wales.

- Personal logbook
- Printed sticker of procedure for anaesthetic chart - no duplication
- Pre-filled block characteristics saves time
- Facilitate research
- Identify lists with good training opportunities

- Runs on existing computer software
- Cheap hardware (printer £100)
- Quick and easy set up
- Facilitates clinical governance by improving record keeping

- Maintains patient confidentiality
- Potential for feedback via automated telephone questionnaire

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2. Moran P, Fennessy P, Johnson M. Establishing a new national standard for the documentation of regional anaesthesia in Ireland. BMJ Open Quality. 2017;6(2):e000210.

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Poster No: 1

COMPARING RESISTANCE TO WATER FLOW BETWEEN TWO SPINAL NEEDLES

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NHS Greater Glasgow and Clyde, Glasgow, United Kingdom

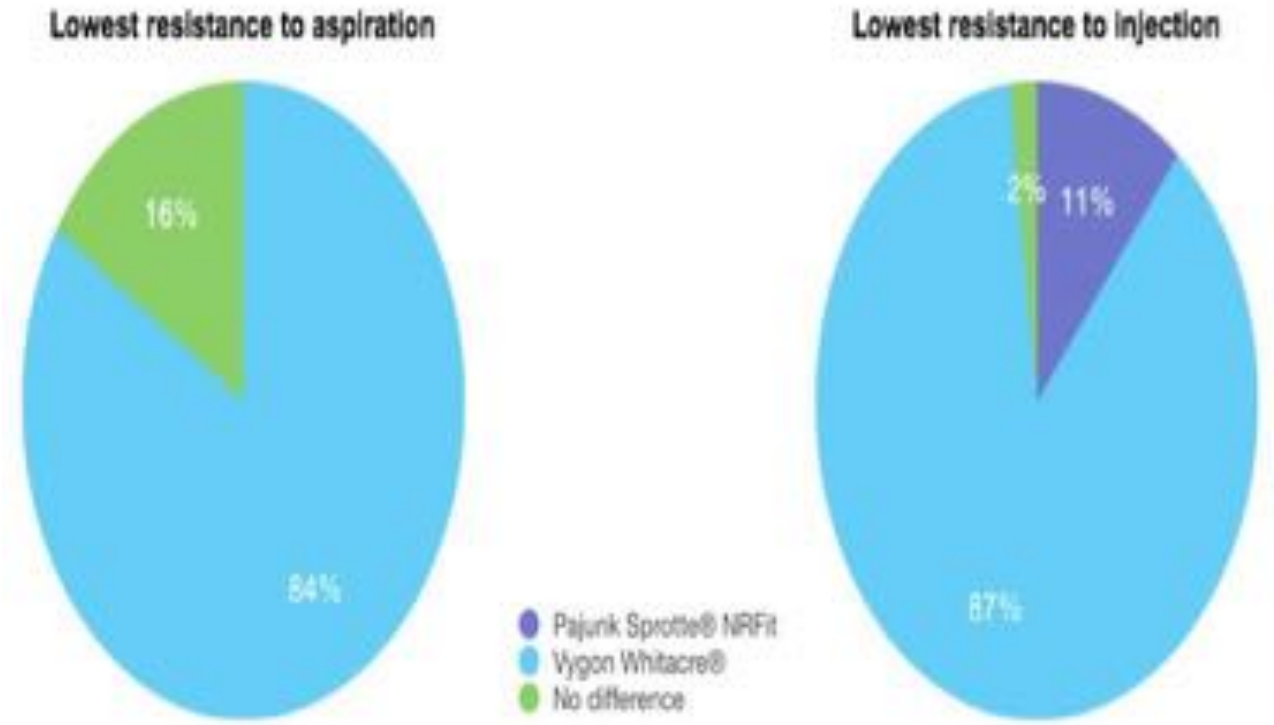
Abstract

Introduction: This study compares resistance to water flow between Vygon Whitacre® 25G x 90mm and Pajunk Sprotte® NRFit 25G x 90mm spinal needles.

Methods: Fifty-five ward nurses who have never used these needles before were recruited to use both needles in a simulated practice. Each needle was primed with water then attached to 5 ml syringe containing 2ml water. Using the same hand, each nurse was asked to aspirate 1 ml from a glass filled with 10ml water and then injects 3ml under the water in the same glass. Unlimited attempts were permitted until they were able to determine if there is a difference in resistance between the two needles or not. The following data were recorded: 1) The needle with the lowest resistance to aspiration and injection 2) The number of aspiration and injection attempts. Participants were not aware which needle is the newly introduced spinal needle.

Results The majority of the participants felt that there is less resistance to aspirate and inject when using the Vygon Whitacre® compared with the Pajunk Sprotte® NRFit needle. The majority of participants were able to determine the difference in resistance in one attempt (72% of participants for aspiration and 74% for injection). The maximum number of attempts was three.

Figure1: Resistance to aspiration and injection



Discussion: Practitioners who have recently switched to the use of Pajunk Sprotte® NRFit 25Gx 90mm from Vygon Whitacre® 25G x 90mm spinal needle need to be aware of the higher resistance to flow on aspiration and injection.

Poster No: 2

Learning Points From the Creation of a Regional Anaesthetic Infusion Chart

James Fullick, Anthony Byford-Brooks, David Burckett-St-Laurent

Royal Gwent Hospital, Newport, United Kingdom

Abstract

Introduction:
Regional anaesthesia is a flourishing sub-speciality which has extensive research investigating potential advantages for a variety of operations. There remains a requirement to ensure clear and concise records of procedures undertaken along with support for those administering care to these patients. As regional blocks and local anaesthetic infusions remain a relatively novel form of analgesia and anaesthesia many medical staff feel less confident in their use. This project explores the challenges surrounding designing a new proforma allowing clear and simple documentation of regional anaesthetic infusions along with simplifying record keeping, aftercare and troubleshooting.

Methods:
Focusing initially on what key information the chart needed to portray our team set out to create a colour-coded, clearly formatted document which followed similar design to other anaesthetic charts in the department. Multidisciplinary discussions ensured widespread satisfaction and ease of use.

Discussion:
The long-term aim of this project was to supply a chart which would not only provide a clear, concise record of regional blocks and patient progress but also be suitable for use by non-regional specialists and juniors. Ultimately this document will allow patients who are receiving regional anaesthesia infusions to be cared for at trusts who would otherwise have been unable to manage them. The outsourcing of these patients to less acute trusts will be invaluable in ensuring acute beds are available for emergency or high dependency patients. By ensuring clear records, concise guidelines and jargon-free management these charts potentially save space, time and money while maintaining patient safety and satisfaction.

Poster No: 3

A retrospective audit of anaesthetic technique for anterior cruciate ligament repair and it's affect on the post operative period

Peter Thomas, Ravi Nair

Mid Essex Hospital NHS Trust, Broomfield, United Kingdom

Abstract

Introduction

We present a 60 patient retrospective audit of anterior cruciate ligament repair, comparing anaesthetic technique with post-operative experience.

Methods

Retrospective analysis of notes was performed. Data collected included anaesthetic technique, incidence of post-operative nausea, pain scores, analgesics required, time spent in theatre recovery and unplanned admissions. Ethics approval not required.

Results

Three groups of anaesthetic technique were identified. A) General anaesthetic (G.A) plus adductor canal block (n=28), B) G.A plus local anaesthetic (n=15) (L.A) infiltration by surgeon at the start of procedure, and C) G.A + L.A infiltration by surgeon at end of procedure (n=17). Group A mainly (26/28) received 20mls ropivicaine 0.375, (2/28) receiving 30mls 0.5% bubivicaine. Group B received Marcaine with adrenaline whilst Group C received Xylocaine with adrenaline. Post-operative analgesics were converted into oramorph equivalents. See table below for additional results.

	Intra-Op Analgesia	Recovery Analgesia	Day unit analgesia	Patients requiring antiemetics in recovery	Patients on day unit requiring antiemetics	Median recovery pain score	Median day unit pain score	Time in receovery	Unplanned admissions
Group A (n=28)	108mcg fentanyl	77mcg fentanyl	17mg oramorph	n=1	n=1	1	1	72 mins	n=0
Group B (n=15)	123mcg fentanyl + 5mg morphine	36mcg fentanyl + 10mg oramorph	16mg oramorph	n=0	n=0	1	1	67 mins	n=0
Group C (n=17)	105mcg fentanyl + 7mg morphine	32mcg fentanyl	5.4mg oramorph	n=0	n=0	1	1	56 mins	n=0

Discussion

Despite the higher intra-operative opioid requirements in the non-adductor canal block, there was a lower post-operative analgesic requirement in these patients. Group B had slightly higher intra-operative and post-operative analgesic requirements than the other two groups and group A had the longest time spent in recovery, although the differences were small. From the results of this study, one technique cannot be recommended above another.

Poster No: 4

Regional anaesthesia for awake sub-pectoral implantable cardiac device insertion: a case report

Thomas Wojcikiewicz, Amit Pawa, Madhvi Vaghela

Guy's and St Thomas' NHS Foundation Trust, London, United Kingdom

Abstract

Introduction

A 70 year old gentleman required the sub-pectoral re-insertion his cardiac-resynchronisation therapy defibrillator (CRT-D). His medical history included severe heart failure and severe COPD. He weighed 50 kg with a BMI 16kgm^2.

The lead in his device was defective and the defibrillator had displaced from its subcutaneous position.

We describe a unique general anaesthesia-free, regional technique for the procedure.

Case

Ultrasound-guided regional anaesthesia was achieved with:

·Thoracic paravertebral with 5mL 1% lignocaine plus 5mL 0.25% Levobupivacaine using an 18G SonoTap needle.

·Pecs 1 block with 5mL 1% lignocaine plus 5mL 0.25% Levobupivacaine with an 80mm B-Braun needle.

·Serratus anterior block with 7.5ml 1% lignocaine with adrenaline (1:10000) plus 10mL 0.25% Levobupivacaine with an 80mm B-Braun needle.

Sedation was achieved 1mg Midazolam and Remifentanil TCI, effect-site concentration 0.5 to 0.7ngmL^{-1}. No intra-operative analgesia was required. The incision site was infraclavicular, in the mid-clavicular line.

Discussion

Implantable defibrillators and resynchronisation therapy is recommended in patients with heart failure and a prolonged QRS complex [1].

Insertion is typically in an infraclavicular subcutaneous pocket. In lean patients this can lead to skin necrosis or device slippage [2]. Different regional anaesthetic techniques for pacemaker

insertion have been described including supraclavicular nerve, interscalene brachial plexus and cervical plexus blockade [3][4].

Sub-pectoral implantation suits lean patients and has been performed under general and local anaesthesia infiltration alone [2][5]. At our institution, they are performed under general anaesthesia. This is the first case of device insertion under a combined paravertebral and myofascial plane blocks technique.

References

1. NICE (2014). Implantable cardioverter defibrillators and cardiac resynchronisation therapy for arrhythmias and heart failure . Available from: https://www.nice.org.uk/guidance/ta314/documents/arrythmias-icds-heart-failure-cardiac-resynchronisation-fad-document2. [Accessed 15/2/19]

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3. Martin R, Dupuis J, Tetrault J. Regional anaesthesia for pacemaker insertion. Reg Anesth. 1989. 14:81–4

4. Raza M, Vasireddy A, Candido K, Winnie A, Masters R. A complete regional anesthesia technique for cardiac pacemaker insertion. J Cardiothorac Vasc Anesth. 1991. 5:56–58

5. Foster AH. Technique for implantation of cardioverter defibrillators in the subpectoral position. Ann Thorac Surg. 1995. 59:764–767

Poster No: 5

A novel training level targeted, operation focused, deanery approved, regional anaesthesia teaching course

Thomas Miller[1], Karim Mukhtar[2], Tushar Dixit[2]

[1]HENW, Mersey, United Kingdom. [2]St Helens and Knowsley Teaching Hospitals NHS Trust, Whiston, United Kingdom

Abstract

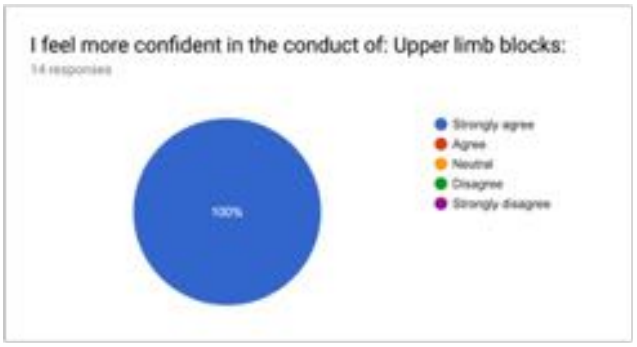
Introduction

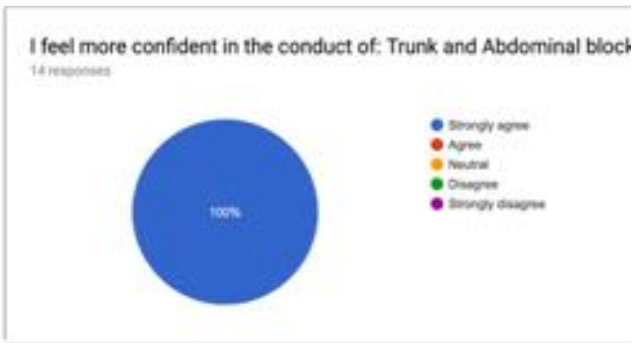
A plethora of regional anaesthesia courses exist regionally, nationally and internationally. They tend to focus toward beginners new to the speciality or self-directed enthusiasts. We sought to launch a new course specifically for intermediate trainees who may not only have an interest in the topic but also a requirement to fulfil RCoA training objectives.

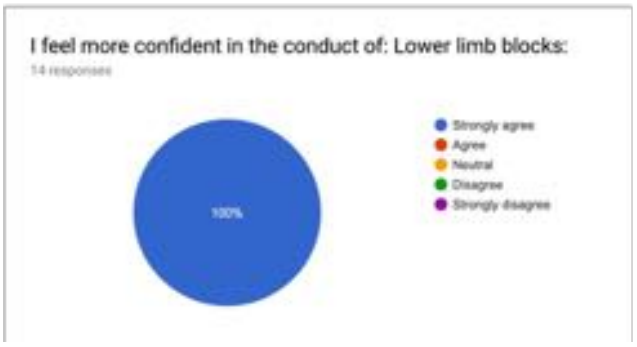
Methods

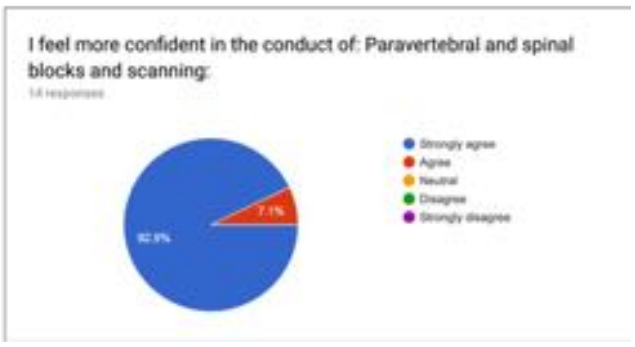
We took account of the RCoA curriculum and considered which operations an intermediate trainee may face that would benefit from regional anaesthesia rather than simply dictating specific blocks to learn. Pre-course questions were sent to engage candidates in considering which blocks would be appropriate for which operations prior to the course. Through four stations covering upper limb, lower limb, trunk and abdomen and neuraxial and paravertebral these topics were explored in a practical fashion, with maximal candidate scanning time.

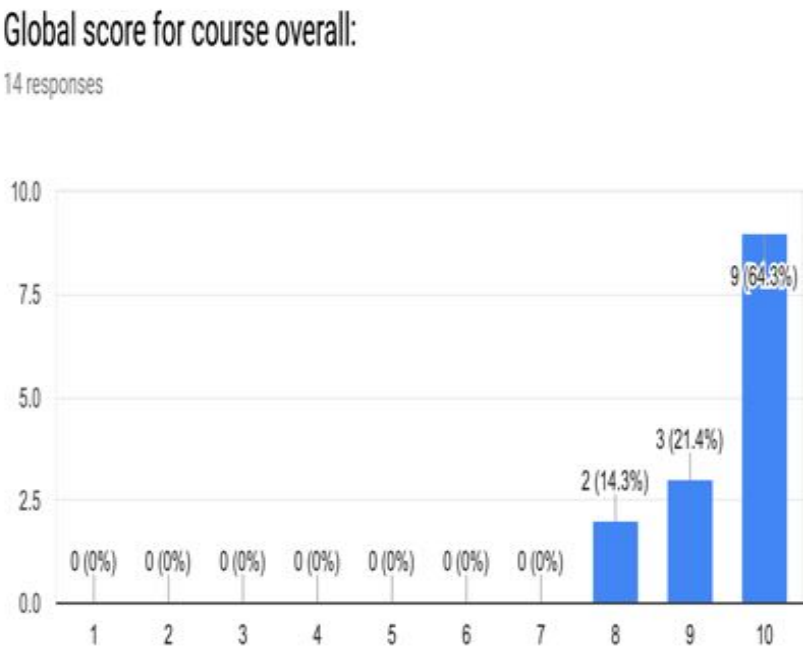
Results


I feel more confident in the conduct of: Upper limb blocks:
14 responses
100%
Strongly agree
Agree
Neutral
Disagree
Strongly disagree


I feel more confident in the conduct of: Trunk and Abdominal block
14 responses
100%
Strongly agree
Agree
Neutral
Disagree
Strongly disagree


I feel more confident in the conduct of: Lower limb blocks:
14 responses
100%
Strongly agree
Agree
Neutral
Disagree
Strongly disagree


I feel more confident in the conduct of: Paravertebral and spinal blocks and scanning:
14 responses
7.1%
92.9%
Strongly agree
Agree
Neutral
Disagree
Strongly disagree


Global score for course overall:
14 responses
10.0
7.5
5.0
2.5
0.0
0 (0%)
0 (0%)
0 (0%)
0 (0%)
0 (0%)
0 (0%)
0 (0%)
2 (14.3%)
3 (21.4%)
9 (64.3%)
1
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Discussion

The course was extremely well received by candidates, all of whom left much more confident in performing regional anaesthesia relevant to their level of training and experience. We believe that adopting an operation or incisional based approach to teaching regional anaesthesia offers greater applicable knowledge than didactically teaching specific blocks. Within our region there are no courses specifically designed toward trainees embarking on increasing amounts of solo work, in and out of hours, who wish not only to be able to offer patients appropriate regional anaesthesia options but also to satisfy the Royal College training requirements. This course has satisfied this requirement, the cost to the deanery; £10 per candidate.

Supported by Mindray.

Poster No: 6

A retrospective analyses of anaesthetic technique for total knee replacement and it's affect on the post-operative period

Peter Thomas, Ravi Nair

Mid Essex Hospital NHS Trust, Broomfield, United Kingdom

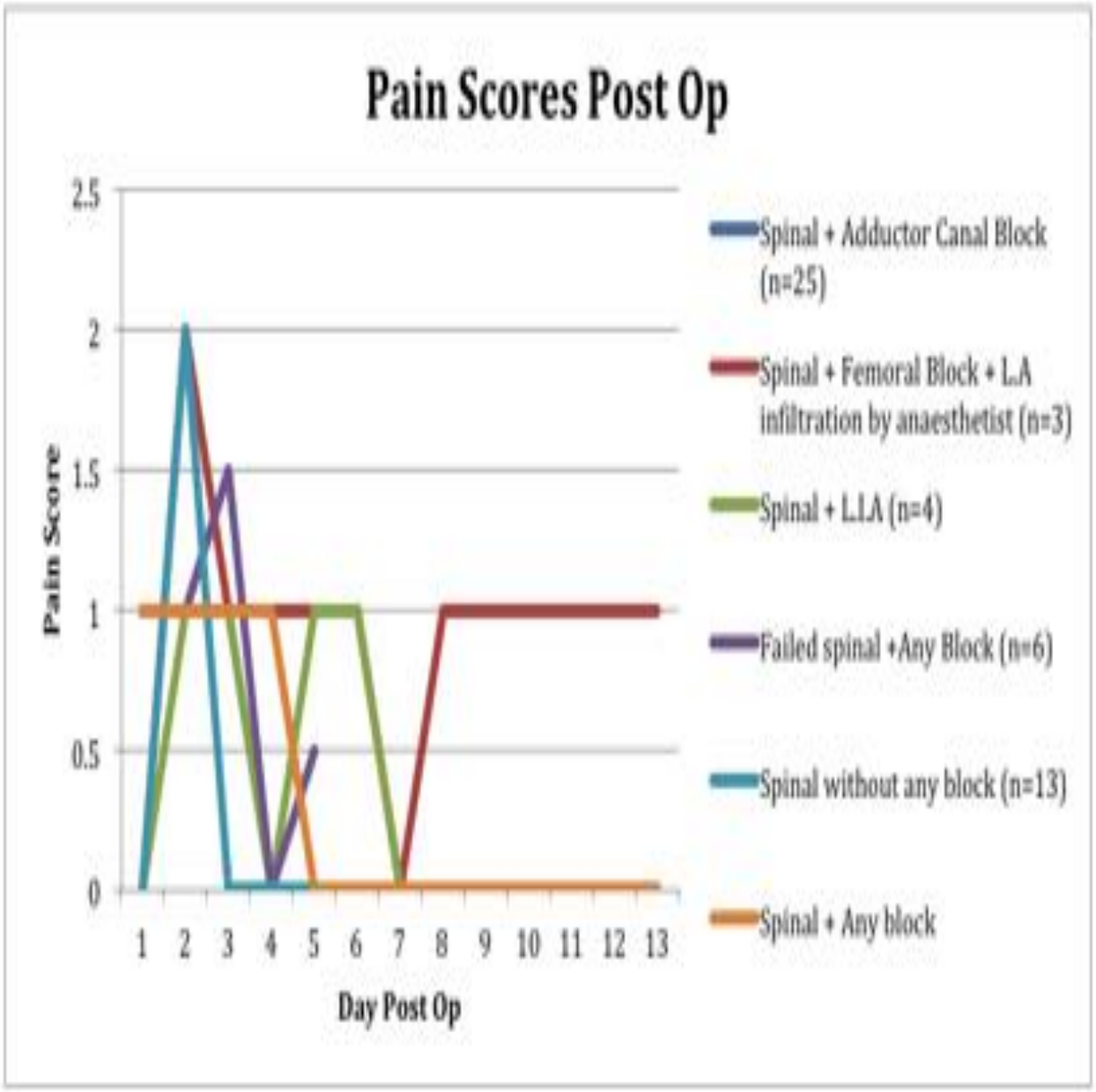
Abstract

Introduction
We present an audit of total knee replacement, comparing anaesthetic technique with post-operative outcomes.

Methods
60 notes were retrospectively analysed. Data collected included anaesthetic technique, post-operative nausea incidence, pain scores, analgesic required, time spent in theatre recovery, time to mobilisation and hospital length of stay.

Results
Five groups of anaesthetic technique were identified; Spinal plus adductor canal block (n=25), Spinal plus femoral block plus knee capsule infiltration (n=3), Spinal plus knee capsule infiltration (n=4), Failed spinal plus any block (n=6), Spinal without block (n=32). A sixth sub-group (n=32), combining spinal plus any block was analysed. See table and graph below, displaying results.

	Intra-op analgesia (morphine equivalents)	Oramorph in recovery	Nausea in recovery (n=)	Nausea on ward	Time in recovery	Max pain in recovery	Days until discharge	Mean time to 1st mobilisation	Mean time of 1st walk
Spinal + Adductor Canal	0	0	1/25	7/25	50 mins	0/3	4	10 a.m	Day 1 6 p.m
Spinal + Femoral Block + Knee Infiltration	0	0	0/3	0/4	33	0/3	6	10.30 a.m	Day 1 6 p.m
Spinal + L.I.A	0	0	0/4	2/4	90	0/3	5	10.30 a.m	Day 1 Midnight
Failed spinal + any block	8.6mg	12mg	1/6	1/6	98	2/3	4	10.30 a.m	Day 2 3a.m
Spinal, no block	0	0	0/13	0/13	49	0/3	4	12 a.m	Day 2 7a.m
Spinal + any block	0	0	0/32	0/32	48	0/3	4	10.30 a.m	Day 1 7 p.m



Discussion

There was minimal nausea in recovery or wards. Failed spinal resulted in prolonged time spent in recovery and delayed mobilisation. Those receiving any regional block plus spinal left recovery quickly and walked on day 1 compared to those receiving spinal without additional block not walking until day 2. Comparing regional techniques, adductor canal block resulted in fastest mobilisation, walking and days to discharge. Pain scores and analgesic requirements were similar. Results demonstrate the importance of additional regional anaesthesia vs spinal alone.

Poster No: 7

Development of an Ultrasound Phantom for Teaching the Erector Spinae Plane Block

Jonathan Fortune[1,2], Caveh Madjdpour[1]

[1]Northumbria Healthcare NHS Foundation Trust, Cramlington, United Kingdom. [2]The Northern School Of Anaesthesia & Intensive Care Medicine, Newcastle upon Tyne, United Kingdom

Abstract

Introduction

The Erector Spinae Plane (ESP) block produces anaesthesia of the thoracic nerve roots. Its low risk profile, and relative ease in block skill acquisition make it an attractive option in the regional anaesthetic management of thoracic pain, especially in rib fracture. However, in our institution, full 24/7 service provision is lacking due to staff unfamiliarity with the sonoanatomy, and inexperience in block performance. To enable more widespread skills in ESP blocks, we created an education programme consisting of an e-learning module, and a homemade gel phantom to practice needle placement.

Methods

For phantom construction, a model thoracic spine and ribs were first sealed in silicone. Muscle layers were created from a gel wax base with variable proportions of paraffin wax and psyllium husk, and then wrapped in cling film and placed over the spine. An interactive e-learning module was created covering the pathophysiology of rib fractures and the anatomy, and sonoanatomy, of the ESP block.

Results

A cost effective, realistic ultrasound phantom was created to enable identification of muscle layers of the back, transition from rib to transverse process, and to practice real-time needle placement for the ESP block (figure 1). This practical learning is consolidated with an e-learning module (figure 2).

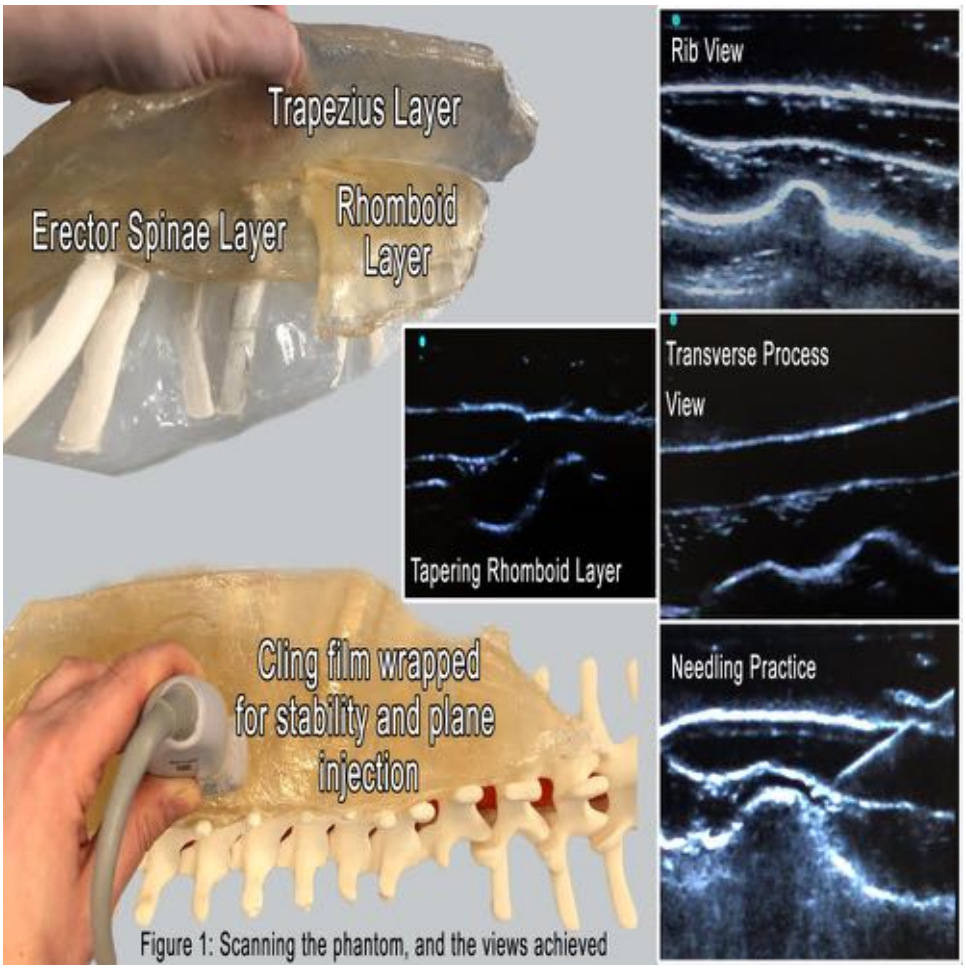


Figure 1: Scanning the phantom, and the views achieved

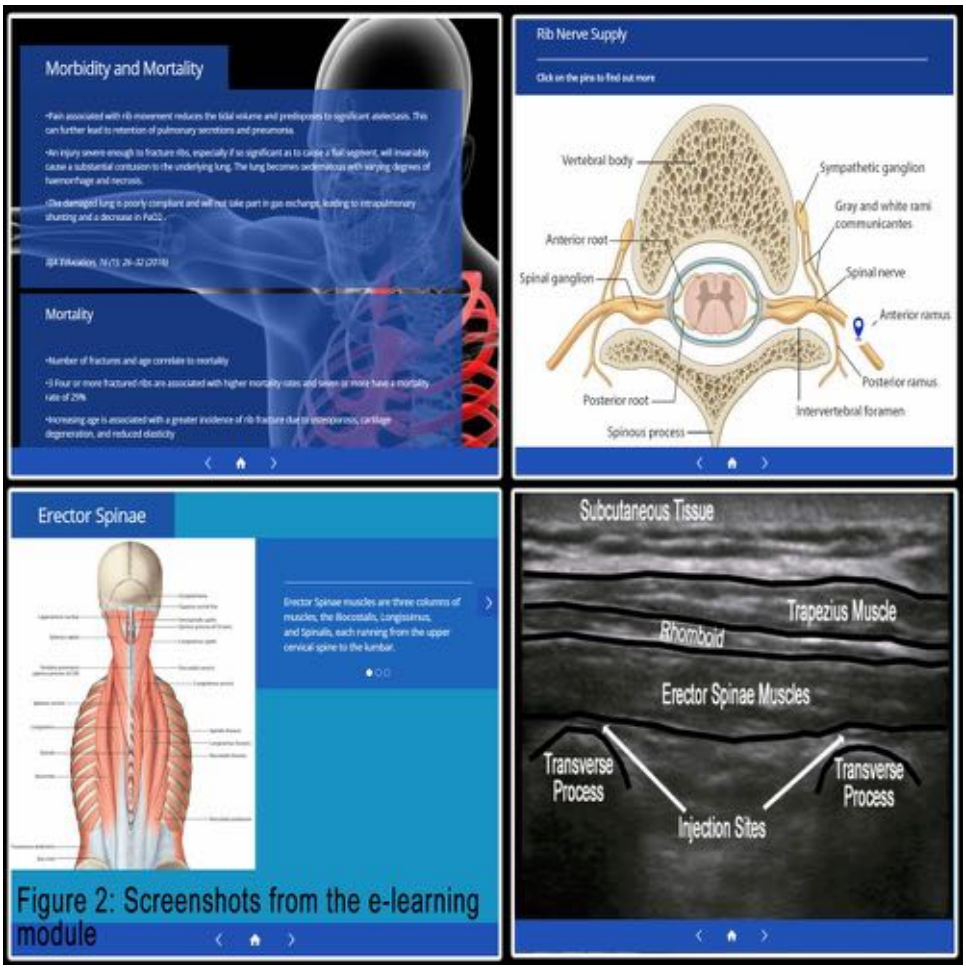


Figure 2: Screenshots from the e-learning module

Discussion

We plan to commence a pilot programme for feedback and evaluation. We then intend to use this education package to enable more clinicians to gain confidence and skills in performing ESP blocks in our institution, achieving more timely and effective pain management in rib fracture.

Poster No: 8

Regional analgesia in the clumsy parturient: Combined popliteal and adductor canal block to facilitate reduction of a fractured ankle

Dave Robinson

Royal Stoke Hospital, Stoke on Trent, United Kingdom

Abstract

Introduction

Accidental injury occurs in 6% of all pregnancies and accounts for between 17 – 39% of all peripartum Emergency Department visits. A large proportion of this trauma is due to slips and falls because of increased joint laxity and weight gain shifting the centre of gravity [1].

Around 2% of all pregnant women will require non-obstetric surgery, carrying an increased anaesthetic risk, especially of aspiration and cardiorespiratory volatility [2].

Case

A 34-year-old 78Kg fit and well primigravida woman with a gestation of 18 weeks presented to the Emergency Department following a fall at home. She sustained a fracture-dislocation of her distal left tibia and fibular which required reduction and stabilisation.

In order to avoid procedural sedation, as well as the humanitarian aspect of good analgesia, we provided a regional peripheral nerve block in the Emergency Department.

Following 50mcg of fentanyl for positioning, using ultrasound guidance, we injected 20ml of 0.375% levobupivacaine around the common peroneal and tibial nerves at the popliteal crease, and a further 20ml of 0.375% levobupivacaine around the femoral nerve branches in the distal sub-sartorial compartment.

After 45 minutes, adequate reduction and stabilisation was achieved with a small amount of Entonox for anxiolysis.

Discussion

Early peripheral nerve blocks provide excellent site-specific analgesia, are free from major side effects, and avoid the need for regular opiates.

In this context, it allows avoidance of procedural sedation and the associated increased risk to the parturient, as well as improving patient outcomes, efficiency and cost effectiveness throughout the hospital stay [3].

References

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[3] Jeff Gadsden and Alicia Warlick. *Regional anesthesia for the trauma patient: improving patient outcomes.* Local Reg Anesth. 2015; 8: 45–55. Published online 2015 Aug 12.

Poster No: 9

Interscalene blocks for elective shoulder surgery to improve service efficiency

Sundeep Govind, Mustafa Hamza, Agilan Kaliappan

Basildon Hospital, Basildon, United Kingdom

Abstract

Introduction

Elective shoulder arthroscopy and decompression is performed on a weekly basis at an Essex DGH with 4-5 patients per list. It is typically performed under general anaesthetic or general anaesthetic and interscalene block.

This project was established to evaluate the value of performing the interscalene block and if it improves patient care and theatre productivity.

Methods

The project was registered with the clinical effectiveness unit.

Cases were selected from the 5th October 2017 to the 5th October 2018.

Cases were divided into general anaesthetic (GA) only and general anaesthetic and interscalene block (GA +ISB).

Anaesthetic charts and recovery notes were analysed. Opiate use intra op, opiate use post-op, antiemetic use and time in recovery were noted. Opiates were converted into mg of morphine to aid analysis.

Results

Mean age of the GA group 56, mean age of GA + ISB 60.

Mean time in recovery for GA group 106 minutes, mean time in recovery for GA + ISB group 60 minutes. Students t test run giving a p-value of 0.043, 95% CI for difference between means of 19.6 to 72.19 minutes.

Intra-op opiate use for GA group 16.9mg of morphine for GA + ISB 17.1. p-value 0.92.

Post-op opiate use for GA group 7.58mg, GA + ISB 0.48mg. p-value<0.001, 95% CI 4.4 to 9.6.

Discussion

Results demonstrate that ISB reduces post op opiate requirement and time in recovery.

Following discussion at department meeting it was decided elective shoulder lists would be anaesthetised by anaesthetists able to perform ISB.

Poster No: 10

Improving Patient follow up - From Books to Bytes

Simone Misquita, Hannah Rose, Sean McHale

Western Sussex Hospitals Trust - St. Richard's Hospital , Chichester, United Kingdom

Abstract

INTRODUCTION –

Regional anaesthesia blocks are performed frequently in our department. However there is no standardized follow up of these patients. Generally paper records were maintained in a file, however due to logistical and time constraints the rate of follow up was inadequate.

The aim of our quality improvement project was to create an electronic database to store information on regional anaesthesia blocks performed, unify and replace the paper based system that we use, provide a standardized method of documentation, follow up patients, detection of complications and as a logbook for clinicians in the department.

METHODS –

We created an electronic database using Microsoft Access 2010.

Information governance approval was obtained. Patient confidentiality was maintained using a password. Patient consented to enter their details on the database.

Two main tables were designed and integrated on one form for ease of use.

DISCUSSION –

Having designed and used this database in its pilot phase several advantages were noted some of which are:

1.Improved patient follow up, as patient details are easily accessed remotely than a paper based filing system

2. Standardised procedure documentation.

3. Improved quality assurance and outcomes due to patient feedback received

4. Better compliance with data protection due to password protection, rather than in a paper based folder.

6. Logbooks can be extracted from the database

7. Helps organizing data in a logical method

8. Queries and reports organize data for easy retrieval and analysis

9. Revalidation and audit tool

10. Maybe useful in a nationwide registry such as AURORA . 2

References

1. Anjalee Brahmbhatt, Michael J. Barrington. Quality Assurance in Regional Anesthesia: Current Status and Future Directions, Current Anesthesiology Reports December 2013, Volume 3, Issue 4, pp 215–222
2. www.anaesthesiaregistry.org

Poster No: 11

Lumbar Epidural versus Nerve blocks plus Catheter Analgesia for Lower Limb Amputations – A prospective review

Suzanne Coulter[1], Ross Cruickshank[2], Martin Clark[1]

[1]Royal Bournemouth and Christchurch Hospitals, Bournemouth, United Kingdom. [2]Salisbury NHS Foundation Trust, Salisbury, United Kingdom

Abstract

BACKGROUD AND AIMS

Acute pain is a considerable problem for patients undergoing amputation. Debate continues as to whether pre-emptive epidural analgesia is superior to other techniques. We describe our experience of two separate techniques for managing acute pain following above (AKA) and below knee amputation (BKA).

METHODS

Prospective review June 2017 - June 2018. Subjects were adults undergoing amputation predominantly for peripheral vascular disease.

Patients received either lumbar epidural 24hours pre-operatively or Femoral nerve block (AKA) or Popliteal + Adductor canal block (BKA) followed by insertion of a distal sciatic nerve catheter directly by the surgeon in all blocked patients.

Pain scores recorded from post-operative days 1 to 4, total systemic opiate consumption and time to mobilisation into chair.

RESULTS

69 patients total. 36 epidural and 31 blocks/nerve catheter.

Pain scores revealed trend for BKA to be more painful than AKA regardless of technique (see diagram 1.). Furthermore patients with epidurals demonstrated slightly better pain scores, particularly for BKA (Average pain scores 3.3 versus 4.9).

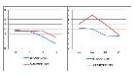

Diagram 1. Average pain scores.

Catheter patients received 63mg morphine for AKA and 60mg for BKA. Patients with epidurals received no opiates as epidural infusions contained 1mcg/ml fentanyl.

There was no significant difference in time to mobilisation. 6 patients (16%) in the epidural group and 6 patients (19%) in the catheter group mobilised to chair by 48h.

DISCUSSION

In our experience an epidural technique confers superior analgesia, particularly in the BKA population who as a group appear to present a greater challenge in providing effective analgesia.

References

Poster No: 12

Improving multi-disciplinary confidence in assisting with regional anaesthesia outside of theatres

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Abstract

Introduction

The use of sole regional anaesthesia in surgery or acute pain is becoming more common, however those explicitly trained and skilled in its use remains a small portion of the anaesthetic workforce. In the ever-increasing demand for NHS services theatre efficiency is constantly under scrutiny(1) however patient safety remains the highest priority. Our project aimed to analyse and improve safety and confidence in assistance with regional anaesthesia outside theatres.

Methods

Initial nursing staff confidence in key safety areas in managing patients who had undergone regional anaesthesia was assessed via a questionnaire. Following this targeted training and reassessment sessions were held along with a poster specifically reinforcing key management points for display in areas designated as “regional anaesthesia” spaces.

Results

Initial results demonstrated significant knowledge gaps, with less than 50% of staff reporting feeling confident at all in 3 of 6 key safety areas. Following training all of these areas demonstrated improved confidence with 100% of staff feeling confident or very confident in 5 of the 6 safety areas.

Discussion

Regional anaesthesia remains a relatively new subspecialty and even more novel is the use of designed ‘block rooms’. These spaces potentially offer the opportunity within smaller hospitals for a single regional specialist to vastly increase theatre efficiency along with acute pain services. This however relies on trained and confident nursing staff who are able to manage these patients. Our project clearly demonstrated an improvement in staff competence and confidence with a long-lasting aid memoire ensuring permanence of change.

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Poster No: 13

Audit of ultrasound guided pecto-intercostal fascial block analgesia post cardiac surgery

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Abstract

Introduction

Recently there has been a move towards 'fast track' cardiac surgery, aiming for early extubation and mobilisation. To achieve this, lower doses of opioids must be used potentially increasing pain. In our unit, pecto-intercostal fascial blocks (PIFB) are being used by several anaesthetists to improve analgesia but the outcomes are unknown, this audit investigated the intervention.

Methods

Between December 2018 to February 2019 we examined the records of patients who were suitable for 'fast-track.' We looked at the incidence of complications, time to extubation, the use of anti-emetics, post-operative & total morphine consumption over 24 hours and patient satisfaction.

Results

We collected the data of 60 patients (PIFB n =30, no regional technique n=30). There were no complications reported in the regional group. Morphine consumption, time to extubation and anti-emetic use were all reduced in the regional group. Patient satisfaction was comparable between both groups.

	PIFB	No regional technique	
Mean Post-operative morphine consumption in 24 hours [mg (SD)]	14.4 (±9.6)	20.3 (±10.3)	30 % reduction
Mean Total Morphine Consumption including theatre [mg (SD)]	17.8 (±10.7)	27.9 (±10.5)	36% reduction
Median Time to Extubation [Hours (IQR)]	3 hours (2 - 4 hrs 30m)	5 hr 48 min (5 - 8 hrs 18m)	50% reduction
Use of anti-emetic	15	21	29% reduction

Conclusion

From our results PIFB in our unit appears to be a safe, opioid reducing intervention, reduces time to extubation with similar patient satisfaction scores. Furthermore, our results show that a regional technique appears more beneficial in the over 60 population.

Poster No: 14

The awake regional list in a district general hospital. An audit of clinical outcomes and patient satisfaction

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Abstract

Introduction

The clinical superiority of regional techniques over opioid alone has long been established [1], however there is less published work on the patient experience of regional anaesthesia. Following the recent development of an awake regional plastic surgery list we were interested in both evaluating clinical outcomes when compared with general anaesthesia and also gauging the patient experience.

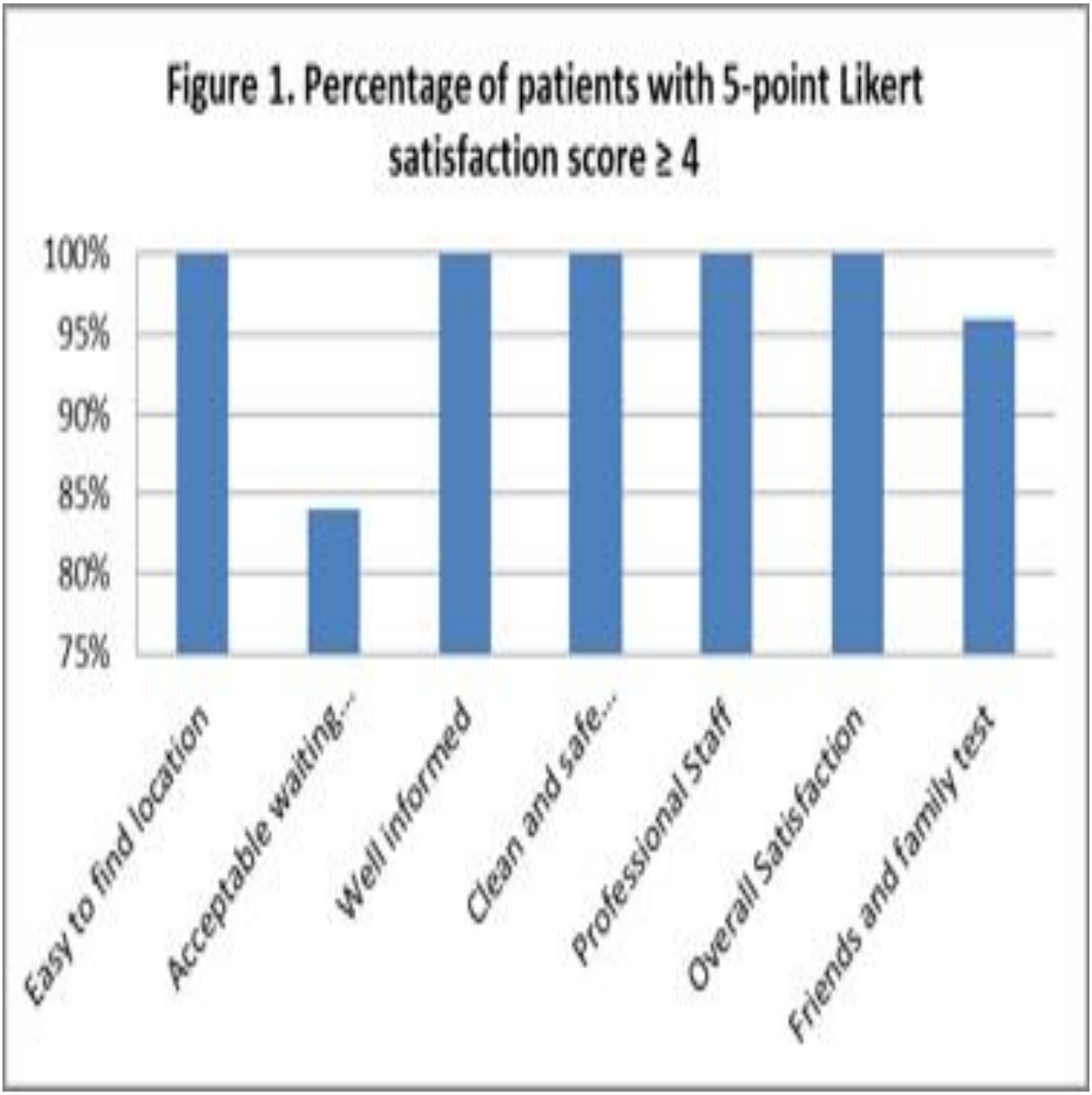
Methods

Ethical approval was not required.
Patient experience: we conducted prospective postoperative interviews with patients who had recently undergone awake upper limb plastic surgery (Figure 1). We aimed to achieve an audit standard of 90-100%.

Clinical Outcomes: we retrospectively evaluated clinical notes of patients who had upper limb orthopaedic awake surgery against matched operations under general anaesthesia for comparison. Exclusion criteria included <18 years, LA only and where the documentation was inadequate. The outcomes measured are found in figure 2.

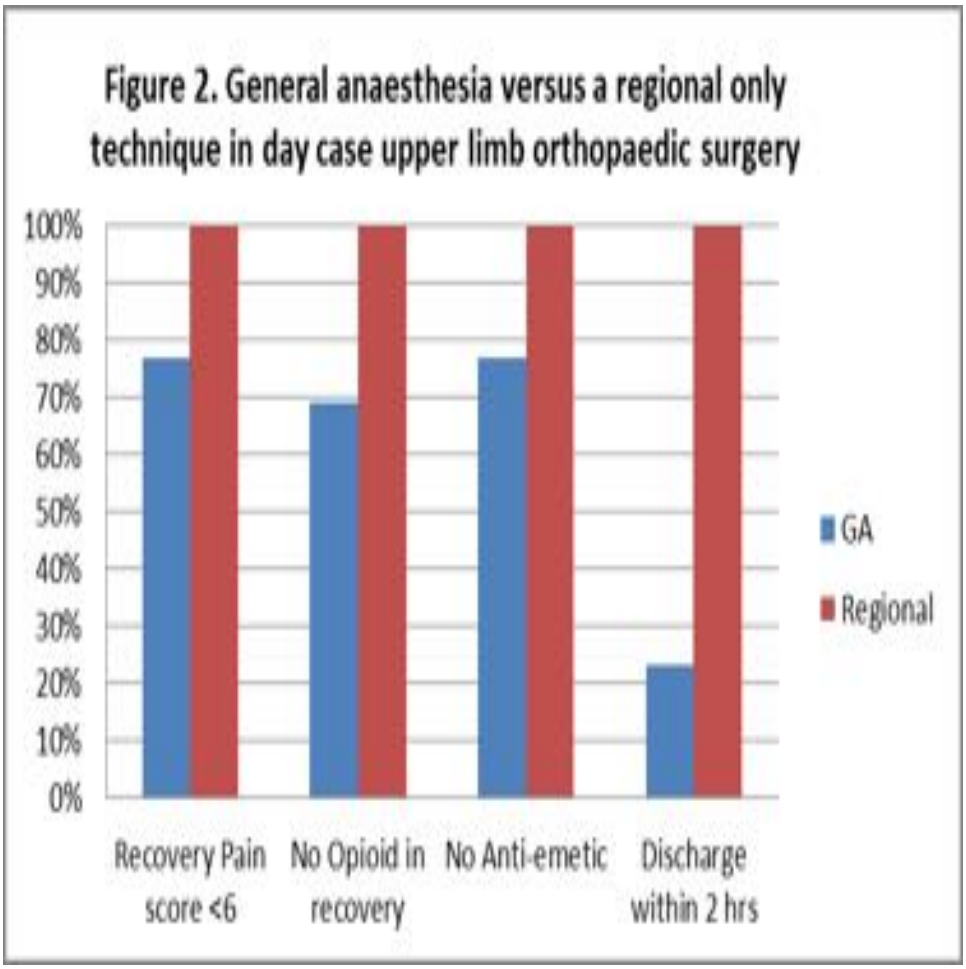
Results

Patient Experience
25 patients contacted



Clinical Outcomes

Sixty-one notes requested, 23 were excluded, leaving 13 general anaesthetic and 25 regional only. n=38



Discussion

We have demonstrated that a service that was developed with zero additional cost has improved clinical outcomes when compared to general anaesthesia and provides an excellent patient experience overall. It is common for patients' to have fixed pre-conceptions of awake surgery and frequently education and expectation management is required. We aim to use this work to reassure future patients and inform them of the benefits of regional only techniques.

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Poster No: 15

Becoming future ready - devising training outcomes in regional anaesthesia for postgraduate trainees based on a survey of current practices.

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Abstract

Introduction: In accordance with GMC guidance[1], the RCoA must define specialty specific training outcomes in regional anaesthesia for CCT holders. Our department lead was approached by the RCoA to recommend ways in which training can enable one to perform blocks independently. As a baseline, we surveyed senior trainees to explore current exposure and confidence in regional techniques.

Methods: A 22 question survey was emailed to ST5-7 trainees across UK. The level of training in regional anaesthesia (intermediate/higher/advanced) was established, along with the number of blocks performed across a range of thoraco-abdominal, upper and lower limb blocks. Analysis focussed on what influenced the confidence to practise independently at different stages of training.

Results: 149 results analysed, with fair distribution amongst regions and training grades. Tables 1 & 2 show the data-distribution for higher and advanced trainees respectively. 94% of advanced trainees feel confident using awake blocks independently while only 44% of higher trainees do. The higher trainees have good exposure to all types of blocks performed (eg. 5 variations of upper limb), but lower numbers of each block (average <10) as compared to advanced trainees who gain confidence by more numbers (average >10) of all blocks.

Discussion: We recommended that higher trainees achieve expertise in any 2 blocks in each anatomical region based on local best practice. We propose that higher training be focussed on mastering smaller number of essential regional techniques, so that all UK CCT holders possess skills sufficient for confident autonomous practice of regional anaesthesia.

	EXPOSURE TO INDIVIDUAL BLOCKS						LEVEL OF SUPERVISION NEEDED		
NOS / BLOCKS	0	1-5	6-10	11-20	21-30	>30	DIRECT	INDIRECT	DISTANT
UPPER LIMB/BRACHIAL PLEXUS BLOCKS									
INTERSCALENE	3	20	19	29	22	7	24	27	49
SUPRACLAVICULAR	14	29	34	8	10	5	39	25	36
INFRACLAVICULAR	58	31	8	0	2	2	85	10	5
AXILLARY	7	25	22	17	10	19	24	29	47
PERIPHERAL NERVE BLOCK	8	25	27	19	15	5	NR	NR	NR
LOWER LIMB/LUMBOSACRAL PLEXUS BLOCKS									
FASCIA ILIACA	2	8	8	20	24	37	5	8	86
FEMORAL NERVE	2	10	7	20	25	36	5	3	92
POPLITEOSCIATIC	3	14	25	31	15	12	14	19	68
ADDUCTOR CANAL	15	25	27	20	10	2	31	17	53
ANKLE BLOCK	7	31	32	14	7	10	19	17	64
TRUNK/PARANEURAXIAL NERVE BLOCKS									
THORACIC/PARAVERTEBRAL	42	36	14	3	2	3	71	19	10
SERRATUS PLANE	69	25	3	0	0	2	76	17	7
PECS	64	27	7	0	0	2	73	22	3
QUADRATUS LUMBORUM	80	12	7	0	2	0	83	10	7
TRANS. ABDOMINUS PLANE	3	12	12	25	17	31	5	10	85
RECTUS SHEATH	12	39	24	12	7	7	31	19	51
CONFIDENCE IN INDEPENDENT PRACTICE									
WOULD PERFORM AWAKE REGIONAL TECHNIQUE FOR HAND SURGERY									44
WOULD PERFORM REGIONAL AND GENERAL ANAESTHESIA BOTH									41
WOULD NOT BE COMFORTABLE PERFORMING A REGIONAL BLOCK ALONE									15

TABLE 1: PERCENTAGE DISTRIBUTION OF SKILL AND CONFIDENCE IN PERFORMING UPPER LIMB, LOWER LIMB AND TRUNK BLOCKS IN TRAINEES WHO HAVE COMPLETED HIGHER TRAINING MODULE (59 TRAINEES OUT OF 149)

	EXPOSURE TO INDIVIDUAL BLOCKS						LEVEL OF SUPERVISION NEEDED		
NOS / BLOCKS	0	1-5	6-10	11-20	21-30	>30	DIRECT	INDIRECT	DISTANT
UPPER LIMB/BRACHIAL PLEXUS BLOCKS									
INTERSCALENE	0	0	12	12	6	71	2	6	82
SUPRACLAVICULAR	0	0	18	24	18	41	6	24	71
INFRACLAVICULAR	29	24	12	12	6	18	35	29	35
AXILLARY	0	0	6	6	18	71	6	6	88
PERIPHERAL NERVE BLOCK	0	12	12	6	12	59	NR	NR	NR
LOWER LIMB/LUMBOSACRAL PLEXUS BLOCKS									
FASCIA ILIACA	0	0	6	6	18	71	0	6	94
FEMORAL NERVE	0	0	6	24	18	53	0	0	100
POPLITEOSCIATIC	0	18	0	12	12	59	12	12	76
ADDUCTOR CANAL	0	6	24	29	6	35	6	12	82
ANKLE BLOCK	0	0	24	29	18	29	6	12	82
TRUNK/PARANEURAXIAL NERVE BLOCKS									
THORACIC/PARAVERTEBRAL	6	29	18	18	12	18	41	24	35
SERRATUS PLANE	41	29	18	6	0	6	41	6	53
PECS	29	18	35	6	6	6	29	18	53
QUADRATUS LUMBORUM	59	24	6	6	0	6	47	35	18
TRANS. ABDOMINUS PLANE	0	0	0	24	24	53	0	6	94
RECTUS SHEATH	12	24	24	29	6	6	6	18	76
CONFIDENCE IN INDEPENDENT PRACTICE									
WOULD PERFORM AWAKE REGIONAL TECHNIQUE FOR PERIPHERAL LIMB SURGERY									94
WOULD PERFORM REGIONAL AND GENERAL ANAESTHESIA									0
WOULD NOT BE HAPPY TO PERFORM A REGIONAL BLOCK ALONE									6

TABLE 2: PERCENTAGE DISTRIBUTION OF SKILL AND CONFIDENCE IN PERFORMING UPPER LIMB, LOWER LIMB AND TRUNK BLOCKS IN TRAINEES WHO HAVE COMPLETED ADCVANCED TRAINING MODULES (17 TRAINEES OUT OF 149)

References

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Poster No: 16

A Timely Reminder of Untimely Spinal Anaesthesia

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Abstract

Introduction

We present a case of markedly prolonged spinal anaesthesia in a patient undergoing emergency caesarean section.

Case

The fit and well 32-year-old lady had previously undergone two caesarean sections under spinal anaesthesia without incident. A 25G Sprotte needle was used to administer 2.4ml 0.5% Hyperbaric Bupivacaine and 300mcg Diamorphine at L4-5. A sensory block from T3-S3 on the left and T4-S3 on the right was achieved, with a Bromage score of 3. The operation was completed uneventfully.

At 8 hours post spinal she had a sensory block to T12 and a profound motor block, reflexes were normal and plantars downgoing. After 11 hours there was minimal improvement in neurology; an MRI lumbosacral spine was reassuringly normal. At 15 hours power had improved to a bromage score of 2, and sensory block to T10. At 29 hours there remained a mild reduction in power of hip flexion, and by 33 hours she had made a full recovery.

Discussion

A literature review identified eight similar reports of prolonged neurological deficit after spinal anaesthetic followed by complete resolution, with no clear cause identified[1-8]. This rare phenomenon appears to occur regardless of needle type and local anaesthetic.

Whilst it is encouraging patients with concerning neurology can make a full recovery, persistent neurology is a 'red flag' sign of several severe neurological complications. Delay in diagnosis and treatment is strongly linked with progression to permanent deficit. It is essential that hospitals have protocols to rapidly identify potentially reversible underlying pathology.

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Poster No: 17

Pecs I + II with serratus anterior blocks versus local infiltration for breast cancer surgery under general anaesthesia

Rachel Noble[1], Teodora Filipescu[2], Simon Watts[3], Jayne Halcrow[3], Jane Macaskill[4], Ayman Mustafa[5]

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Abstract

Introduction: Opiates are extensively used in breast cancer surgery. The use of opiates may drive tumorigenesis and metastasis by promoting angiogenesis, suppressing immunity and facilitating proliferation (1,2). Regional anaesthetic blocks pre-operatively may provide sufficient analgesia to decrease opiate use (3) and persistent post-surgical pain (4). For full area coverage in breast surgery, pecs I and II, and serratus anterior blocks should suffice (5,6).

Methods: In this retrospective notes review we examined patients who had surgery under general anaesthesia with either surgical local anaesthetic infiltration (Infiltration) or pecs I+II and serratus anterior blocks (Blocks). All patients presenting for breast cancer surgery between August 2016 and October 2018 in Ninewells Hospital were considered, with those undergoing pre-op guidewire insertion or immediate plastics reconstruction excluded. Intra-operative and post-operative analgesic requirements were measured. All opiates used were converted to oral morphine equivalent (OME) for analysis. Caldicott approval was obtained.

Results: There were 42 patients included. Preliminary results are recorded in table.

	Blocks	Infiltration
Population Characteristics		
Number (%)	21 (50%)	21 (50%)
Age [IQR]	49 [54.7]	56 [51.67]
ASA [IQR]	2 [2,2]	2 [1.75,2]
Procedure- wide local excision	7	9
Procedure- mastectomy	14	12
Length of stay [IQR]	2 [1,2]	2 [2,2.75]
NEWS pain score [IQR]	0 [0,1]	0 [0,0]
Opiate Use		
Intra-operative no (% of cohort)	21 (100%)	21 (100%)
Intra-operative average dose OME (mg)	13.4	17.2
Recovery no (% of cohort)	1 (14%)	4 (19%)
Recovery average dose OME (mg)	10	8
Ward no (% of cohort)	9 (43%)	7 (33%)
Adjuvant Use		
Intra-operative		
Ketorolac no (%)	1 (5%)	3 (14%)
Clonidine no (%)	1 (5%)	4 (19%)
Paracetamol no (%)	7 (33%)	9 (38%)
Ward		
Paracetamol no (%)	18 (86%)	18 (86%)
NSAIDs no (%)	0 (0%)	7 (33%)

Discussion: Our preliminary results suggest regional anaesthesia is not inferior to surgical infiltration. The block group required less peri-operative opiates and adjuvants, however they use more opioids on the ward. This may partially be explained by differing prescribing preferences between weak opioids and NSAIDs. We do not have data on the incidence of pre-existing or chronic pain indicated by pre-operative use of opioids.

In conclusion, the use of regional blocks may reduce the need for peri-operative opioids, potentially lowering the risk of metastasis, recurrence and persistent post-surgical pain.

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Poster No: 18

Survey on Attitudes to Continuous Peripheral Nerve Blockade in Trauma

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Abstract

Introduction

In the context of military trauma, Continuous Peripheral Nerve Blockade (CPNB) provides effective analgesia during prolonged casualty evacuation and where complex injury patterns require repeated surgical procedures.

During recent operations in Iraq and Afghanistan CPNB resulted in improved pain outcomes without increased infection[i],[ii],[iii],[iv]. Following this, Defence Medical Services recommend CPNB as part of a multimodal analgesia strategy within deployed hospital care[v].

Methods

An online survey using RedCAP was distributed to consultant and trainee anaesthetists in all locations with defence trainees; this remained open for one month in July 2018. We examined exposure to CPNB and confidence to perform relevant regional techniques as well as exploring attitudes to CPNB risks and benefits.

Results

We received 190 replies, including responses from 10 Major Trauma Centres. 149/190 respondents (78.4%) advocated the use of CPNB in trauma. Despite this, only 10.5% surveyed regularly placed CPNB catheters, with most rarely or never using CPNB (58.2%).

Discussion

Lack of infrastructure and concerns regarding infection risk and failure to diagnose compartment syndrome remain barriers to widespread uptake of CPNB. This suggests that evidence [iii],[vi],[vii] refuting these issues are not widely known or accepted.

Military consultants appeared more confident in performing CPNB when compared to Civilian consultants, possibly suggesting operational exposure or training. However the problem of maintaining currency in this advanced skill needs to be addressed. It may be that pre-deployment training/simulation can provide the answer.

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Poster No: 19

Awake Ankle Surgery Under Ultrasound Guided Ankle Block: Patient Perspective

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Abstract

Introduction

Elective foot surgery is often conducted in the day-case setting and ultrasound-guided ankle block can facilitate anaesthesia, analgesia and early discharge.[1] However, information about patient understanding of nerve blocks and awake surgery is limited. We aimed to understand patients' expectations and experience of undergoing awake surgery under ankle block.

Methods

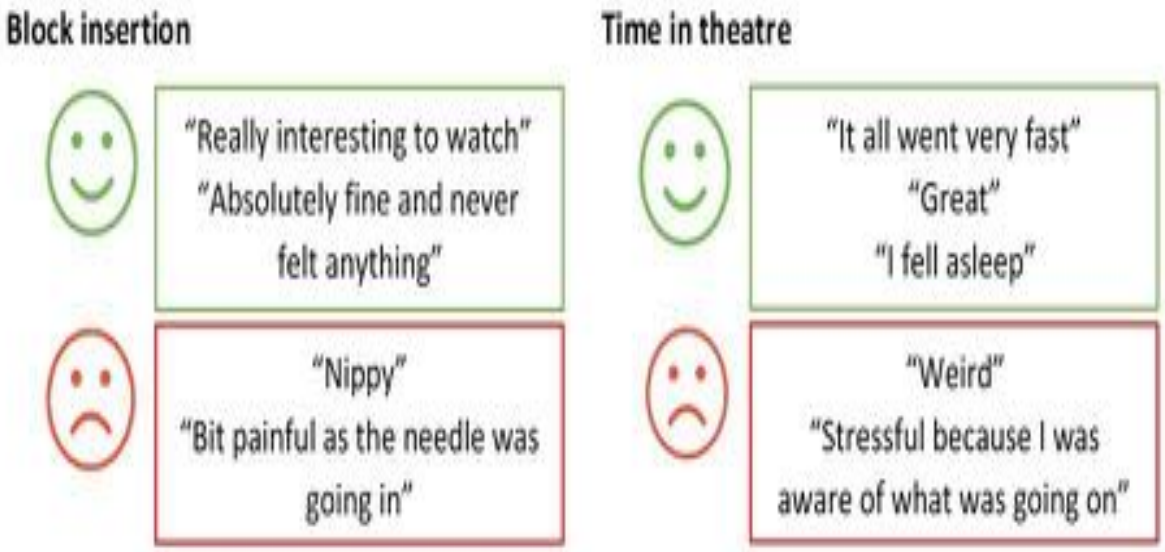
Local clinical governance team confirmed ethical approval was not required. Oral and written information was given before obtaining informed consent from 23 patients undergoing foot procedures. An experienced anaesthetist performed the ultrasound-guided ankle blocks using 0.75% ropivacaine. Demographic data was collected. Patients were telephoned 48 hours later and interviewed using a semi-structured questionnaire.

Results

20 patients (87%) received sedation with titrated doses of intravenous midazolam. 3 patients (13%) required intra-operative supplementation with local anaesthetic infiltration by the surgeon. 21 (91%) patients were day cases. 5 patients (22%) reported discomfort with block insertion (descriptors in figure). Intra-operative experience was positive for the majority of patients (87%). Block duration was variable; most (78%) felt pain on block regression was acceptable but 5 (22%) patients experienced difficulty with pain management. Patients appreciated avoiding GA: "no nausea", "not woozy." Some reported pre-operative apprehension. However, all were satisfied with the pre-operative information and said they would have the same again.

Discussion

A predominantly positive peri-operative patient experience is encouraging. Pain management on block regression can be challenging. Awake surgery still represents a source of pre-operative anxiety, and further pre-operative education is a potential solution.



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Poster No: 20

Survey of junior surgeons' knowledge about local anaesthetics in a Singaporean healthcare cluster

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Abstract

Introduction

Local anaesthetics (LA) are frequently used amongst surgical and anaesthetic junior doctors. It is therefore imperative for both groups to be familiar with the safe use of LA and management of toxicity. Our local cluster of hospitals (SingHealth, Singapore) adopts doses as published by El-Boghdadly et al[1].

A prior study[2] by Royal College of Surgeons England assessed surgical and anaesthetist trainees' knowledge of LA use and toxicity. Our project investigates this amongst a similar target demographic in SingHealth.

Methods

103 surgical junior doctors across 3 tertiary SingHealth hospitals, of varying subspecialties and grades, were approached to complete a questionnaire designed by the team. The surveys were completed under direct supervision to prevent respondents from verifying their answers.

Results

83% (85/103) of respondents reported at least weekly use of LA. 63% (65/103) and 33% (29/89) respectively were able to identify the correct maximum safe doses for lignocaine and bupivacaine. 41% (42/103) correctly identified toxicity treatment. 78% (80/103) recognised at least 2 out of 3, and 13% (14/103) recognised all 3 accurate options for signs of toxicity.

Discussion

Significant knowledge gaps were identified amongst the cohort regarding LA use and management of LA toxicity. There is a trend suggesting that the more experienced surgical trainees are more familiar with LA use. Guidance of safe doses can be provided through implementation of simple visual tools in relevant settings, or enhanced education such as simulation-based training targeting LA use and toxicity.

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