

*British Society of Orthopaedic
Anaesthetists*

Annual Scientific Meeting

*Abstracts and Biographies for
Nottingham Meeting*

9th November 2018

*Trent Vineyard Conference Centre
Unit 1 Easter Park
Lenton Lane
Nottingham
NG7 2PX*

BRITISH SOCIETY OF ORTHOPAEDIC ANAESTHETISTS

Friday 9th November 2018

Session 1: Post-operative Pain Issues

- 09.20 - 09.50 **“Deprescribing - Implications for Anaesthetists”**
Dr Nicholas Levy, Bury St Edmunds
- 09.50 - 10.30 **“Analgesia for Patients having Hip and Knee Arthroplasty”**
Dr Thomas Bendsten, Aarhus, Denmark

Session 2: Trauma

- 11.00 - 11.30 **“The very Latest on #NOF and Major Trauma Management in the Elderly”**
Prof Richard Griffiths, Peterborough
- 11.30 - 12.10 **“The Medical Response to a Terrorist Attack: What has the NHS Learned?”**
Prof Chris Moran, Nottingham

Session 3: Post-operative Complications

- 13.20 - 13.50 **“Prediction and Prevention of AKI in Orthopaedic Patients”**
Dr Samira Bell, Dundee
- 13.50 - 14.20 **“Medicolegal Aspects of Nerve Blocks and Nerve Damage”**
Dr David Bogod, Nottingham

Session 4: Oral Presentations and Awake Shoulder Surgery

- 14.50 - 15.50 Oral Prize Presentations
- 15.50 – 16.40 **“Awake Shoulder Surgery: How to do it”**
Dr James French and Mr John Geoghegan, Nottingham

Dr Nicholas Levy



*Consultant Anaesthetist
West Suffolk Hospital*

Nicholas graduated from the Royal Free Hospital in 1993 and undertook anaesthetic training in the Central London School of Anaesthesia. In 2003, he was appointed as a Consultant Anaesthetist at the West Suffolk Hospital, with an interest in acute pain medicine. Nicholas has a special interest in the peri-operative management of the surgical patient and is member of the RCoA Perioperative Medicine leadership group and the RCoA opioid prescribing group.

“Deprescribing - Implications for Anaesthetists”

The United States has a documented prescribed opioid epidemic. The UK is the largest user of opioids within Europe and is exactly 10 years behind the US in terms of prevalence of prescribed opioid dependence.

The aim of this talk is to examine the drivers for opioid dependence in the surgical patient and examine the strategies that we as anaesthetists can endorse to promote deprescribing and a reduction in opioid dependence in our patients.

Key Points

- In the UK, about 5% of the population is dependent on prescribed opioids
- The concept of Deprescribing is now an important component of good medicine management.
- The use of modified release opioid preparations and repeat prescriptions are the two main drivers for subsequent opioid dependence in previously opioid naïve patients.

References

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2. Levy N, Mills P, Penfold N. The US prescribed opioid epidemic: lessons for perioperative medicine in the UK. Part 1. *RCoA Bulletin*. 2018.107. 48-49
3. Levy N, Mills P, Penfold N. The US prescribed opioid epidemic- lessons for perioperative medicine. Part 2. *RCoA Bulletin*. 2018.108. 46-47.
4. Levy N, Sturgess J, Mills P. “Pain as the fifth vital sign” and dependence on the “numerical pain scale” is being abandoned in the US: Why? *BJA*. 2018; 120: 435-438
5. Levy N, Mills P. Controlled-release opioids cause harm and should be avoided in the management of post-operative pain in opioid naïve patients. *BJA*. In print
6. Kharasch ED, Brunt LM. Perioperative opioids and public health. *Anesthesiology: The Journal of the American Society of Anaesthesiologists*. 2016 Apr 1;124(4):960-5.
7. Brummett CM, Waljee JF, Goesling J, et al. New persistent opioid use after minor and major surgical procedures in US adults. *JAMA surgery*. 2017 Jun 1;152(6): e170504-.

Prof Richard Griffiths



*Consultant Anaesthetist
Peterborough & Stamford Hospitals Foundation NHS Trust*

*National Clinical Director for Trauma and Professor of Orthopaedic Trauma Surgery
Nottingham University Hospitals NHS Trust*

Aged 58, born in Pontypridd, married to Melanie, a physiotherapist, not an actress!! Two daughters, Emma, 27 and Rebeca 26. Trained at St Thomas' in London, postgraduate training in Nottingham, Leicester and San Francisco. NHS consultant for past 23 years, FRCA primary examiner for 10 years, founded NHS Hip Fracture Perioperative Network. Chair AAGBI Guidelines on Hip Fracture, Surgery and Dementia. Member of NICE 124.

“The very Latest on #NOF and Major Trauma Management in the Elderly”

As I write this brief abstract, I am aware that the updated Association of Anaesthetists Guidelines, produced in collaboration with the BGS and BOA, are on my computer, just needing that final push. You will be pleased to know that they are much shorter than the original document and the focus of them is on multidisciplinary working and “sympathetic” anaesthesia. The BOA has suggested that the morning trauma meeting should not be a review of the X rays, but a fully blown MDT, with decisions about treatment, including, in some cases, palliative care discussed. These meetings will have to be attended by all, including physicians and theatre staff.

Sympathetic anaesthesia, what does it mean? Well I will show you again the terrible blood pressure data from the ASAP study in 2013, when 33% of patients had a mean arterial pressure of less than 55 mmHg at some stage during their surgery. The debate about regional versus general anaesthesia is over, I am not sure that one will ever emerge as superior to the other, let the patient choose and let us deliver careful appropriate physiologically stable care.

Major trauma in the older person is a topic that is getting closer to me every year. I am a keen road cyclist and as I approach 60, I know that I may become a member of the fastest growing cohort of major trauma, those over 60. The older folks are now more active, the baby boomers are enjoying their gold-plated pensions and ample leisure time. I will take a quick look at the 2017 TARN report and try and offer some solutions to the issues that it raised.

Prof Chris Moran



*National Clinical Director for Trauma and Professor of Orthopaedic Trauma Surgery
Nottingham University Hospitals NHS Trust*

Prof. Chris Moran is National Clinical Director for Trauma to the NHS in England and Professor of Orthopaedic Trauma Surgery at Nottingham University Hospital. He trained in Cardiff and Newcastle and did fellowships at the Mayo Clinic, USA and the University Hospital in Basel, Switzerland. He is a full-time trauma surgeon and still leads the Trauma Team. He has a special interest in surgery for polytrauma, complex articular fractures and the treatment of nonunion. He has led the development of the Major Trauma Networks in England, which have increased the probability of surviving major injuries by 25%. In addition, he has national responsibilities for emergency preparedness, resilience and response (EPRR) and led the national clinical debriefings following all of the major incidents in 2017.

He is international adviser on trauma to a number of Governments. His research portfolio includes 150 published scientific papers and abstracts with over 6,000 citations, mainly in the field of trauma. He continues in active research in this field. He is editor of a major textbook, the AO Principles of Fracture Surgery and co-authored all of the British Orthopaedic Association Standards for Trauma.

Dr Samira Bell



*Consultant Nephrologist
Ninewells Hospital, Dundee*

Dr Samira Bell was appointed as Consultant Nephrologist at Ninewells Hospital in 2009 after completing her renal training in the West of Scotland. She obtained her medical degree (MChB) in 1999 and MD in 2007 from the University of Glasgow and obtained an NHS Research Scotland Fellowship in 2013 when she was appointed as an Honorary Senior Clinical Lecturer within the Population Health Sciences Division of the University of Dundee. Her main research interest is using linkage of routine collected datasets in renal epidemiology to impact on patient care. She has both a clinical and research interest in acute kidney injury.

“Prediction and Prevention of AKI in Orthopaedic Patients”

Post-operative acute kidney injury (AKI) is a common complication of orthopaedic surgery.

It is associated with adverse outcomes including increased length of hospital stay, future development of chronic kidney disease and increased mortality even with mild, transient AKI. Identifying patients at high risk of AKI facilitates closer monitoring allowing for peri-operative optimisation. In the absence of any effective treatments for AKI, early recognition and prevention is key to improving patient outcomes. We have developed and validated a pre-operative risk score in over 10,000 patients undergoing orthopaedic surgery. This comprises of seven simple variables which can be used to identify high risk patients pre-operatively and have developed this into an App to facilitate use. I will describe how we have implemented the use of this App with a simple intervention bundle in patients deemed high risk and review the evidence surrounding perioperative optimisation to prevent AKI.

Reference

1. Risk of postoperative acute kidney injury in patients undergoing orthopaedic surgery-development and validation of a risk score and effect of acute kidney injury on survival: Observational cohort study. *BMJ*. 2015 Nov 11;351:h5639.
Samira Bell, Friedo W Dekker, Thenmalar Vadiveloo, Charis Marwick, Harshal Deshmukh, Peter T Donnan, Merel Van Diepen

Dr David Bogod



*Consultant Anaesthetist
Nottingham University Hospitals NHS Trust*

David is a consultant obstetric anaesthetist in Nottingham and is a past President of the Obstetric Anaesthetists' Association, former Editor-in-Chief of 'Anaesthesia' and has served as a Deputy Coroner. He moonlights as a busy medicolegal practitioner, and has associated interests in risk management, human factors and safety. He has given over 800 reports for claimant and defence solicitors in negligence claims, as well as advising Trusts, Coroners, the GMC and Department of Health. He is currently a Council Member of the Royal College of Anaesthetists.

"Medicolegal Aspects of Nerve Blocks and Nerve Damage"

While neuraxial, local and regional anaesthesia are undoubtedly safer than general anaesthesia, especially in the obstetric setting or when dealing with patients with co-morbidities, they do appear to generate a disproportionately high rate of medicolegal claims. These range from pain felt during Caesarean section, the commonest major successful claim against anaesthetists, to those more of relevance to orthopaedic anaesthetists.

In this talk, I will consider the standard of care required to protect the anaesthetist from negligence claims. The question of consent will then be covered, with particular emphasis of the added burdens imposed by the recent Montgomery ruling.

Major neurological injury related to epidural abscess and haematoma should be entirely preventable, but this relies on careful monitoring and early detection, which sadly sometimes fail in practice. Subsequent outcomes can be disastrous and life-changing and are rarely defensible. Nerve blocks, especially brachial plexus blocks, have led to a variety of complications, including inadvertent spinal anaesthesia and long-term nerve damage. In such cases, the necessity for the block as part of an analgesic plan, the explanation of risk offered when seeking consent, the technique used, the drugs employed, and the aftercare will all come under scrutiny.

Finally, there have been some disturbing cases where a progressive chemical arachnoiditis has followed on from seemingly innocuous spinal anaesthesia. Unravelling these rare but severe complications is a work in progress, and it is a matter for debate whether the legal processes have been a help or a hindrance in this.

Dr James French
BMedSci, BMBS, FRCA, EDRA



*Consultant Anaesthetist
Nottingham University Hospitals NHS Trust*

Dr French has been a Consultant Anaesthetist in Nottingham since April 2009. He is a generalist with a sub-specialty interest in Regional Anaesthesia. He graduated from Nottingham University in 1998 undertaking his training within the East Midlands (including a Regional Anaesthesia fellowship at Nottingham's Queen's Medical Centre). His clinical interests include orthopaedics (mainly shoulders) plus breast and urological cancer surgery. He sees development and training in ultrasound-guided regional anaesthesia as an important part of his expert practice. He was part of the team instrumental in producing "Stop Before You Block", an international initiative to reduce the incidence of wrong-sided blocks.

Mr John M Geoghegan
**BMedSci, BM BS, MRCS Ed, FRCSEd
(Tr & Orth)**



*Clinical Lead for Elective Shoulder and Elbow
Surgery
The Nottingham Shoulder & Elbow Unit,
Nottingham City Hospital*

Qualified Nottingham University Medical School in 1997. Trained in Nottingham before completing an upper limb fellowship at the Wrightington Upper Limb Unit in 2008. Appointed Consultant Trauma and Orthopaedic Surgeon, Nottingham University Hospitals NHS Trust in 2009. Sub-speciality: shoulder and elbow surgery. Clinical lead for elective shoulder and elbow surgery at The Nottingham Shoulder & Elbow Unit, Nottingham City Hospital and the clinical lead for shoulder trauma at the East Midlands Major Trauma Centre, Queens Medical Centre. Member of the National Centre for Sports and Exercise Medicine at Loughborough University. Surgical practice includes primary, complex and revision shoulder arthroplasty in the young and elderly, large arthroscopic and trauma practice.

"Awake Shoulder Surgery: How to do it"

In this talk we will be describing how we go about operating on the awake patient. We will move beyond the science of surgery and anaesthesia and outline our approach to the art of 'awake shoulders'. We will explain the various surgical, patient and anaesthetic issues that need to be addressed before this can even be considered to be standard practice in any unit, and finish with a description of how we manage our cases. We aim to pass on some of the clinical pearls that have come from the Nottingham Shoulder and Elbow Unit's fifteen or more years of developing this practice, especially describing some of the pitfalls that need to be avoided. Not every surgeon can operate on the awake patient, and not every anaesthetist can provide this service, but we hope to show how a team-based approach can help turn this practice into an effective and educational standard of care...

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Poster Presentations

The Effect of the Combination of Pregabalin and Dexmedetomidine on the Management of Postoperative Pain in Patients Undergoing Total Knee Arthroplasty (TKA) or Total Hip Arthroplasty (THA) under Spinal Anaesthesia: A Double Blind Randomized Controlled Study

Cheol Lee, M.D., Ph.D. and Gilho Lee M.D, Department of Anesthesiology and Pain Medicine, Wonkwang University School of Medicine, Iksan, South Korea.

Launching an anaesthetic information leaflet to promote 'awake surgery' for patients undergoing specialist hand trauma surgery in London

R. Shah and M. Smith, Department of Anaesthesia, Royal Free Hospital NHS Foundation trust, London, UK.

Feasibility of spinal prilocaine for knee arthroplasty.

R. J. Erskine and G Geutjens, Royal Derby Hospital, Derby, UK

Audit into analgesia and pain control following day case foot and ankle surgery at a day surgery unit in West Lothian.

Dr Audrey Jeffrey, Dr Karen Watson, Dr Jennifer Proc and Dr Nicholas Fletcher, St John's Hospital, Livingston, UK

Orthopaedic surgery and the use of critical care

F. Atkinson and A. Carney, Nottingham City Hospital, Nottingham, UK

'Joint School' More than just a chat

Tomlin R., Raithatha M., Gribble A., Sanapala S. and Jigajinni S., Whipps Cross University Hospital.

An evaluation of critical care transfers from the Royal Orthopaedic Hospital following major complex surgery

B. Smith, T. Sutherland, S. Panchakshariah and L. Jeys, Anaesthetic Department, Royal Orthopaedic Hospital, Birmingham, United Kingdom.

Survey of Anaesthetic Techniques for Knee Arthroplasty: At British Society of Orthopaedic Anaesthetists (BSOA) Annual Meeting November 2017

B. Smith, O. Williams, R. Hutton, L. McFarlane-Majeed and E. DaSilva, Royal Orthopaedic Hospital, Birmingham, United Kingdom.

Rib fracture management guidelines aiming to improve silver trauma care

R. Sykes, S.J. Cheuk and C. Shevlin, Craigavon Area Hospital, Portadown, Northern Ireland, UK

Using the clinical governance process to conduct a retrospective analysis of bone cement implantation syndrome.

S. Daly, R. Hart and M. MacMillan, Queen Elizabeth University Hospital, Glasgow, Scotland.

Anaemia pathway for elective orthopaedic surgery patients

Dr Kunal Targe, Dr Vishal Thanawala, Nottingham University Hospital NHS Trusts, Nottingham, UK.

Blood conservation strategy, do we stop the bleeding, replace the blood loss, or do both?

A. Sell, J. Donaldson and R. Baumber, Royal National Orthopaedic Hospital, Stanmore, UK.

Arthroscopic shoulder surgery – improving patient experience and promoting the use of regional anaesthesia

H. Jothiraj, R. Wand, S. Sanapala, S. Chitre and S. Jigajinni, Whipps Cross University Hospital, London, UK

Developing a day case Shoulder Arthroscopy service

R.Chavda, K.Targe and R.Kapila, Nottingham City Hospital, Nottingham

Total knee replacement on a patient with systemic mastocytosis

Dr Asis Behura and Dr G Dasputre, PRH, Telford

Experience based design: Issues faced by the medical/diabetes ward with patients booked for surgery.

V. Patel and J. Vernon, Nottingham University Hospitals, Nottingham UK

The Effect of the Combination of Pregabalin and Dexmedetomidine on the Management of Postoperative Pain in Patients Undergoing Total Knee Arthroplasty (TKA) or Total Hip Arthroplasty (THA) under Spinal Anaesthesia: A Double Blind Randomized Controlled Study

Cheol Lee, M.D., Ph.D. and Gilho Lee M.D.

Department of Anaesthesiology and Pain Medicine, Wonkwang University School of Medicine, Iksan, South Korea.

Background

Pregabalin and dexmedetomidine have been introduced to manage postoperative pain. The present study aimed to evaluate the effect of the combination of two drugs on pain relief in patients undergoing total knee or hip arthroplasty.

Methods

124 patients undergoing total knee or hip arthroplasty under spinal anesthesia were randomly assigned to either group C (n = 31, placebo), group P (n = 33, pregabalin), group PD (n = 29, pregabalin and dexmedetomidine) or group D (n = 31, dexmedetomidine). One hour before spinal anesthesia, patients received pregabalin 150 mg or placebo orally and a bolus dose of 0.5 µg/kg IV dexmedetomidine was given over 10 min before induction of spinal anesthesia, followed by a continuous infusion of 0.5 µg/kg/hr or the same calculated volume of normal saline till completion of the surgery. Clinically relevant pain for 24 hours after surgery including time to first analgesic request, visual analog scale (VAS), ketorolac dose, and patient-controlled analgesics (PCA) volume consumed were recorded

Results

Time to first analgesic request, VAS at rest and on movement, ketorolac dose, PCA volume for the first 24 hours after surgery were significantly longer or higher in group C than other groups. Although Group PD and group D were better than group P in clinically relevant pain, two groups who received dexmedetomidine were not significantly different.

Conclusion

Group D was better than group P in clinically relevant pain. Group PD who received combination of pregabalin and dexmedetomidine had no synergic effect compared to group D.

References

1. McDonald LT, Corbiere NC, DeLisle JA, Clark AM, Kuxhaus L. Pain Management After Total Joint Arthroplasty. *AORN J.* 2016;103: 605-16
2. Gaffney CJ, Pelt CE, Gililand JM, Peters CL. Perioperative Pain Management in Hip and Knee Arthroplasty. *Orthop Clin North Am.* 2017; 48: 407-19.
3. Fujita N, Tobe M, Tsukamoto N, Saito S, Obata H. A randomized placebo-controlled study of preoperative pregabalin for postoperative analgesia in patients with spinal surgery. *J Clin Anesth.* 2016; 31: 149-53.

Launching an anaesthetic information leaflet to promote 'awake surgery' for patients undergoing specialist hand trauma surgery in London

R. Shah and M. Smith

Department of Anaesthesia, Royal Free Hospital NHS Foundation trust, London, UK.

Preoperative information has been shown to reduce the anxiety of patients undergoing surgery under regional anaesthesia and improve patient experience [1]. Patient information leaflets are a useful source of information, which may provide an overview of the conduct of anaesthesia, and types of nerve block routinely performed.

The Royal Free Hospital offers a seven day service for patients who sustain injuries to the hand and forearm. Commonly these patients will be booked for restorative surgery within 48 hours from initial consultation. We investigated whether patients received pre-operative information about the anaesthetic options available for their surgery, with view to introduce a new anaesthetic information leaflet at initial consultation with the surgical team to promote 'awake surgery'.

Methods

We performed a prospective survey on information patients received prior to the day of surgery, and overall satisfaction. We used this information to design a new patient information leaflet with details on benefits of regional anaesthesia, alternative options to a nerve block (general anaesthetic with systemic analgesia), process of performing a nerve block and associated risks, and useful contact numbers for further information.

Results

We surveyed 50 patients booked for day-case hand surgery over a two week period and found 5 (10%) patients were given information about the conduct of anaesthesia, 6 (12%) patients were informed about an 'awake' surgery option, 2 (4%) patients were explained benefits of regional anaesthesia, 2 (4%) patients were explained potential risks of general and regional anaesthesia prior to the day of surgery. 42 (84%) patients would have preferred to receive this information prior to the morning of surgery, with only 18 (36%) patients having 'awake surgery'. Three months after introducing our new patient information leaflet, we re-audited practice in 50 patients and found that patient knowledge and satisfaction had significantly improved, with 39 (78%) patients requesting and receiving 'awake surgery' through regional anaesthesia. These patients had a faster recovery and discharge from hospital.

Discussion

Regional nerve blocks are effective anaesthetic techniques for patients undergoing upper limb surgery. Like all procedures in anaesthesia, they are associated with certain inherent risks and complications. Our opening cycle results show that our patients did not receive information about the different anaesthetic options prior to the day of surgery. Providing this information in a user-friendly leaflet form has been shown to reduce anxiety and improve patient experience. We plan to continue re-auditing the quality and usefulness of the information provided to the patient, with view to increasing the proportion of patients receiving 'awake surgery'

References

1. Jjala HA, French JL, Foxall GL, Hardman JG, Bedfordth NM. Effect of preoperative multimedia information on perioperative anxiety in patients undergoing procedures under regional anaesthesia. *Br J Anaesth.* 2010;104:369-374

Feasibility of spinal prilocaine for knee arthroplasty.

R. J. Erskine and G Geutjens
Royal Derby Hospital, Derby, UK

Rapid return of function following spinal anaesthesia for knee arthroplasty is an important part in our enhanced recovery regime. This has been partially addressed by the use of dilute or low dose bupivacaine with or without opioid supplementation[1]. However prolonged block and inadequate intraoperative analgesia may occur requiring interevent. Spinal 2% hyperbaric prilocaine is gaining popularity in day case surgery and can provide 90 minutes of profound analgesia whilst allowing rapid return to street fitness and reduced incidence of urinary retention[2]. We have used spinal prilocaine for over 2 years for knee arthroplasty and present the first 100 in our series focussing on length and quality of anaesthesia.

Methods

One hundred consecutive patients having Total(T), Unilateral(U) or patello-femoral(PF) primary knee arthroplasty performed by the same consultant surgeon. All received ERAS premed of oral Paracetamol 2g +/- Ibuprofen MR 800mg and Oxycodone 5 or 10mg. 2.8-3.2ml 2% hyperbaric spinal prilocaine was used for all patients. All patients received an adductor canal nerve block of 5ml 0.75% levobupivacaine in the anaesthetic room. Surgical infiltration of the knee capsule of 100ml 0.125% levobupivacaine was used prior to wound closure. Intra-operative sedation was only employed in patients where non-pharmacological approach was inadequate. Intra-operative supplementation of analgesia was recorded. Surgical time was defined as time of injection of spinal anaesthetic to application of dressing. Tourniquet time and any procedural pain or supplementation of analgesia was recorded. Median and interquartile range were calculated.

Results

All patients had an adequate spinal block for commencement of surgery, 1 required a repeat of the spinal in the anaesthetic room.

Table 1 Surgical and tourniquet time (minutes), median and interquartile range (IQR)

Group(n)	Surgical time		Tourniquet time	
	Median	(IQR)	Median	(IQR)
U (44)	62.5	(57-67)	46.5	(43-50)
T (42)	77.5	(67-89)	59	(48-72)
PF (14)	62	(57-71)	46.5	(41-49)

One in group U required Alfentanil 500mcg for pain on incision with no further intervention. Two in group T required Alfentanil at 50 and 60 minutes respectively for tourniquet pain. Four patients in group U and one in group T received Propofol sedation for anxiety. No patients required conversion to general anaesthesia. Two patients required in/out catheterisation for retention of urine.

References

1. Ben-David B, Solomon E, Levin H, Admoni H, Goldik Z. Intrathecal fentanyl with small-dose dilute bupivacaine: better anesthesia without prolonging recovery, *Anesth Analg*, 1997, vol. 85 (pg. 560-5)
2. [Boublik J](#)¹, [Gupta R](#)², [Bhar S](#)³, [Atchabahian A](#)⁴. Prilocaine spinal anesthesia for ambulatory surgery: A review of the available studies. [Anesth Crit Care Pain Med](#). 2016 Dec;35(6):417-421

Audit into analgesia and pain control following day case foot and ankle surgery at a day surgery unit in West Lothian.

*Dr Audrey Jeffrey, Dr Karen Watson, Dr Jennifer Proc and Dr Nicholas Fletcher
St John's Hospital, Livingston, UK*

Day case and short-stay surgery is an increasingly diverse field, with more procedures and more patients being considered suitable for day case surgery [1]. In the field of orthopaedics, day surgery empowers patients to mobilise sooner after surgery and to manage their own pain [2]. However, between 40-70% of patients report poor post-operative pain relief, possibly more-so after "minor" procedures [2]. We present an audit undertaken in 2016 of post-operative pain and analgesia following day-case foot and ankle surgery. This followed a similar audit in 2013 and the subsequent introduction of local guidelines on pain relief for orthopaedic day case surgery. These aimed to assist anaesthetists to choose effective regional local anaesthetic blocks and multimodal analgesia for use perioperatively and following discharge.

Methods

Patients were recruited on the day of surgery at the time of pre-operative assessment. Inclusion criteria were those patients undergoing general anaesthesia for elective foot and ankle surgery who were admitted on the day of surgery. Consent was gained for information to be taken for audit purposes from the medical notes and for the patient to be contacted by the auditors by telephone the day after discharge. Data collected peri-operatively included demographics, type of operation, regional anaesthetic technique, perioperative analgesia, discharge analgesia and date of discharge. Following discharge, patients were contacted by telephone and asked a set series of questions about their experience following discharge, including what analgesia they had used following discharge, whether they had been woken up by pain, whether pain had prevented them sleeping, whether they felt that they had adequate analgesia, whether they felt confident to manage their pain going forwards and whether they had had problems with nausea and vomiting.

Results

One hundred and one (101) patients were recruited to the audit. Sixty-seven patients (66%) were female and 34 (34%) were male. The age range was 20 – 78 years with a mean age of 54 years. Seventy-five patients (74%) had forefoot procedures, 17 patients (17%) had ankle procedures and 9 patients (9%) had hindfoot procedures. Eighty-seven (86%) patients had either local anaesthetic infiltration or a regional block. Eighty-four patients (83%) were discharged on the day of their operation. Twenty-nine patients (29%) reported being awoken by pain the night after discharge, whilst 23 patients (23%) reported being unable to sleep due to the pain. However, 90 patients (89%) thought that they had adequate analgesia and 96 patients (95%) were confident to manage their pain going forward. Eighteen patients (18%) reported some problems with nausea and vomiting. These results compare favourably with the results from the previous audit cycle in 2013. In particular, more patients were discharged on the day of procedure (83% in the 2016 audit vs 50% in 2013), fewer patient were woken up by pain (29% in 2016 vs 65% in 2013) and more patients felt that they had adequate analgesia (89% in 2016 vs 70% in 2013), and a similar number had problems with nausea and vomiting (18% in 2016 vs 16% in 2013).

References

- 1) Verma R, Alladi R, Jackson I, et al. Day case and short stay surgery. (accessed at <https://www.aagbi.org/sites/default/files/Day%20Case%20for%20web.pdf>)
- 2) Liza Tharakan, Peter Faber; Pain management in day-case surgery

Orthopaedic surgery and the use of critical care

F. Atkinson and A. Carney
Nottingham City Hospital, Nottingham, UK

Orthopaedic surgery can greatly improve a patient's quality of life. However, these patients are often elderly and co-morbid and are at risk of a wide range of complications [1]. Research suggests that orthopaedic patients represent an increasing proportion of intensive care patients [2]. It was noted at our hospital that some orthopaedic patients booked for critical care faced on the day operation cancellations due to lack of capacity in critical care. We therefore, wanted to examine our orthopaedic department's use of critical care in post-operative surgical patients.

Method

The critical care department provided information regarding orthopaedic patients booked for critical care, and any cancellations or unplanned admissions over a six month period from October 2017 to March 2018. Using the hospital's digital health record system further information could be obtained including patient demographic information, co-morbidities, pre-operative assessment and reasons for critical care admission.

Results

Over the six month period, there were 54 critical care beds booked for orthopaedic patients. Of these, 17 patients were admitted to critical care (31%), 14 patients were cancelled (26%) and 23 patients had critical care beds booked that were not required (43%). There were also four unplanned admissions. Of the 23 patients with beds booked that were not required, 15 of these patients (65%) had an anaesthetic review by a consultant anaesthetist in the pre-op assessment clinic, 6 patients had a notes review in the clinic, and only 2 had no pre-operative review.

The patients requiring a critical care bed had an average age of 67 and an even sex split. The average ASA grade was 2.6 and the average number of co-morbidities was 3.7. Most critical care beds were booked due to patient co-morbidities (89%). Obstructive sleep apnoea (OSA) was the commonest reason for critical care booking followed by cardiovascular co-morbidities. Thirty patients (56%) had OSA and 24 of these patients (44%) had untreated OSA or were unable to tolerate continuous positive airway pressure (CPAP) treatment. Of note, 74% of patients booked for critical care had a BMI ≥ 30 . This work demonstrates that nearly half of all orthopaedic critical care beds that are booked are not required which is an area for further investigation in order to improve efficiency. OSA and especially untreated OSA, presents a massive and rising burden for orthopaedic surgical patients.

References

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doi: 10.1097/01.CCM.0000231880.18476.D8

'Joint School' More than just a chat

*Tomlin R., Raithatha M., Gribble A., Sanapala S. and Jigajinni S.
Whipps Cross University Hospital.*

Use of spinal anaesthesia is a cornerstone of many successful enhanced recovery programmes for primary hip and knee arthroplasty in the UK. In our unit however, a combination of high patient anxiety levels regarding spinal anaesthesia and unrealistic expectations regarding postoperative pain were often seen on the morning of surgery. Reported general anaesthesia rates were therefore high (>90%), with low rates of successful early post-operative mobilisation (<5% on day of surgery). In response we re-designed our multidisciplinary pre-operative patient education sessions - 'joint school', incorporating into the programme interactive talks lead by consultant anaesthetists and anaesthetic trainees. Patient attendance at the renewed joint school was also made a mandatory requirement prior to surgery.

Methods

Immediately prior to our intervention we surveyed a snapshot of post-operative patients regarding their experience and areas for improvement. Following this all patients awaiting primary hip and knee arthroplasty were asked to attend joint school. The programme comprised of multidisciplinary sessions covering surgery, physiotherapy, targets for mobilisation and discharge, rehabilitation and occupational therapy. Presentations covering anaesthetic choices, rationale behind spinal anaesthesia, and post-operative analgesia were then delivered at the end of the session. A strong emphasis was placed on motivation, the practicalities of being awake during surgery and a positive mind set. For a period of three months, all attendees were surveyed at the end of the session, and further follow up was performed post-operatively.

Results

Pre-intervention 17 patients were surveyed, 12 (70%) indicated that a joint school incorporating expert information regarding anaesthesia and pain relief would have improved their operative experience. Post intervention, 54 patients attended the mandatory joint school. The sessions were well received, all 54 patients expressed marked anxiety reduction regarding anaesthesia. Fifty (92%) of patients found the presentation regarding anaesthetic options very useful, and felt better informed afterwards. Forty four (82%) also felt better informed regarding post-operative pain relief and expectations. Twenty seven (50%) patients were successfully followed up post operatively. All felt the new joint school and anaesthetic education had improved their experience. Our general anaesthesia rates have since fallen dramatically. All patients now receive spinal anaesthesia unless there is a contraindication or procedural failure. Physiotherapists are now successfully mobilising >90% of cases on the day of surgery, and consistently report improved patient motivation and expectations regarding pain relief. The revised joint school, combined with the anaesthesia and analgesia education session, is now embedded in our new Enhanced Recovery Programme, and has been instrumental in our reduction in 'fit for discharge' time from a previous mean of five days down to three days.

An evaluation of critical care transfers from the Royal Orthopaedic Hospital following major complex surgery

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The Royal Orthopaedic Hospital (ROH) NHS Foundation Trust is one of five specialist orthopaedic hospitals in the United Kingdom. It carries out a wide range of major procedures including orthopaedic oncology, corrective spinal surgery and complex joint revision. As a standalone hospital it offers a level 2 High Dependency Unit for postoperative management but has no level 3 facility. If a patient requires on-going invasive ventilation, renal replacement therapy or significant cardiovascular support they require transfer to a level 3 unit. We set out to evaluate the case-notes of patients who, following major complex surgery, required a critical care transfer to identify clinical themes, with the aim to reduce the rate of future transfers.

Methods

We carried out a retrospective review of case-notes from patients, who following major complex surgery, had been transferred from the ROH to a level 3 critical care facility during a forty-month period between October 2014 and March 2018. Operations included in analysis were revision lower limb arthroplasty, oncological resections of the lower limb, pelvis and spine and corrective spinal surgery for scoliosis. The notes were reviewed taking account of patient age, co-morbidities, type of surgery, and the complication that arose leading to transfer.

Results

Overall 2715 major complex cases were carried out in this timeframe. The most commonly performed operations were distal femoral endoprosthesis replacement 559/2715 (20.6%) and posterior scoliosis correction 493/2715 (18.2%). From this cohort of patients 14 were transferred for level 3 care giving a transfer rate of 0.5%. Fifty percent of transfers took place on the day of the procedure and were related to immediate complications from anaesthesia or surgery. This included five cardiac arrests in the perioperative period. The most common postoperative complication that led to on-going critical care input was respiratory failure requiring ventilation (6/14) and multiple organ failure requiring ventilation and vasoactive medications (3/14). The median age for the transferred patients was higher than for the overall cohort (68 vs 49 years) with a higher proportion of patients with an ASA score of 3 (50% vs 13.8%). Higher co-morbidity burden in the transferred cohort is shown by a median Charlson Comorbidity index of 5; 13/14 had a score ≥ 3 which is associated with higher postoperative complication rates [1].

Conclusion

The rate of transfer from our centre following these major cases is low when compared to other centres [2]. Transfers occurred mainly in older, co-morbid patients and generally took place in the immediate perioperative period. To improve safety going forward patients should be risk-stratified preoperatively and counselled.

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Survey of Anaesthetic Techniques for Knee Arthroplasty: At British Society of Orthopaedic Anaesthetists (BSOA) Annual Meeting November 2017

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Total knee arthroplasty is a common and painful orthopaedic procedure [1,2]. Anaesthetic techniques have evolved with enhanced recovery programmes to improve postoperative pain control, aid in earlier mobilisation and reduce length of stay. Consensus in the literature regarding optimal anaesthetic technique is limited [2,3]. Therefore, we decided to survey a group of anaesthetists with a specialist interest in orthopaedic anaesthesia on preferred anaesthetic techniques, looking for consistent themes.

Methods

Questionnaires were handed out to delegates at the BSOA Annual Scientific meeting, Prague 2017. Data collected included country of anaesthetic practice and primary anaesthetic technique. For regional techniques, a breakdown of drug dosage and volume were requested.

Results

Fifty-two questionnaires completed out of 216 Delegates (24% return). Choice of primary anaesthetic technique showed preference for spinal anaesthesia with or without other nerve block 29/52 (55%). General anaesthetic was preferred by 20/52 (38%) of respondents with 40% also performing spinal anaesthesia. Adductor canal blocks were favoured over femoral and sciatic combinations (15 vs 3). Spinal anaesthesia was performed slightly more often with isobaric than hyperbaric bupivacaine (56% vs 36%) and with opioid more than without (66% vs 33%).

Conclusions

This survey mirrors current literature, that no single anaesthetic technique is preferred to any other. For spinal anaesthesia there was marked variation in the choice of drug and additives used. Adductor canal blocks appear to be used more often than femoral nerve blocks, probably related to recent literature showing similar analgesia with less quadriceps spasticity and earlier mobilization [4]. Whilst there is no perceived harm, is there mileage in standardisation of technique?

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Rib fracture management guidelines aiming to improve silver trauma care

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We describe an elderly patient who suffered significant chest wall trauma necessitating a number of critical care admissions for ventilatory support. We discuss the complications of rib fractures in the elderly and the significant benefits a rib fracture management protocol can confer when managing older patients.

Case Description

An 83-year-old female suffered extensive trauma when she became trapped under a car trailer. The patient's injuries included bilateral rib fractures with a flail segment from the sixth to ninth rib on the left side, left-sided pneumothorax, right-sided haemothorax, a sternal fracture and sixth to twelfth thoracic vertebrae transverse process fractures. The patient received bilateral chest drain insertions in the emergency department to good effect. However the patient became hypoxic, requiring significant supplemental oxygen. Pain was a significant factor in the patient's inability to deep breathe or cough effectively and hence her deterioration. Admission to intensive care was expedited. 24 hours after the injury, a thoracic epidural was inserted in an effort to optimise analgesia. Unfortunately the patient decompensated and required intubation and ventilation for a period of six days before successfully extubating. The patient continued to have issues with effective expectoration and a further admission to the high dependency unit was required for non-invasive ventilation. The patient survived to discharge and is undergoing rehabilitation.

Outcome

A rib fracture management pathway was developed in an effort to encourage timely intervention that may prevent unplanned admissions to the intensive care unit and improve patient outcomes. The pathway begins by emphasising the importance of treatment within the first 24 hours of presentation. It instructs the user to perform an immediate risk assessment to identify those at risk of decompensation, particularly the elderly, with directions to inform the anaesthetist early in the admission. The pathway prompts users to prescribe non-opioid and opioid analgesia within the first hour of diagnosis along with regular nebulised saline and stress ulcer prophylaxis. Non-pharmacological management is encouraged including acute pain service referral, physiotherapy, mobilisation and oxygen therapy guided by peripheral saturations.

Discussion

The trauma audit and research network published their report on major trauma in older people in 2017 [1]. This highlighted a large increase in the number of older patients suffering major trauma that were previously hidden in the national dataset. With the number of people in the United Kingdom aged 65 or greater set to increase by 50% by 2030, this demographic will be vast. Our institution, like many district generals had an underdeveloped system for identifying older people who had suffered major trauma. Patients were therefore unlikely to receive timely interventions to prevent complications of their injuries, particularly with rib fractures. The case described serves to highlight the severity of trauma that an elderly patient can suffer, and the complications that may arise. Out of this, and other similar cases, a local protocol for managing rib fractures at an early stage during admission was created. This aims to provide adequate analgesia, so that the patient can take deep breaths, cough and engage with physiotherapy. This aims to prevent decompensation and prevent unplanned admission to intensive care.

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Using the clinical governance process to conduct a retrospective analysis of bone cement implantation syndrome.

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Bone cement implantation syndrome (BCIS) is a devastating event with profound morbidity and mortality. BCIS is more likely to occur in elderly patients, especially those with cardio-respiratory comorbidities. The use of cement in frail patients has increased over recent years due to the poor functional outcomes associated with uncemented hemiarthroplasties. In our department all patients who suffer suspected BCIS are captured by our morbidity and mortality review process. In this audit we aim to analyse these cases in an attempt to identify any common themes and whether these patients have different demographics to our baseline hemiarthroplasty patients.

Methods

In our hospital all critical incidents and mortalities are recorded via an electronic online portal. Patients that developed BCIS were identified from this database over a two-year period. This allowed retrospective analysis of electronic patient case notes. A data collection tool was devised based upon high risk factors for BCIS. We subsequently repeated this process for all patients undergoing emergency hemiarthroplasty over a two-week period between to serve as a baseline.

Results

Figure 1: Comparison of BCIS and Baseline Cohorts.		
	BCIS Group (n=9)	Baseline Group (n=14)
Median age (years)	87	82
Significant cardiorespiratory disease	55%	20%
On diuretic therapy	11%	73%
Male	22%	33%
Arterial line inserted	33%	6%

Of the 9 patients who suffered BCIS, 8 did not survive. The BCIS group has a higher rate of cardiorespiratory co-morbidities, although this is a small dataset. Diuretic therapy was not highly represented in the BCIS group compared to baseline. Arterial lines were utilised in one-third of patients in the BCIS group and only 6% in the baseline group. Surgical documentation was shown to be excellent with 100% compliance in the both the BCIS group and baseline.

Discussion

Although exceptionally rare, our robust clinical governance process has allowed quantification and subsequent analysis of suspected BCIS. Our data has failed to highlight any striking differences between the baseline group of patients undergoing hemiarthroplasty and those who ultimately suffer BCIS. This suggests that BCIS is difficult to predict and reinforces the need for constant vigilance when caring for patients undergoing emergency hemiarthroplasty.

This project has been aligned with local quality improvement measures which has allowed the development of a high risk BCIS bundle, mirroring the AAGBI hemiarthroplasty guidelines^[1]. We believe this work will support our aims to ensure that patients undergoing emergency hemiarthroplasty receive the highest quality care. This is particularly important considering this cohort have a high baseline risk in addition to the further physiological burden of cementation.

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Anaemia pathway for elective orthopaedic surgery patients

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Currently there is a lack of pragmatic guidance for the diagnosis and management of anaemia and iron deficiency in surgical patients. We developed a local pathway and guidance for the identification of anaemia and its treatment for elective orthopaedic patients undergoing major surgeries. It is in line with the International consensus statement on peri-operative management of anaemia and iron deficiency and we have incorporated some changes relevant to the local population and the haematology laboratory services [1]. This pathway is a collaborative and team effort involving preoperative assessment unit, anaesthetists, haematologist and Renal outpatient department. A similar audit was conducted in 2017 which used 130g/L as cut off value of haemoglobin for both males and females undergoing major orthopaedic surgery and we have compared the results from both the audits.

Method: All patients coming for orthopaedic pre-operative assessment and scheduled for arthroplasty or any other major surgery were included in the audit and we performed a prospective data collection for a period of one month. FBC was requested as per the protocol and NICE guidelines and results checked the next day by the clinic nurse. Males with Hb < 130 gm/l and females with Hb < 115 gm/l had further Iron studies (Ferritin level, Transferrin Saturations and CRP) requested from the existing blood samples sent the previous day. We had a total of 323 patients who attended the clinic with 166 scheduled for major orthopaedic surgery. 25 patients were found to be anaemic as per the agreed guidance. They were then further classified into 3 sub-groups depending upon type of anaemia to enable us plan the appropriate work up and treatment as per the pathway.

- 1) Patients with Ferritin <30 mg/L and Transferrin saturation < 20% → Iron deficiency anaemia (IDA) → Referred to GP for commencement of oral iron therapy and repeat FBC/Iron study in 4 weeks. If intolerant to oral iron or Hb increase <50% of deficit (Target Hb - Actual Hb pre-treatment) then refer for IV iron.
- 2) Patients with Ferritin 30-100mg/L, Transferrin saturation > 20% and CRP < 5 → Anaemia of chronic inflammation with iron deficiency → Treatment similar to group 1.
- 3) Patients with Ferritin > 100mg/L, Transferrin saturation > 20% and CRP < 5 → Patients referred for 1 gm IV iron.
- 4) IV iron therapy was prescribed by the Anaesthetist in the orthopaedic pre-assessment clinic and administered by the Renal Outpatients department at Nottingham city Hospital.

If the patients had normal Iron studies in the presence of anaemia, then we performed Vitamin B12 and folate levels as part of further work up and treated them accordingly or referred them to a Haematologist for specialist opinion in case of normal vitamin levels.

Results: 25 patients (15%) found to be anaemic (15 males & 10 females) which were similar to the previous audit.

- IDA - 4 patients (8),
- Anaemia of chronic inflammation with iron deficiency - 6 patients (10)
- Anaemia of chronic inflammation - 9 patients (1),
- Megaloblastic and other anaemias - 6 patients (6).

* Numbers in bracket are results from previous audit.

The pathway has helped to streamline the pre-operative optimization of patients coming for major elective orthopaedic surgery by providing them with an efficient and friendly service and has increased the productivity of the pre-operative unit.

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Blood conservation strategy, do we stop the bleeding, replace the blood loss, or do both?

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The most common reason for transfusion after primary knee arthroplasty is preoperative anaemia. The wider healthcare community has taken far too long to address this, but now this is being actively managed. Whilst this has led to a reduction in transfusion [1] we still need to look at ways to reduce blood loss and the incidence and severity of post-operative anaemia.

Methods

We looked at 150 consecutive primary knee replacements between January and June 2017, this was granted institutional approval by the audit department. For this audit we concentrated on blood conservation techniques used at our institution, to see which techniques, if any had an effect on post-operative haemoglobin (Hb). All records were examined, preoperative and day 1 haemoglobin, dose of tranexamic acid (TXA) and use of autologous re-infusion drain were documented. We therefore looked at the change in haemoglobin on day 1 post-op compared with the preoperative value, the patients were grouped as to whether or not they had tranexamic acid or not or whether they had an autologous drain transfusion. Drain information was missing in 14 patients. The groups were compared using the Wilcoxon signed rank test.

Results

The table below shows the drop in haemoglobin comparing groups of patients with different blood conservation strategy.

	Min	1 st Quart	Median	Mean	3 rd Quart	Max	P value
TXA given 62 (41.33%)	5	19.25	24.5	25	32	57	0.043
No TXA 82(58.67%)	5	21	28	28.89	37	61	
Reinfusion drain 68 (50%)	8	20	26	27.85	36	58	0.89
No reinfusion 68(50%)	5	20	28	27.4	34	61	
TXA and reinfusion 11(8%)	8	19.50	25	25.45	31	45	0.99
TXA & no reinfusion 41(30%)	5	20	25	25.32	32	57	
No TXA & reinfusion 57(42%)	9	20	28	28.32	36	58	0.37
No TXA & no reinfusion 27(20%)	5	26	29	30.56	38	61	

As can be seen from the table the only intervention that made a statistically significant difference to blood loss in the first 24 hours is tranexamic acid. What can also be seen is that if a patient was given tranexamic acid they were less likely to receive a drain reinfusion. ($p < 0.001$ using χ^2 test)

Discussion

Whilst the starting Hb is the most significant factor in avoiding allogenic blood transfusion, restrictive transfusion practice now means this is the wrong outcome to measure and we should be concentrating on strategies to provide the post-operative patient with the highest Hb

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Arthroscopic shoulder surgery – improving patient experience and promoting the use of regional anaesthesia

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Orthopaedic surgeons in our unit request the use of interscalene brachial plexus blockade (ISB) for arthroscopic shoulder surgery. Reasons cited include: excellent analgesia, reduced opioid side effects [1], early pain free passive mobilisation facilitating active rehabilitation [2] and timely hospital discharge. Despite this, in our unit many patients are still not offered an ISB. Reasons cited by anaesthetists include: no perceived benefit, rebound hyperalgesia on block regression and lack of operator experience. We sought to quantify the benefits by following up a sample of patients in our unit who did receive ISBs for arthroscopic shoulder surgery, and subsequently implement training to improve ISB and regional anaesthesia (RA) skills and utility.

Methods

We gathered data over six months on 50 elective arthroscopic cases receiving an ISB and general anaesthesia. Patients were followed up in recovery, at 24 hours and 48 hours. Data including pain scores, discharge timings and patient experience were collected.

Results

Cases: rotator cuff repair (RCR) - 8 (16%), subacromial decompression (SAD) - 8 (16%), SAD + RCR - 18 (36%), arthroscopic stabilisation - 6 (12%), arthroscopic capsular release - 4 (8%), SAD + acromioclavicular joint excision - 6 (12%). Recovery: pain and nausea scores of zero - 47 (94%); block failure requiring intravenous opioids in recovery, and mild nausea - 3 (6%); time spent in recovery - mean 42 (19) mins. Discharge: same day discharge - 37 (74%); overnight admission - 13 (26%), typically planned, however one failed block case was admitted for pain control. Time from operation end to hospital discharge (day cases) - mean 180 (47) mins. Post-operative pain scores at 24h: no pain - 12 (24%), mild pain - 18 (36%), moderate pain - 18 (36%), severe pain - 2 (4%), both of these cases experienced block failure in recovery. Post-operative pain scores at 48 hours: no pain - 13 (26%), mild pain - 24 (48%), moderate pain - 11 (21%), severe pain - 2 (4%), same two cases as above. No patients represented to hospital and there were no major complications. Anaesthetic experience: 42 (84%) were not expecting an ISB on the day of surgery; 21 (42%) felt anxious after the ISB was explained; 33 (66%) indicated they would 'definitely' have preferred information regarding ISB prior to admission; on 48h follow up, 49 (98%) however indicated they were glad they had an ISB and would have one again; all 50 (100%) reported high satisfaction scores; 10 (20%) had previous shoulder surgery without an ISB, and indicated a much improved experience this time around. We successfully demonstrated: a high level of patient satisfaction, early discharge and manageable post-operative pain following ISB for shoulder surgery. In response to our findings, in consultation with a patient focus group, we have produced an information leaflet to improve patient preparation for ISB. Additionally, to improve regional anaesthesia training in our unit, we have initiated a monthly teaching programme - 'Scanning Club', open to all grades of anaesthetists. Following our project and interventions, we have now been able to establish ISB as routine practice for all shoulder surgery in our unit.

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Developing a day case Shoulder Arthroscopy service

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Managing pain following arthroscopic shoulder surgery has been a stumbling block to same day discharges. We looked at analgesic options to facilitate a transition to a day case service, without compromise to post-operative care and patient satisfaction. By optimising the discharge analgesia for these patients, we have helped to relieve some of the bed pressures faced by elective orthopaedics.

Methods

We had previously shown that discharge on Co-codamol had led to poor post regional anaesthesia pain control, sleep disturbance and patient readmissions due to acute pain. We achieved prior pharmacy approval to supply Oramorph as a discharge medication alongside simple analgesia. We then conducted telephone follow up on 39 patients, collecting pain scores according to the same protocol used when Co-codamol was the discharge analgesic of choice.

Results

All patients had received an Interscalene block with Ropivacaine or L-Bupivacaine. Patients in both cohorts were comparable with regards to age, sex and the surgical procedure being carried out. All patients were satisfied with the regional anaesthesia in both cohorts. Our results showed a significant reduction in average pain scores experienced by those patients who were discharged with Oramorph. On day two average pain scores greater than seven decreased from 20% to 7.7% and on day three from 7.5% to 2.6%. This was in line with a reduction in the number of patients using Oramorph which decreased from 46.2% on day 1 to 28.2% on day three. Sleep disturbance associated with pain also decreased across the three days.

Discussion

Same day discharge following Arthroscopic shoulder surgery requires good post-operative analgesia once the regional anaesthesia wears off. Our follow up audit shows that the addition of Oramorph to discharge medications has helped the transition to a successful day case service.

Total knee replacement on a patient with systemic mastocytosis

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We came across a 60 yrs. old patient in the pre-op assessment unit who was planned to have a total knee replacement. This patient was recently diagnosed with Systemic mastocytosis with 6 months history of flushing and rash. This is a condition where mast cell degranulation can occur at the slightest trigger including anxiety and stress leading to catastrophic consequences. The risk of anaphylaxis was recognised, and precautions taken to help him have the procedure done safely. He had the procedure done under spinal anaesthetic with sedation. Post operatively he had red flush and itching. He required only anti-histamine and low dose naloxone. He was admitted to the HDU for overnight monitoring.

Experience based design: Issues faced by the medical/diabetes ward with patients booked for surgery.

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Diabetes is likely to consume at least 10% of NHS spending. Frequent diabetic complications are foot ulcers and infections. These may result in amputation, disability and prolonged hospital stay. In our hospital these patients are managed on a medical/diabetic ward. This experience-based design (EBD) project looked at issues faced medical, nursing teams and patients in regards to patients going to theatre.

Methods

Previously in 2012 consultant JV used a structured interview with nurses, doctors, ward staff and patients to identify problems related to patients having surgery. A detailed information sheet for staff, drug information for surgical patients, and instructions for list interpretation and preparation for theatre. This was circulated and used on the ward.

This EBD process was repeated in 2018 by VP. As a result, previous guidance has been revised, a wall chart produced summarising this, adding flow charts to instruct medical staff on perioperative diabetic management (from official NUH guideline).

Results

Junior doctors have rotated through the ward each four months needing to be informed on the perioperative care of these patients. Nursing staff were frustrated with difficulty in access operating list and predicting fasting and time to operation, which could be annoying for patients. A large poster summarising perioperative care issues and management was produced in a format that may be updated when needed. Further interviews to evaluate this will be conducted and improvements made as indicated.

Discussion

This project has resulted in the introduction of an informative source of advice and knowledge for the perioperative care of diabetics.

BRITISH SOCIETY OF ORTHOPAEDIC ANAESTHETISTS

Oral Presentations

Improving trauma services in a district general hospital

S. Abbott, I. Abdalaziz and H. Jenkins, West Middlesex University Hospital, London, UK.

Obstructive sleep apnoea in elective orthopaedic patients.

S. Aggarwal, V. Thanawala and J. Bonnington, Nottingham City Hospital, Nottingham, UK

INCIDENCE and management of VTE during pre-operative workup for patients with metastatic bone tumours – a tertiary referral hospital experience.

R. Anker, C. Gray Stephens, M. Cooper and R. Baumber, Royal National Orthopaedic Hospital, Stanmore

Chloroprocaine spinal anaesthesia for day case knee arthroscopy

R.J.S. Hudson MBChB FRCA and R. Erskine MBBS FRCA, Royal Derby Hospital, Derby, UK

Should tranexamic acid be used routinely in hip fracture surgery?

A. Magnussen, S. Howie and S. Sharraf, Kingston Hospital NHS Foundation Trust, Kingston, UK

Improving trauma services in a district general hospital

*S.Abbott, I. Abdlaziz and H.Jenkins
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It is well recognised that prompt, senior lead, co-ordinated multidisciplinary care is vital for the optimum management of patients with neck of femur fractures [1]. These patients are often high risk, elderly, with multiple co-morbidities. In addition it is estimated that that running costs for an operating theatre average approximately £1200 per hour [2]. Improving utilisation has obvious cost saving implications. This quality improvement project aimed to improve trauma theatre efficiency and quality of peri-operative care, particularly in the management of neck of femur patients with reference to AAGBI 2012 and the Anaesthesia Sprint Audit of Practice (ASAP) 2014 [3, 4].

Methods

The audit was registered locally and ethical approval was not required. Data was initially captured in the form of two separate questionnaires over an eight-week period. These addressed patient demographics, anaesthetic data, timing of the different stages of the patient journey to theatre, communication and reasons for delay. The results were presented at a multidisciplinary local audit meeting and the following changes were suggested. Only anaesthetic consultants with an interest in trauma or specialty doctors with equivalent trauma experience were to be assigned to the list on the rota. The patients were to be reviewed by the on call anaesthetist the night before and the wards given a copy of the list to allow preparation and optimisation of the first patient. A brief, early meeting at 8am before every list was performed to address any changes. A formal dedicated Saturday trauma list was also created to minimise the waiting list. Finally, a teaching program on performing fascia iliaca blocks for fracture neck of femur patients was instigated in the anaesthetic department and A&E by lectures and workshops. These had not been provided previously. The changes were re-audited two years later.

Results

There was an increase in consultant lead anaesthetic care from 52% to 82% of cases. Delivery of a team briefing improved from 53% to 82%. Delays in arrival of the first patient to the anaesthetic room dropped from 73% to 51%. The first patient had been reviewed overnight in 94% of cases to allow for medical optimisation. Neck of femur patients operated on within 36 hours of arrival in A&E improved by 6% and fascia iliaca blocks were offered in 100% of cases and performed in 81%. The results demonstrate a significant improvement in efficiency and quality of care of trauma patients in a district general hospital.

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Obstructive sleep apnoea in elective orthopaedic patients.

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Literature evidence suggests that the STOP-Bang questionnaire be used as a screening tool for patients with suspected or undiagnosed obstructive sleep apnoea (OSA). Stepwise stratification has been suggested to identify patients with high probability of moderate to severe OSA to reduce the number of false positive cases [1].

A local audit carried out in July 2017 suggested that patients with a STOP-Bang > 4 , BMI > 35 , ASA > 2 and a venous bicarbonate of >28 had a high probability of moderate to severe OSA. As per the results of this audit, 26% of all the patients were referred for overnight oximetry.

Our hospital is considering the use of the two step STOP-Bang scoring system at pre-operative anaesthetic assessment clinic. The aim of our audit was to categorise patients' risk, based upon this stepwise approach (Figure 1), to aid identification of patients who required further investigations and referral for formal diagnosis of OSA. If a formal diagnosis was made, these patients were commenced on the appropriate treatment to hopefully alter the management and outcome of their peri-operative care. This audit was done to aid the development of a more streamlined and financially efficient pre-operative pathway for patients identified with suspected or undiagnosed OSA and to influence the postoperative course of these patients.

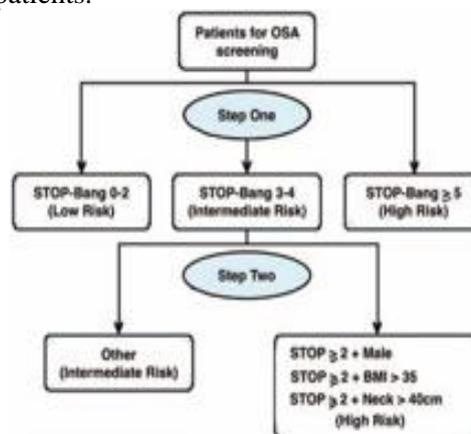


Figure 1. [1]

Methods

Our re-audit spanned one month which involved collecting the STOP-Bang score for all patients who came through elective orthopaedic preoperative assessment clinic during February to March 2018. Those considered high risk (STOP-Bang > 5) were sent for overnight oximetry; patients with a STOP ≥ 2 + male or high BMI (>35) or neck > 40 cm would also be considered as high risk and would be referred for overnight oximetry and have a venous bicarbonate done. Data collection was performed by the pre-operative assessment nurses with a standard form documenting patient details and STOP-Bang score. Data were analysed at the end of that month and outcomes of referrals subsequently followed up on hospital IT systems.

Results

Data from a total of 258 patients were included in the audit but 14 patients were discarded as no scores were documented on the audit forms. Fifteen patients had a STOP-Bang score of ≥ 5 ; two of these 15 were already undergoing treatment or had completed treatment for OSA; the other 13 (5.3%) were referred for overnight oximetry and eight (3.2%) of these were subsequently referred onto a Sleep Medicine Consultant. 82 patients had a STOP-Bang score of 3-4; only three (1.2%) of these patients were stratified as high risk by two step criteria and were referred for overnight oximetry, and two (0.8%) of the three were referred to a Sleep Medicine Consultant.

Our data shows that by using the STOP-Bang tool in a stepwise stratified way, we have reduced the number of patients referred for overnight oximetry and subsequently to Sleep Medicine. By potentially reducing the number of false positive patients, it eases the pressure on sleep study service, minimises the waiting time for elective surgery, increases the throughput for elective orthopaedic services, thus making it more productive and efficient while simultaneously improving patient experience.

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INCIDENCE and management of VTE during pre-operative workup for patients with metastatic bone tumours – a tertiary referral hospital experience.

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There is a recognised association between an incidental finding of deep vein thrombosis (DVT) or pulmonary embolism (PE) and increased mortality risk [1]. The risk of an incidental finding is higher in cancer patients [2]. The incidence of venous thromboembolism (VTE) in patients presenting with metastatic bone disease is not known. This retrospective analysis intended to identify the proportion of patients undergoing ultrasounds (USS) screening and the incidence of positive findings for VTE in this population; and to facilitate guideline development for pre-operative work-up (Figure 1) both in-hospital and pre-referral to minimise delays to surgery.

Methods

Data analysis was performed on retrospective data collected for the 63 patients referred for metastatic bone tumour surgery over a 1-year period. The incidence of USS-proven DVT was identified. Secondary outcomes included the performance of computed tomography pulmonary angiography (CTPA) or insertion of inferior vena cava (IVC) filter. A guideline was developed based on the identified risk factors for VTE.

Results

63 patients underwent surgical treatment in 2017. Of these, 25 (39.7%) had bilateral ultrasounds scans performed. Venous thrombosis was identified in seven (28%) patients screened, comprising six DVTs and one tumour vein invasion. CTPA was performed on six patients: 4 had USS-proven DVTs. 3 (75%) of these patients had a PE detected. Neither of the 2 patients without a DVT who had a CTPA performed (for tachycardia and hypoxia) had a PE. IVC filter insertion was performed for all six patients with an USS-proven DVT. Our population is at high risk of DVT/PE. Incidental finding of VTE in patients with malignancy has previously been estimated to be between 0.5-20% [3, 4] depending on cancer type, stage and treatment. 28% of our patients who underwent bilateral doppler USS had a positive finding. The risk of DVT is increased in patients with lower limb lesions, multiple metastases, an associated pathological fracture and immobility. 75% of our patients with DVT had a PE on CTPA. All patients with USS-proven DVT should undergo CTPA.

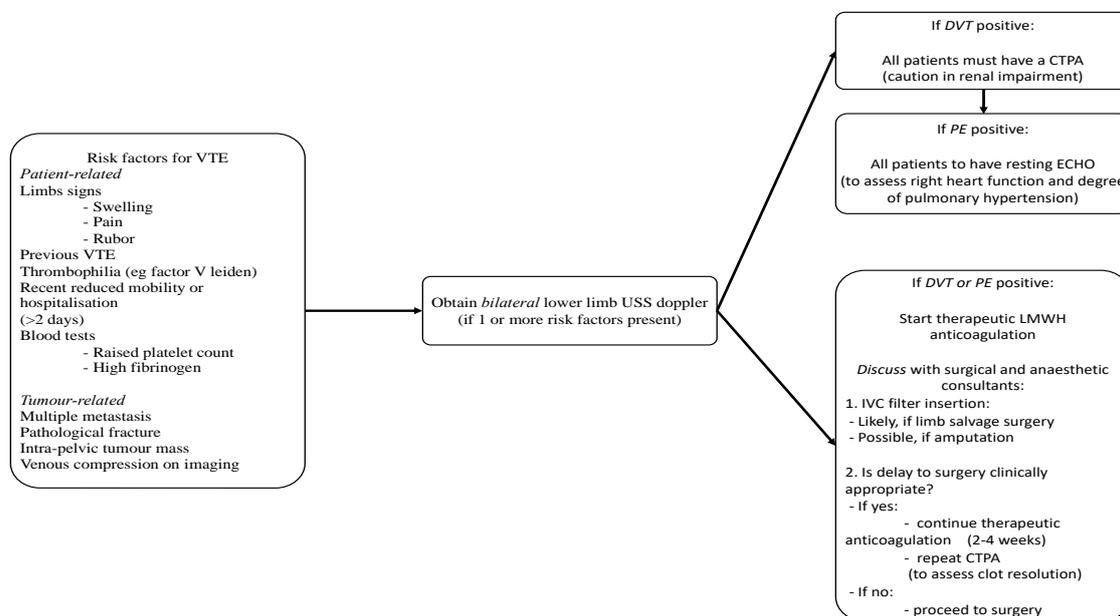


Figure 1. Pre-operative assessment for VTE

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Chloroprocaine spinal anaesthesia for day case knee arthroscopy

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Spinal anaesthesia possesses many of the desirable features for day case anaesthesia, including reduced analgesia requirements and PONV, avoidance of sedation and more rapid return of appetite and recommencing oral intake. However it has previously not been a popular choice in the UK for day case procedures, largely due to the lack of short acting spinal drugs. Chloroprocaine 1% has been licenced for intrathecal use in the UK since 2013 for procedures of up to 40 minutes. We have been able to use it for patients undergoing short, day case procedures in urology, gynaecology, general surgery and orthopaedic day case for 5 years with over 3000 cases to date. Knee arthroscopy is our commonest such procedure in which chloroprocaine spinal anaesthesia has been shown to be associated with a significantly shorter time to discharge and to cost half as much as total intravenous anaesthesia[1]. We report a series of cases noting adequacy of block, complications, and patient satisfaction.

Methods

We looked at 652 patients having therapeutic knee arthroscopy under chloroprocaine spinal anaesthesia. All patients received 4-5ml of 2-chloroprocaine 1% via a 25 or 27g Sprotte spinal needle. The majority received intravenous midazolam 0.5-4mg prior to spinal anaesthesia to reduce anxiety. The operations were performed by different surgeons, both trainees and consultants. We recorded surgical time, intraoperative interventions and postoperative urinary or mobilisation problems. We also asked patients to rate their anaesthetic experience as very poor, poor, adequate, good or excellent and whether they would choose to have the procedure performed under the same anaesthetic in the future should they need the procedure again.

Results

Mean surgical time was 26 minutes (Range 22-58, IQR 25-38).

Four patients (0.6%) required a repeat spinal due to inadequate block at 10 minutes and two patients (0.3%) required supplementation of analgesia with Alfentanil on skin incision, but no patients required conversion to general anaesthesia. Whilst a number of procedures exceeded 40 minutes none of these patients reported experiencing any pain. Two young male patients developed profound bradycardia which resolved with atropine. There were no cases of urinary incontinence or retention and no delayed discharges due to prolonged motor or sensory block. Two patients experienced a headache post-op both of which resolved spontaneously. Eight (1.2%) would not choose the same anaesthetic again despite describing it as adequate or good. The remainder (98.8%) rated their anaesthetic experience as good or excellent, stating they would choose it again in future if offered the choice. In fact a number of patients asked why they had not been offered this anaesthetic on previous occasions. This study shows there is strong evidence that the availability of chloroprocaine in theatre increases patient and anaesthetist choice of available acceptable anaesthesia for knee arthroscopy lasting up to 58 minutes.

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Should tranexamic acid be used routinely in hip fracture surgery?

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Peri-operative anaemia contributes significantly to morbidity and mortality in patients undergoing surgery for a fractured neck of femur (FNOF) [1]. Approximately half of patients require a blood transfusion post-operatively, but transfusion is associated with its own risks and incurs additional expense [2,3]. Tranexamic acid (TXA) is used routinely in elective arthroplasty in the UK and has been shown to reduce transfusion requirements. The principle concern regarding its use in FNOF patients is the perceived increased risk of venous thromboembolism (VTE). If this cost-effective drug can be shown to be safe in these patients, then routine administration could potentially enhance patient safety.

Methods

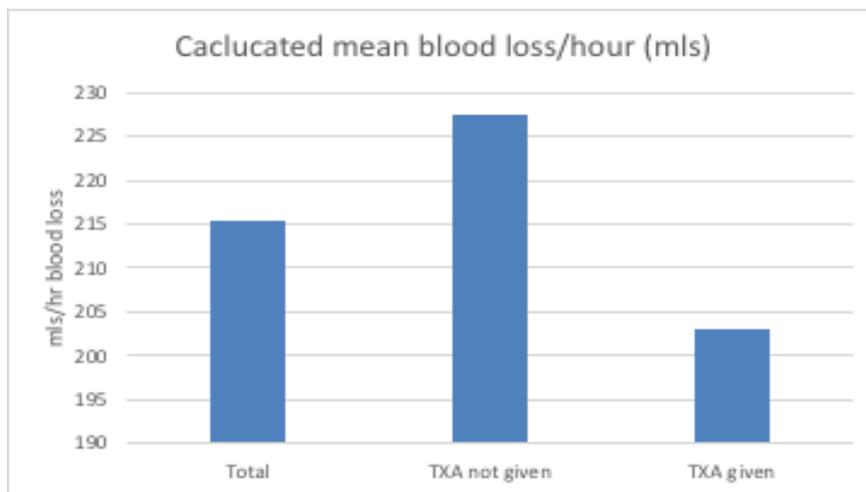
A comprehensive literature review identified two meta-analyses and one systematic review. These were analysed to assess if they could inform practice in the UK. Our team was concerned that the demographics of the patients analysed in these studies did not accurately reflect the UK FNOF population. The decision was made to perform a local study.

4 months of data was collected retrospectively. Administration of TXA, total perioperative blood loss, operative time and grade of operating surgeon were all recorded. The results were stratified according to which type of surgery was performed (Hemiarthroplasty, Dynamic Hip Screw or Intramedullary Nail). Post-operative VTE events were recorded. The data was analysed to assess whether preoperative administration of TXA reduced blood loss or increased VTE events compared to the control group.

Results

The three level-one studies showed that perioperative blood loss and transfusion requirements can be significantly reduced by the routine use of TXA ($P < 0.00001$) [1]. No statistically significant effect on VTE incidence was demonstrated.

In our study a total of 123 patients were analysed (August to November 2017). 47% received tranexamic acid preoperatively. Calculated mean perioperative blood loss for all surgery is shown in Table 1. No VTE events were recorded in either group.



Our findings agree with current literature and support giving tranexamic acid to reduce perioperative blood loss and transfusion requirements. There remains no strong evidence to suggest higher VTE events in these patients.

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