WINTER NEWSLETTER

British Society of Orthopaedic Anaesthetists, December 2020

Dear BSOA Members

"Then the Grinch thought of something he hadn't before! What if Christmas, he thought, doesn't come from a store. What if Christmas...perhaps...means a little bit more!"
— Dr Seuss, How the Grinch Stole Christmas!

In our worst nightmares, I doubt we could have foreseen the possibility of a Christmas being stolen in our lifetimes. 2020 will always be come to known as the year Covid affected humanity. The way the flu pandemic of 1919 affected the world then (compounded by the 1st world war losses). Or indeed 100 years prior to that in 1818, when the first Asiatic cholera pandemic, the Ottoman Plague epidemic and the Ireland Typus epidemic overlapped in timeline in their respective parts of the world.

The superstitious may find meaning in the repeated double digits. However, the interesting element is that fact that at all those times in history, the pandemics have been associated with xenophobic or race riots. Whilst epidemics are thought to bring people together at the start; blame, racial tension and violence seem inevitable.

All we have left is hope. Hope in a better tomorrow, hope that the vaccines will work. And finally hope that if we or our loved ones do get afflicted by covid-19, it passes uneventfully.

Many of us have lost loved ones and unfortunately many still may. We, the BSOA send our condolences as we reflect on the year that has passed and our collective losses.

As we look forward to a new year, we welcome the fresh challenges of improving our educational activities, newsletter and planning our next meeting in November 2021. Our newsletter will contain a ***necessary financial advice column*** and will gradually increase its breath towards cases of interest and letters to the editor. We aim to support research to the tune of £10000 via the NIAA in 2021/2022.

We have successfully had 3 webinars with reasonable attendance in 2020. These have been provided free for members. The quality of registrar prize presentations was extremely high. The presentations and posters are available on the website for your perusal. We will continue to support our duty with the medical supplies for The Holy Spirit Hospital in Sierra Leone.

Whilst we are somewhat physically subdued this Christmas, we do not need to be so both mentally and emotionally. Wishing you all, the best possible Christmas and a splendidly positive new year.

Very best wishes

Dr EJ da Silva,
President of the BSOA

BSOA VIRTUAL EVENTS SERIES

Following the cancellation of this year's ASM which was due to take place in Oxford, the BSOA committee hopes that you enjoyed the Virtual Event Series which took place as a series of virtual lectures, Q&A sessions and free papers between September – November 2020.

The episodes were a great success with a brilliant line-up of faculty, thought-provoking Q&A discussions and a fantastic trainee prize presentation to conclude.

As a perk for all members, the BSOA are proud to announce that the lectures from all three instalments of the series are now available to view online!

To access the presentations, please visit https://bsoavirtual.talkingslideshd.com/, register your details and enter the following registration codes to access the content:

- Orthopaedic Anaesthesia in the COVID Era - Part 1 – **VirtualBSOASEPT**
- Orthopaedic Anaesthesia in the COVID Era - Part 2 – **VirtualBSOAOCT**
- Third Virtual Event + Trainee Prize Presentation – **VirtualBSOANOV**

Please note that if you registered to attend the events, you will need to use the username and password supplied to you by Nick Gray before the webinars. If you have any problems accessing the lectures, please do not hesitate to contact Lucy at lucyparkinson@eventmanagementdirect.co.uk

We hope that the Virtual Event Series went some way towards compensating for our absence of an ASM and we look forward to revealing our plans for 2021 soon.

Thank you for all your interest in the BSOA Virtual Event Series over the past three months.

Wishing you all a better year in 2021.

BSOA WINTER NEWSLETTER

Tax Advice for Doctors by Andrew Fenton CTA ATT IIT (Dip), AF Tax Solutions Ltd

Can I claim tax relief when I attend a conference overseas?

Many medical consultants attend educational courses/Study tours overseas so a question often asked by doctors is: Can I claim for my travel costs etc for attendance of training courses?

There isn't one clear-cut answer as some Doctors treat the visit purely as business, travelling solely to attend the seminar and then retreat home, whilst others combine the trip with the opportunity to travel or extend the time abroad as a holiday.

HMRC's view on obtaining a tax deduction for overseas conferences is as follows:

Expenditure incurred in attending overseas conferences and study tours is allowable only when incurred wholly and exclusively for the purposes of the trade of the trader claiming the expense as a deduction. Thus, if there is a recreational element, evidence of which is often apparent from the fact that the trader is accompanied by a spouse, civil partner or a close relative, there is an argument that the whole cost is disallowable.

However, HMRC do say that "where there is a clearly identifiable business element (and cost) HMRC will allow the identifiable business element of the expenditure on the grounds that that part is exclusively for business purposes.

The rules concerning the deduction of overseas travel can be complex and are often scrutinised by HMRC so professional advice is always recommended.

Trivial Benefits

Turkey on the Taxman!
As the festive season is fast approaching business owners may be thinking of ways to reward staff for their hard work.

HMRC is not known for its generosity when it comes to allowing tax free benefits, so medical professionals should welcome the following exemptions.

To recap the basic rule is that an employer can now provide trivial benefits such as a bunch of flowers, box of chocolates, a meal out, without any tax or national insurance for either the employer or employee.

The employer will also be entitled to claim income tax or corporation tax relief on the cost.

There are key conditions:

- The trivial benefit must cost no more than £50 (including VAT)
- The benefit must not be cash or a cash voucher
- The benefit must not be a reward for services or in any way contractual

Directors of close companies (broadly 5 or fewer shareholders) can receive trivial benefits up to £300 in a tax year. So, for a limited company that has 2 directors (i.e. husband and wife) the total exempt amount would be £600 (subject to the cap of £50 for each single purchase).

Examples (from HMRC guidance)
Company M provides one of its directors with a bottle of wine on her birthday. It also provides a bottle of wine to the director's husband who is an employee of company M. Each bottle of wine cost £20. The £20 cost of each bottle counts towards the director's and the employee's personal annual exempt amounts.

Company L provides a director and the director's daughter with a turkey each at Christmas. Each turkey costs £30. The daughter is not an employee or office holder of company L. The total cost of £60 counts towards the director's annual exempt amount.

Capital Gains Tax ("CGT")

Important changes to the deadlines for filing and paying CGT on the disposal of UK property

The deadlines for filing and paying CGT arising on the disposal of an interest in a UK property changed from 6 April 2020.

These changes apply to both UK residents and non-UK residents. These changes don't apply if the residential property has been used solely as the owner's private residence during the time it was owned.

From 6 April 2020, a UK resident disposing of a residential property in the UK making a gain which is liable to CGT will have 30 calendar days from the date of completion to tell HMRC and pay any CGT owed.

They will be able to do this using a new online service.

Transactions completed from 1 July 2020 onwards will receive a late filing penalty if they are not reported within 30 calendar days. Interest will accrue if the tax remains unpaid after 30 days.

Time to Pay Arrangements

The financial implications of the Coronavirus pandemic continue to affect individuals and businesses, many of whom find themselves seeking support in ways they've never had to consider before.

The government launched a well-publicised series of support measures in response to the Covid-19 crisis, including the Coronavirus Job Retention Scheme and the Self-Employment Income Support Scheme.

However, HMRC is also seeing increased demand for a pre-existing support option for those struggling to pay their tax – the Time to Pay arrangement, frequently abbreviated to TTP.

TTP arrangements can cover any amount owed to HMRC that has become overdue. There is no standard length or amount as each is specific to individual circumstances and completely bespoke, created on a case-by-case basis.

Many doctors may have deferred their Self-Assessment payment on account in July 2020 and HMRC have confirmed that no interest or a penalty will be charged as long payment in full is made by 31 January 2021.

Doctors who cannot pay their Self-Assessment tax liabilities in full can pay their tax by instalments.

You can set up a payment plan to spread the cost of your latest Self-Assessment bill if:

- you owe £30,000 or less
- you do not have any other payment plans or debts with HMRC
- your Tax Returns are up to date
- it's less than 60 days after the payment deadline

An instalment plan can be set up by online or by calling the Self-Assessment Payment Helpline on 0300 200 3822.

For further information or to discuss your tax affairs please contact Andrew Fenton (AF Tax Solutions Ltd) on 07775 503475 or email andrew@aftax.co.uk.

Andrew is a Chartered Tax Adviser (and a former Inspector of Taxes with HMRC) and has many years of experience in dealing with the tax affairs of medical professionals

BSOA WINTER NEWSLETTER

Poster and Oral Presentations 2020!

Thank you to all who submitted a poster or oral abstract to the BSOA Virtual Event Series 2020. Please find below the winning entries:

First Place Oral: **Rib fracture management in a Major Trauma Centre –a research & quality improvement project**

C. Twohig, B. Ikponmwosa, N. Solanki, S. Funnell, and R. Bloomer
Kings College Hospital, London

Rib fractures are common following blunt thoracic trauma and are associated with high morbidity and mortality. Respiratory complications, including pneumonia, may occur in up to thirty percent of patients [1]. Providing adequate analgesia is key in the management of patients with rib fractures. A tour institution, it was observed that significant delays were occurring in patients receiving adequate analgesia, especially regional analgesia. Our aim was to quantify and investigate the delay in regional analgesia, and, through a rib fracture care bundle, improve the management of this group of patients.

Methods: Data was collected at our institution, a London Major Trauma Centre (MTC)over three months in June-Aug 2019. All patients admitted to the MTC with new, radiologically confirmed, rib fractures were included. Patients whose inpatient admission was <24 hours, and those with incomplete Injury Severity Scores (ISS) were excluded. Demographics, injury and ISS, length of inpatient stay (LOS), operator, type, and time to regional anaesthesia were collected. Suitability of the referral was retrospectively analysed by the project authors. Patients were categorised into four standardized ISS groups (1-8, 9-15, 16-24, 25-49) [2]. Statistical analysis was undertaken on SPSS (IBM Corp.)Following data collection and analysis, a comprehensive rib fracture care bundle was developed (including a new trust guideline, micro-teaching sessions, electronic order sets and observation sheets, and a patient information leaflet), covering the assessment and management of these patients from presentation in the emergency department through their inpatient stay and post-discharge.

Results: A total of 67 patients were included. Median age was 56years (IQR 21) (79.1% male). Median ISS was 17with the modal group being ISS 9-15. Median LOS was 13.78 days. Thirty-four (50.7%) patients were referred for regional anaesthesia, with all requests deemed appropriate. A total of 19 blocks were performed: 13 erector spinae, 2 serratus anterior, 2 thoracic epidural, and 1 suprascapular (1 block type unknown). All but one block were catheter insertions. Twelve blocks were performed by registrars and three sited by consultants (3 unknown grade).Mean time from admission to block was 52.8 hours (SD 39.3).Mean LOS for patients who received blocks was 16.0 days (95% CI 12.1-22.9) versus 17.5 days(95% CI 12.2-19.7)for those who did not. When LOS was adjusted for ISS, patients who received blocks in the 16-24) &25-49 group had a shorter length of stay compared to those that did not (15.0 vs 18.7 days & 21.3 vs 29.3 days respectively).

References:

1. May L, Hillerman C et al. Rib fracture management. BJA. 2016; 16(1), 26-32
2. Candefjord, S., Asker, L. & Caragounis, E. Mortality of trauma patients treated at trauma centers compared to non-trauma centers in Sweden: a retrospective study. Eur J Trauma Emerg Surg (2020)

Runner Up Oral: **Prilocaine spinal anaesthesia for ambulatory orthopaedic surgery – case series of prilocaine use for total hip arthroplasty in a tertiary orthopaedic hospital**

McMahon O, Higham H, Holman L
Oxford University Hospitals NHS Foundation Trust

Background: Increasing demand for ambulatory surgery has stimulated debate regarding the ideal anaesthetic technique to facilitate safe early mobilisation. Studies demonstrate general anaesthesia (GA) for total hip arthroplasty is associated with increased rates of adverse events and marginally longer operating times [1]. However, spinal anaesthesia (SA) with long-acting local anaesthetics such as bupivacaine, may delay mobilisation due to prolonged motor block. This case series examines the use of prilocaine for SA in total hip arthroplasty.

Case series: We analysed 2% hyperbaric prilocaine use for SA in a series of 25 total hip arthroplasty cases in a tertiary orthopaedic hospital. We recorded the dose administered and time from intrathecal injection to 1st report of pain and to initial patient leg movement. Complicating factors and requirement for intravenous opiate administration were also documented. The median dose of prilocaine administered was 68mg (60mg-80mg). Median time to pain was 121mins (35–220mins) and to leg movement was 136mins (35–232mins). Intravenous opiate was required for analgesia during skin closure in 5 cases (20%) and one case required conversion to GA (4%).

Discussion: Key requirements for ambulatory surgery include a rapid onset and offset of anaesthesia, rapid recovery of protective reflexes, mobility and micturition, and good control of pain and nausea post-operatively [2]. Intrathecal prilocaine is licensed in the UK for use in SA for “short term surgical procedures”. NICE guidelines for intrathecal injection recommend 40–60 mg (maximum dose 80 mg). Dosing in this case series was consistently at the upper limit, however never exceeded the maximum dose and no complications associated with high doses were seen. Appropriate patient selection for this technique is paramount, being guided by complexity of operation, surgical skill and anaesthetic factors as GA conversion in a lateral position may be challenging.

Learning points: In this case series, median time to leg movement for prilocaine is short compared with bupivacaine, potentially facilitating early post-operative mobilisation. Prilocaine SA may provide an alternative approach for those not previously considered for ambulatory surgery due to co-morbidities.

References:

1. Bryce A et al. General Compared with Spinal Anesthesia for Total Hip Arthroplasty. *J Bone Joint Surg Am.* (2015) 97:455-61
2. Rattenberry W et al. Spinal anaesthesia for ambulatory surgery. *BJA Education* (2019) 19(10): 321-328

Third Place Oral: **Ankle block vs spinal vs general anaesthesia for day-case foot and ankle surgery. An audit of patient satisfaction and theatre efficiency.**

C. McGrath, P. Merjavy
Craigavon Area Hospital, Portadown

Day-case anaesthesia should ensure patient comfort, analgesia and anti-emesis to promote high theatre turnover and efficiency, early patient mobilisation and prompt discharge home. The Association of Anaesthetists, in combination with the British Association of Day Surgery published guidelines in 2019 which recommended “all anaesthetists should be familiar with techniques that permit the patient to undergo a procedure with minimum stress and maximum comfort in order to enable early discharge, including regional nerve blocks and neuraxial blockade” [1]. Specifically, a recent 2020 PROSPECT guideline supported by ESRA recommended ankle block as the first line regional analgesic technique for hallux valgus repair surgery [2]. We undertook an audit to establish if ankle block alone generated higher patient satisfaction and a more timely discharge following day-case foot and ankle surgery than spinal or general anaesthesia.

Methods: Data was collected from a total of 28 patients undergoing foot and ankle surgery on a once-weekly list in a local day-case unit over a 3 month period. Various anaesthetic techniques were employed over this time period, including ankle block alone, spinal (combined with ankle or popliteal nerve blocks) and general anaesthesia. Patient satisfaction questionnaires captured a variety of data including pain scores, incidence of PONV and mobility whilst recovery nursing staff captured data on time to oral intake, time to physiotherapy review and time to readiness for discharge and actual discharge from hospital.

Results: A total of 28 patients were included in the audit with 19 (68%) undergoing ankle block alone. General anaesthesia was performed on 5 (18%) patients and 4 (14%) underwent surgery under spinal anaesthesia in combination with popliteal or ankle nerve block. Our key findings indicated that patients undergoing ankle block alone established oral intake more quickly (mean 15 minutes vs 76 minutes for GA vs 38 minutes for spinal), were ready for discharge more quickly (mean 56 minutes vs 163 minutes for GA vs 186 minutes for spinal) and experienced long lasting effective analgesia with a mean time of 18 hours from nerve block to experiencing first pain. Patients undergoing peripheral nerve blockade also reported higher satisfaction with regards pain relief, PONV, sore throat, dry mouth and drowsiness than those undergoing a general anaesthetic. We hope to use our findings to establish a local protocol on using peripheral nerve blockade alone, specifically ankle block, as the first line anaesthetic technique for day-case foot and ankle surgery within our unit.

References:

1. Bailey, C.R., Ahuja, M., Bartholomew, K., Bew, S., Forbes, L., Lipp, A., Montgomery, J., Russon, K., Potparic, O. and Stocker, M. (2019), Guidelines for day-case surgery 2019. Anaesthesia, 74: 778-792.
2. Korwin-Kochanowska K, Potié A, El-BoghdadlyK the PROSPECT/ESRA Working Group Collaboration, et al PROSPECT guideline for hallux valgus repair surgery: a systematic review and procedure-specific postoperative pain management recommendations Regional Anesthesia & Pain Medicine 2020;45:702-708

BSOA WINTER NEWSLETTER

Best Overall Poster: **Restoration of elective surgery following the SARS-CoV-2 pandemic in a tertiary specialist centre**

HK. Ubhi, Z. Nassa
The Royal Orthopaedic Hospital, Birmingham. UK

Restoration of elective surgery following the SARS-CoV-2 pandemic in a tertiary specialist centre

Ubhi HK [1], Nassa [1]
Pre-operative Assessment clinic[1], The Royal Orthopaedic Hospital NHS Foundation Trust, Birmingham

Introduction

- Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection was found to be extremely high [1]
- As a result, thresholds for elective surgery during the COVID-19 pandemic were universally raised when compared to normal practice
- Other recommendations included, postponing non-urgent procedures and promoting non-operative treatment
- ROHFT was one of the first trusts nationally to resume elective surgery in June 2020 post 1st wave of the SARS-CoV-2 pandemic
- National and local recommendations, based on medical and surgical priority were drawn up to guide careful patient selection in the group

Aims

- This retrospective audit was designed to assess the actual impact on patients mortality and length of stay (LOS) receiving elective surgery immediately post 1st wave of the pandemic
- Patient risk factors included; Gender, BMI, BAME status, medical co-morbidities and nature of surgery

Method

- A retrospective review of patients seen in POAC between the 1st to 30th June 2020 were selected as candidates for surgery on a medical or surgical priority basis
- Using the electronic prescribing system (PICS), data to assess risk factors, type of surgery and length of stay was sought for each patient
- All patients were required to self-isolate for 14 days pre-admission and have two negative throat and nose swabs in this period (days 11 and 13) [2]
- Each patient received information on perceived risks of surgery with additional SARS-CoV-2 related morbidity and mortality based on CovidSurg data

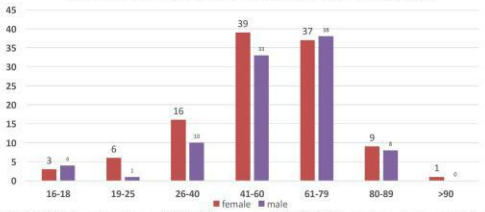
Results

- A total of 239 patients were reviewed in POAC, with all but three patients deemed appropriate for surgery at their appointment
- In comparison to the same time period, in 2019, in POAC 729 (32.8%) patients were reviewed and deemed appropriate
- A total of 205 (85.8%) of those assessed underwent surgery

Gender & BMI Results:

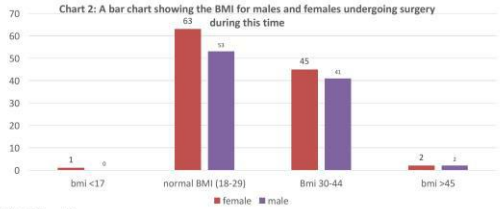
- A total of 205 (85.8%) of those assessed underwent surgery, 111 (54.1%) females and 94 (45.9%) males
- Of these, 63 (56.8%) females and 62 (66%) males were aged >60 (See Chart 1)

Chart 1. A bar chart showing the age ranges of male and females operated on.



- 44 (46.8%) males had a BMI >30 versus 46(41.4%) females, demonstrating the reduced mobility and exercise tolerance of these patients (See chart 2)
- 4 patients in total had a BMI >45 who were due to have Revision arthroplasty surgery due to infection

Chart 2: A bar chart showing the BMI for males and females undergoing surgery during this time



BAME Results:

- 20 (9.8%) patients belonged to BAME group (including Black, Indian and Pakistani patients) , with an equal male and female divide and 179 (87.3%) being of a white background
- 13 (65%) BAME patients had primary Arthroplasty, 1 (5%) Scoliosis correction, 1 (5%) revision Arthroplasty, 2 (10%) oncology procedures and 4 (20%) had day case hand surgery

Results based on pre-existing disease:

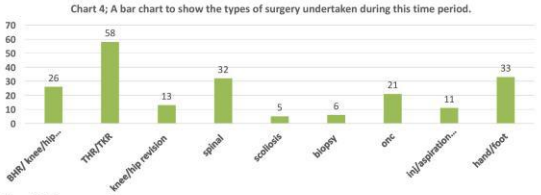
- 15 (7.3%) patients had co-existing cardiac and respiratory disease
- 6 (7.8%) had both cardiac disease and diabetes
- 176 (82.9%) had one to six co-morbidities (See chart 3)

Chart 3: A bar chart showing the co-morbidities for the patients undergoing surgery during this period.

Results based on type of surgery performed:

- Chart 4 shows the types of surgery undertaken during this time period with 58 (28.3%) primary Arthroplasty cases versus 13(6.3%) revision Arthroplasty

Chart 4; A bar chart to show the types of surgery undertaken during this time period.



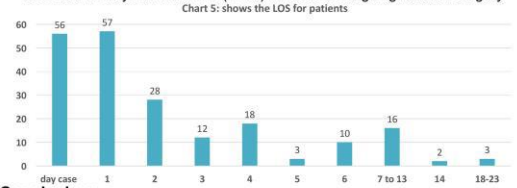
Swabbing results :

- 180 (87.8%) patients undergoing surgery had two negative swabs each.
- 11 (5.54%) of the total, had surgery with an unknown result and so followed a "unprotected" pathway for admission.
- Of those operated, eight (3.9%) had inpatient swabs taken due to suspected COVID-19, all (100%) with a negative result.
- COVID-19 related mortality for all assessed admissions was 0%.

LOS results:

- LOS was in-line with severity and complexity of surgery, as prior to the pandemic (See chart 5)
- Two (1%) patients, with a LOS of 7 to14 days underwent scoliosis correction
- LOS was 14 days or more in 5 (2.4%) in those undergoing revision surgery

Chart 5: shows the LOS for patients



Conclusions

- Careful and collaborative patient selection contributed to minimising perioperative risks to our patients
- Comprehensive review, risk assessment and optimisation of underling conditions were all fundamental to our POAC processes, enabling informed decision making and ultimately best outcomes for patients
- Risks are perceived to be higher in the elderly male cohort, however in our audit similar numbers of males to females were assessed, with no observed statistical difference in perioperative risk
- Patient with high BMI, regularly reported reduced mobility and lack of ability to exercise due to nature of orthopaedic pathology. Further exacerbated during lockdown, isolation/shielding at home, often leading to further weight gain.
- Those with a BMI >45 were seen by an anaesthetist and unless undergoing life/limb saving surgery were referred back to their surgical teams for consideration of delaying surgery or non-operative procedures
- BAME patients formed a small percentage of the cohort, of which a high proportion underwent major surgeries based on RAG triage rating
- The types of surgery during this period were consistent with the proportions usually seen pre-pandemic
- A further project is being planned looking specifically at BAME patients. Actual vs perceived risk of perioperative mortality and respiratory complications during the next wave of the pandemic. Whilst hoping it never quite materialises…

References
1.Mortality and pulmonary complications in patients undergoing surgery with perioperative SARS-CoV-2 infection: an international cohort study, www.thelancet.com Vol 396 July 4, 2020
2. Operating framework for urgent and planned services in hospital settings during COVID-19, Version 1. NHS England. May 14, 2020
Thank you to Dr Sarabjit S Osahan for his help with data collection for this audit.

BSOA WINTER NEWSLETTER

Best Presented Poster: **Our experience with peripherally inserted central catheters (PICC) at a tertiary orthopaedic hospital- A analysis of complications over the last 5 years.**

S Dsouza, C Crick, S Chin, R Krishnan.
Royal National Orthopaedic Hospital (RNOH), Stanmore, London, UK

Our experience with peripherally inserted central catheters (PICC) at a tertiary orthopaedic hospital- A analysis of complications over the last 5 years.

S Dsouza, C Crick, S Chin, R Krishnan.
Royal National Orthopaedic Hospital(RNOH), Stanmore, London, UK

BACKGROUND

PICCs are non-tunnelled vascular access devices which are usually inserted into the deep veins of the upper limbs. PICCs are easy to insert, safe to use and thought to have a lower risk of infection compared to central venous catheters.

At the RNOH in London, there is a central venous access service. Other than a dedicated weekly half-day session, 5 anaesthetic consultants are available to insert and manage PICCs during routine working hours. Most PICCs at our hospital are inserted for the medium to long term treatment of infection. Our aim was to examine the complication rate associated with PICCs inserted for parenteral antimicrobial administration.

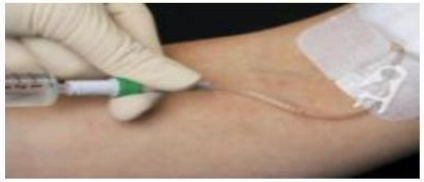


Fig 1- illustration of a vygon PICC

METHODS

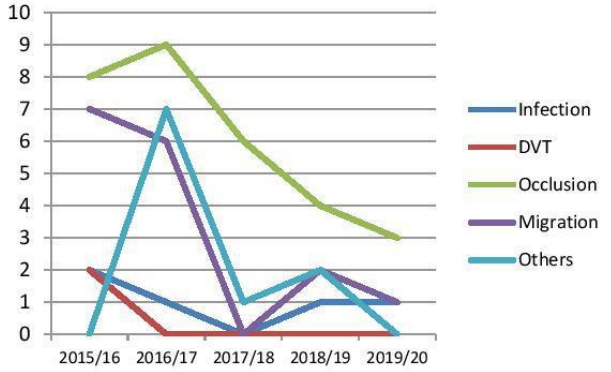
Between 1st April 2015 and 28th Feb 2020, a clinical nurse specialist followed up all patients on a routine basis. Follow up consisted of a weekly telephone call where questions were asked and concerns were addressed and a six-weekly face-to-face clinic appointment. Patients were encouraged to contact us if there were any further problems

RESULTS

Total - 498 PICCs lines inserted, 247(49.6%) males and 251(50.4%) females, average age 64 years(range 6-82). The overall complication rate was 12.65% and 2.82 per 1000 PICC days. On average the incidence of symptomatic upper extremity venous thrombosis (UEVT) and infection was 2(0.40%) and 5(1%) respectively. The rate of migration showed a progressive decline from 7(4.43%) in 2015-16 to 1(2.56%) in 2019-20. The overall numbers of PICCs that occluded range from 8(5.06%) in 2015-16 to 3 (7.69%) in 2019-20, The percentage increase could be attributed to a reduction in overall PICC line numbers.

	2015/16	2016/17	2017/18	2018/19	2019/20
PICC numbers	158	149	81	71	39
PICC line days	6630	6666	3743	3137	2146

Indications	PICC nos
Prosthetic joint infections	369(74%)
Osteomyelitis	68(13.65%)
Spinal infections	46(9.23%)
Miscellaneous	15(3.01%)



Graph showing complication rates yearly

DISCUSSION

The overall insertion numbers have reduced after the OVIVA trial in 2015.
Our overall complication rate of 2.82 per 1000 PICC days was significantly lower than that reported by a retrospective study which evaluated PICC line complications (9.2 per 1000 PICC days) in patients who needed long term antibiotics[1].
Our low rate of complications could be attributed to use of **single lumen and smaller calibre PICCs** which are associated with low thrombosis risk. Low infection rates may be atleast partially secondary to **strict aseptic technique under USG guidance in the theatre environment, the use of Curos port protectors which are a passive continuous disinfection device and patient education about PICC handling.**
Reduction in the rate of migration and occlusion may be due to **immediate use after fluorscopic confirmation of position, the change from STATLOCK device to the Vygon Grip-Lok and the use of Vygon TKO bionector which reduces the reflux of blood into the catheter.**

OUR RECOMMENDED PICC BUNDLE TO REDUCE COMPLICATIONS

- Multi-disciplinary team with consultant and specialist nurse input
- Strict asepsis in the theatre environment
- USG guided insertion at the mid-arm level
- Single lumen and small calibre 4Fr PICC line
- Immediate confirmation of position with fluoroscopy
- Curos Port protector
- Vygon Grip-Lok
- Meticulous followup: telephone and face to face
- Patient education and information &troubleshooting booklet.

REFERENCES-1) Valbousquet Schneider L, Duron S, Arnaud F et al. Evaluation of PICC complications in orthopaedic inpatients with bone infection for long term intravenous antibiotics therapy. *Journal of vascular access.* 2015: 16; 299-308.

BSOA WINTER NEWSLETTER

Poster Most Likely to Change Practice: **Challenges of central neuraxial anaesthesia and sedation in obese and morbidly obese patients undergoing prolonged lower limb free flap surgery**

J. Kuzhively, S. Galitzine
Nuffield Department of Anaesthetics, Oxford University NHS Hospitals Trust, Oxford

Challenges of central neuraxial anaesthesia and sedation in obese and morbidly obese patients undergoing prolonged lower limb free flap surgery

Dr Julie Kuzhively (RA ATM Trainee), Svetlana Galitzine (Consultant Anaesthetist)
Nuffield Department of Anaesthetics, Oxford University Hospitals NHS Foundation Trust, UK

NHS
Oxford University Hospitals
NHS Foundation Trust

Background

The Nuffield Orthopaedic Centre (NOC) is a tertiary and quaternary referral centre for complex orthopaedic patients with osteomyelitis (OM). The surgery is usually prolonged and joint with the reconstructive plastic surgery team for simultaneous free tissue transfer ("free flap") for poorly healing lower limb sites. A proportion of the patients presenting with OM have high BMI, with associated co-morbidities like type II diabetes, obstructive sleep apnoea and ischaemic heart disease. High BMI is also associated with increased complications and technical difficulties with both general and regional anaesthesia [1-2]. While central neuraxial anaesthesia and sedation (CNA+Sed) can be advantageous for prolonged lower limb free tissue transfer (LLFTT) surgery by providing improved surgical and patient reported outcomes [3], avoidance of airway interventions and good operative analgesia, high BMI can make its management more challenging with difficult insertion of CNA and maintenance of adequate but safe sedation levels [4]. We present results of an ongoing audit/QIP into the management of LLFTT patients, focusing on the anaesthetic challenges of obese patients and ways to modify the technique to improve the service in these high risk patients.

Methods

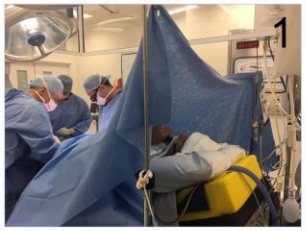
With institutional approval, we reviewed anaesthesia data collected prospectively and – retrospectively - case notes of patients with BMI≥ 30, who underwent LLFTTs under CNA +Sed performed at the NOC by/under supervision of one consultant anaesthetist. Of 85 cases reviewed (2007-onwards), there were 22 patients with BMI≥ 30 at the time of surgery.

Results

Out of the reviewed 85 patients 22 (26%) were obese or morbidly obese, with BMI ranging from 30 to 44; four (18%) patients were morbidly obese with BMI ≥ 40 (see table below). The surgical procedures were performed in supine position and took between 6hr48min to 13hr45min. All cases were initially planned for anaesthesia under CNA+Sed. Neuraxial blockage was performed by the consultant in 20 cases, with two CNAs performed by senior trainees under supervision. Ultrasound assistance was used in 13 (59%) of the cases. First pass success with insertion was recorded in eight (36%) cases. Sedation was maintained using propofol TCI, midazolam and/or fentanyl boluses as required. In 12 patients, ketamine was added to propofol (1:5 ratio) for deeper sedation. In three patients some form of audio-visual distraction (AVD) was used, aiming to reduce anxiety and sedation requirements. All patients had invasive BP and arterial blood gases monitoring. Supplementary oxygen support was given via a face mask. With the advent of high flow nasal oxygenation (HFNO), two patients with obstructive sleep apnoea had HFNO to aid oxygenation under sedation (see pictures 1 & 2). Intraoperatively, there was one unplanned conversion to GA after initially successful CNA (CSE) block.

All patients were managed in a nurse-led HDU postoperatively, with no post-operative ITU transfers. Patient controlled epidural analgesia (PCEA) was provided postoperatively, aiming to continue for maximum 4 days as per trust Acute Pain Service (APS) protocol. In the cases reviewed, PCEAs were continued for mean 2.8 days (range 0-5), with regular APS follow up. Unfortunately in six patients, epidurals fell out early with need for initiation of PCA morphine or other oral analgesic alternatives. The flaps were successful in all patients but one, in whom BMI>40 and inadequate preoperative psychological preparation were important contributing factors [5].

No	BMI	Comorbidity	Anaesthesia	Intraoperative	Post operative
1	40	AF, HTN, ETOH excess	Epi, Sedation	Difficult CNA Insertion, stable maintenance	Epidural fell out day 1, PCA. Nil issues with free flap (FF)
2	41	TIA, Depression, OSA	Epi, Sedation, HFNO	pCO2 7.1 with oversedation, but resolved quickly	Comfortable, PCEA in situ 3 days. Nil issues with FF
3	42	Psoriasis, restless leg syndrome, severe anxiety, HTN	Epi, Sedation	Difficult CNA insertion due to psoriasis and emollients; very anxious and restless intraoperatively; high sedation requirements	Restless and non-compliant postoperatively in HDU: excessive pressure on FF in standing position; FF compromise and subsequent failure. Epidural catheter fell out/was pulled out
4	44	Asthma	Epi, Minimal Sedation	Easy CNA with minimal sedation	Comfortable, PCEA in situ 3 days. Nil issues with FF



^ Pictures 1-2 – Theatre set up for a LLFTT under continuous epidural anaesthesia, conscious sedation with propofol TCI and HFNO for oxygenation in a BMI≥ 40 patient

<Table – Summary of BMI ≥ 40 cases for LLFTT under CNA+Sed

Discussion

Complex orthoplastic reconstructions for bone infection are often prolonged procedures with significant risk of flap failure especially in high BMI patients [4-6]. Neuraxial anaesthetic techniques can improve success with microvascular reconstruction procedures by reducing peri-operative stress and catecholamine release with good analgesia, improved haemodynamic stability, thermoregulation and decreased vasospasm [7]. High BMI can be associated with difficult insertion of CNA, but US assistance may be useful in determining landmarks and needle entry [8]. In terms of sedation, a balanced approach is required to ensure comfort and anxiolysis, but without over-sedation, hypercarbia and loss of airway control, and techniques like ketamine with propofol, targeted infusions of sedation and audio-visual distraction may be useful. HFNO has also been used successfully in some of the cases, to provide oxygenation, along with moderate CPAP, humidification and improved patient satisfaction. In the cases reviewed, there was only one failed CNA+Sed, with conversion to GA around 3hrs into start of surgery due to agitation and, possibly, due to inadequate epidural component of the CSE. Post operatively, a functional epidural could improve flap perfusion as well as improve patient comfort. Unfortunately, in around 30% of the cases reviewed, epidurals fell out early with need for morphine conversion. Close monitoring and follow up by APS/anaesthetic cover is required to troubleshoot epidurals and ensure longevity of epidural infusions.

While numbers are small due to the nature of surgery, our results reassure that CNA+Sed provides safe anaesthesia for prolonged LLFTT surgery in high BMI patients. With the current facilities in our centre we recommend the following quality improving strategies for CNAs in high BMI patients: 1) preoperative optimisation with MDT approach; 2) use of Epidural vs CSE; 3) US-assistance for CNA insertion; 4) use of AVD to alleviate anxiety and reduce sedation requirements; 5) use of HFNO +/- addition of ketamine if deep sedation is required. Our findings can be applicable to management of high BMI patients undergoing different lower limb procedures.

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