PECTORALIS AND SERRATUS ANTERIOR BLOCK, A GOOD ALTERNATIVE IN BREAST DAY SURGERY?

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Introduction

PECS1 and Serratus anterior plane blocks have been described as regional anaesthesia techniques to provide intra- and post-operative pain relief for breast surgery[1].
Kings College Hospital Day Surgery Unit (DSU) performs 300 breast surgery cases annually. Analgesia provided for this is typically in the form of intraoperative opioids and surgical local anaesthetic infiltration.
Our aim was to assess if PECS1 & Serratus blocks can improve patient pain scores for patients attending day case breast surgery.

Methods

We retrospectively audited patients attending DSU breast surgery over a 4 month period, recording analgesia given during anaesthesia and in recovery. Local anaesthetic was given by surgical infiltration or by the anaesthetist in the form of a plane block. The incidence of patients receiving a plane block was dependant on operator availability. Pain scores were recorded in recovery and on day 2 via telephone call from the breast nurse specialists.

Results

Data was collected on 31 patients, 16 had surgical local anaesthetic infiltration and 15 had a plane block.
Mean pain score of patients with a block was 1 in recovery and 2 on day 2. Those with surgical local anaesthetic infiltration had a mean pain score of 1 and 1.5 in recovery and day 2 respectively.

Discussion

The operator variability in both surgical infiltration and anaesthetist performing block, in addition to a small sample size, limits making a true distinction between techniques.
The method of pain assessment was not consistent between recovery and day 2, which could contribute to bias of recorded scores. However, there was no difference in pain assessment between patients with a plane block and those without.

Conclusions

Pain scores were comparable between groups, with the plane block providing similar level of analgesia as the typical technique.
We suggest PECS and Serratus block is a viable alternative for patients undergoing day surgery breast procedures.

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Post-operative pain and mobilisation in fractured neck of femur patients, does regional anaesthesia stop us meeting national guidelines?

Sioned Phillips, Andrew Kermode, Andrew Lamb, Deepa Jadhav.

Introduction: Within our anaesthetic department we have a Trauma Anaesthesia Group, TAG. The TAG group run monthly rolling audits looking at specific aspects within the care of patients undergoing emergency trauma surgery. Many of these have focused on the care of patients undergoing fractured neck of femur (NOF) surgery and these have been used as ongoing quality improvement projects. Recently we looked at post-operative pain scores and the ability to mobilise in this patient group. Our aims were to establish if we provided adequate post-operative analgesia for fractured NOF patients and to see if we followed NICE guidelines on analgesia (regular paracetamol) and ensuring mobilisation on day 1 post operation[1].

Methods: We captured data over a 2-week period in December 2017, of patients undergoing surgery for a fractured NOF. We looked at type of anaesthesia, intra operative analgesia, supplemental analgesia in the recovery area, pain scores on day 1 and 2 and side effects from opiate drugs. If a patient was unable to communicate pain scores, we used the Bolton Pain Assessment Tool (required in 2 patients). The pain scale used was 0= no pain, 1=mild pain, 2= moderate pain, 3=severe pain. We also assessed the ability to mobilise and any factors leading to immobility.

Results: We collected data on 17 patients who underwent fractured NOF surgery out of 24 in our 2-week data collection period. One patient was excluded from the results, as he was a 38-year-old who had sustained polytrauma. The age range was 56-96 with a mean of 80 years. Six patients had a general anaesthetic and 10 patients had a spinal anaesthtic, one of these required conversion to general anaesthesia due to the length of the procedure. Seven out of 10 patients (receiving spinal anaesthesia) had no intra thecal opioid. Thirteen patients received either a femoral nerve or fascia iliaca block, FIB (8 femoral nerve blocks and 5 FIB's). Two patients required supplementary analgesia in the recovery area (1 of these had not received a nerve block). All patients received regular paracetamol. The mean pain score on day 1 was 1.9 (no difference in GA vs spinal). Half of the patients were unable to mobilise on day 1 post op, 6 of these had received a femoral block or FIB. In the majority of cases this was due to residual motor block from the femoral nerve block. On day 2 the mean pain score was 1.1 and 14/ 16 were able to mobilse. The 2 patents who were not mobilised both had medical conditions that prevented this, rather than pain or motor block.

Discussion

Although the numbers in our audit are small, it has highlighted an area of potential concern; that the degree of femoral nerve block may limit mobilisation on day one. One reason for this audit was to assess the need for post-operative FIB catheters and run an infusion of 0.125% bupivacaine for 24-48 hours post-surgery. Our pain scores on day 1 could be better, but the use of a perineural catheter may limit mobilsation further.

Conclusion

We are providing adequate analgesia for this patient group and following NICE guidance on the use of paracetamol and femoral blocks/ FIB. The analgesia provided seems to have an effect on the ability to mobilise on day one post op, 6/13 patients who received a nerve block were unable to mobilise on day one due to residual motor block. This is an area that we will carry out further work within a multi-disciplinary team to provide a balance between analgesia and minimal motor block allowing pain free mobilisation on day 1 post op.

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Pain management in patients with rib fractures.

Sioned Phillips, Helen Say, Jane Stone, Pradip Joshi, Madan Narayan. Frimley Park Hospital.

Introduction

Rib fractures are present in up to 10% of all trauma patients[1]. The thoracic complications of rib fractures range from pleural effusions, pneumonia to acute respiratory distress syndrome[1]. Good analgesia in these patients is a key priority in their management to help reduce morbidity and mortality. At our Trust, we admit approximately 80 patients a year with a diagnosis of rib fractures. We have reduced our length of stay for these patents from 13 days in 2014 to 9 days in 2017, but want to further improve patient care. We wanted to audit compliance with the analgesia management plan within the Trusts fractured ribs pathway and the Royal College of Anesthetists Audit recipe book statement on pain score documentation and management.

Methods

We carried out a 5-month prospective audit. All patients with a diagnosis of fractured ribs were identified, data was recorded regarding the number and level of ribs fractured and associated injuries. We followed each patient for 4 days and recorded all analgesia the patient had received and any regional anesthetic techniques provided to the patients. We also recorded pain scores (0-3, 0= no pain, 3= severe pain) and objectively assessed the patients' ability to deep breath and cough.

Results

We collected data on 21 patients (100% capture rate). The age range was 16- 91years, with a median age of 70 years. The mean number of ribs fractured was 3.7 (range 1-7). Eight out of 21 patients had other significant injuries. Pain scores were worst on the first day of assessment with a mean score of 2.8, 70% of patients had 2 consecutive pain scores of 2 or more on day 1. Fifty percent of patients on day one were unable to deep breath, this fell to 0% on day 4, and 85% of patients were unable to cough on day one (8.3% on day 4). All patients were prescribed regular paracetamol and NSAIDs (where appropriate). 14% of patients were not prescribed a regular weak opioid despite having pain scores of 2-3. Six patients required morphine PCA's and 11 patients received a total of 13 fascial plane catheters or nerve blocks. We performed 6 paravertebral, 5 serratus anterior, 2 erector spinae, 1 subpectrol catheters, 1 patient received a superficial cervical plexus block. All patients who were deemed to require a fascial plane catheter received one. The catheters were run as infusions of 10-14mls/hr. of 0.125% bupivacaine, 5 catheters required a bolus dose to adequately manage pain. All but 2 patients could cough after their catheter, but 7/11 patients still reported pain scores of 2. Each of these patients had other significant injuries for which the catheters were not expected to provide analgesia. Patients with catheters required less PRN analgesia than those who did not have a catheter (16mg Vs 40mg oral morphine).

Discussion

We have shown poor compliance with our pathway in terms of prescribing regular analgesia and reassessment of pain scores. Our regional anesthesia service provides catheters for a large proportion of patients with fracture ribs and although anecdotally they reduced opiate consumption, pain scores and improve ventilator function we have not shown this with our audit data. There is often a delay between referral to the pain team and intervention (i.e. regional anaesthtic technique), in this time patients need to be offered adequate analgesia. Many patients had ongoing high pain scores which were not acted upon.

The are several limitations to the audit: the group numbers were small and heterogeneous in terms of injuries, we recorded worst pain scores in the preceding 24-hour period on each day of assessment and did not collect data as to why a drug was omitted.

Conclusion

We need to improve pain scores in this group of patients. We have introduced a new pathway which includes a closed loop assessment and the use of IM morphine. With this we aim to stress the importance of patient reassessment and offer IM morphine as an adjunct for high pain scores. All patients now have regular incentive spirometry as another tool to help gauge adequacy of analgesia management. We have presented this data to the surgeons and aim to get 100% compliance with the new guidelines. We are also updating our continuous regional anaesthesia guidelines to include patient controlled bolus dose regimens, in an aim to improve satisfaction and analgesia with nerve catheters. We will continue this as a rolling audit and aim to provide improved patient care and outcomes.

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Ultrasound guided median nerve block & field block- a novel way to improve efficiency, patient satisfaction and productivity for carpal tunnel decompression surgery pathway

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Introduction

Optimising cost effectiveness of health care is one of the biggest challenge for the NHS. Improving efficiency with greater theatre output will help reduce the waiting times for routine surgery. We describe a method that we designed where regional anaesthesia was used to decrease turnover times, improve recovery profiles and subsequently resulted in high output theatre lists for carpal tunnel decompression(CTD).

Methods

The high output all day surgical lists were planned such that there were two intermediate procedures such as trapeziectomies, while the rest were CTDs. The anaesthetist performed ultrasound-guided median nerve block at the forearm as well as a field block in the anaesthetic room(AR) with the assistance of an anaesthesia assistant. The field block using 1% lignocaine with 1:200,000 adrenaline helped avoid using tourniquet. The WHO surgical checklist as well as "Stop before you block" were rigorously conducted for all patients. In order to reduce turnaround time, patients were grouped according to the side to be operated upon. Since we did not have a dedicated block room, once the first patient was in the operating theatre, the next patient was brought in to the AR. Patients received no sedation during the blocks and were transferred to the recovery room to be monitored by the nurse until the previous case was completed. After completion of surgery, patients were directly transferred to the ward bypassing recovery and from there discharged home after meeting the hospital's standard discharge criteria.

Results

A standard all-day hand list usually consisted of 7 to 10 cases. A high turnover hand list using the technique described above had on an average 16 patients, of which 14 were for CTD, along with 2 trapeziectomies. The average turnaround time for the high output lists was 15 minutes compared to 24 minutes for a standard operating list. The perioperative analgesia and discharge times were superior to conventional block technique.

Discussion

Ultrasound guided median nerve block provides excellent intraoperative as well as post-operative analgesia which lasts for more than 24 hours which has improved patient satisfaction. The use of local anaesthetic with adrenaline for a field block around the hand and wrist provides excellent haemostasis, negating the use of a tourniquet to provide a bloodless operative field [1,2]. It has the added benefit of removing the associated tourniquet pain and affords as significant saving in associated expendable costs of the tourniquet itself.

Conclusions

The use of ultrasound guided forearm median nerve block and field block for CTD along with simple organizational adaptations can improve theatre utilisation and cost efficiency along with better patient satisfaction and perioperative analgesia.

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There are no conflicts of interest and no ethical approval was needed

"Stop before you Block": Audit cycle demonstrating successful strategy implementation in preventing wrong site blocks and improving patient safety.

Dr Ami Merchant, Dr Laura Heggie, Dr Ashwani Gupta

Background

In 2010 the Safe Anaesthesia Liaison Group (SALG) issued an alert regarding the incidence of wrong site blocks during surgery after the National Reporting and Learning Service (NRLS) reported 67 such incidents over a 15 month period (1). Wrong site blocks can have significant consequences for patients, including facilitation of wrong site surgery, inadequate pain management and local anaesthetic toxicity. A variety of contributing factors were identified and in response the SALG and Regional Anaesthesia UK (RAUK) launched the "Stop Before You Block" (SBYB) initiative which set out the process and resources anaesthetic departments could utilize to avoid wrong site blocks (2). In 2015 wrong site blocks were specifically listed as never events by NHS England (3).

This audit describes the successful experience of introducing the "Stop Before You Block" process at Queen Elizabeth Hospital in Gateshead between 2016-2018 following 4 wrong site blocks at this hospital between 2014-2016.

Methods

Three audits were undertaken between February 2016 and January 2018. The initial prospective audit took place over 1 month in February 2016 and recorded how often "Stop Before You Block" procedures were followed along with other data about how this was recorded. Two questions were answered by the anaesthetic assistant for each case; a further four questions were answered from review of the patient notes. A re-audit with the same design was conducted November-December 2016 over 6 weeks. Finally in January 2018, a further audit was conducted over a 1 week period which specifically looked at the implementation and use of a new Local Safety Standard for Invasive Procedures: Peripheral Nerve Block (LocSSIP) introduced in November 2017; recovery nurses recorded whether it had been completed by the anaesthetic team for each patient that received a regional block during the audit period.

Results

This first audit identified a poor compliance rate of only 52% with "Stop Before You Block" procedures for the 36 cases audited. The second audit demonstrated significant improvement with a 97% compliance rate in the 30 cases audited but concluded that SBYB initiative could be improved by the introduction of a LocSSIP. The third audit identified that in the 20 cases audited 95% had fully completed LocSIPP paperwork indicating completion and recording of the SBYB protocol.

Discussion and Conclusion

This audit cycle demonstrates the significant improvements achieved in compliance with SBYB protocols in a district hospital. This was achieved through staff education, increased awareness amongst all anaesthetic team members, clear display of SBYB block posters and finally through implementation of a local safety standard (LocSIPP) to clearly integrate the SBYB procedure into routine patient care. Since the beginning of this audit cycle no further wrong site blocks have been reported and therefore the initial aim to prevent the now "never event" of wrong site block has been achieved. Future work will examine the timings of the LocSIPP documentation in practice to ensure it is used effectively to maintain patient safety and continue to avoid wrong site blocks in the future.

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Ultrasound Appearances of Peribulbar Block Complications

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Mr Fraser Cullen, BMSc(Hons), 5th year medical student, Dundee University
Professor Tracey Wilkinson MBChB, PGCHET, PhD
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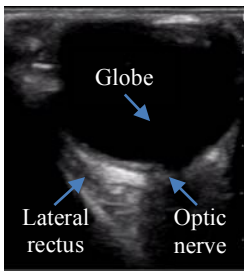
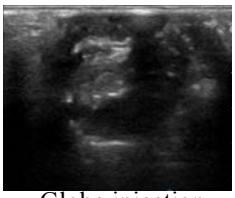
Introduction: Peribulbar block is a regional anaesthesia technique used in ophthalmic surgery. When successful, it results in akinetic anaesthesia of the eye. The technique involves orbital delivery of local anaesthetic outside the ocular muscle cone and has gained favour over retrobulbar block due to reduced potential for significant complications, although risks remain. Ultrasound permits a view of critical orbital structures and can guide needle placement and avoid untoward injection.[1] Our primary objective was to conduct a series of ultrasound-guided orbital injections in order to identify the ultrasound appearance of simulated unintended injection into 1) the eyeball 2) the optic nerve and 3) the lateral rectus muscle.

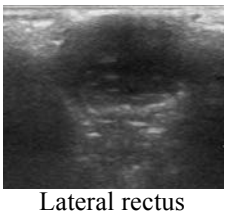
Methods: Three human cadavers embalmed using the Thiel soft-fix method were available for study. The eyes were prepared by injection of up to 5mls of Thiel and glycerol solution in the temporal quadrant until the globes felt plump to palpation. A portable ultrasound machine (Zonare, Palo Alto, CA) with linear array 4 to 10MHz transducer was used. The transducer was sheathed, lubricated and placed transversely on the eye. A 22G 50mm Stimuplex ultrasound needle (BBraun, Sheffield, UK) was inserted at the junction of lateral and medial thirds of the inferior orbital rim, then directed superomedially towards the muscle cone in order to mimic peribulbar block. Needle tips were directed to lie within structures of interest. Injection of Thiel embalming fluid dyed with green printers' ink to a total of 5ml was then performed under ultrasound visualisation, and images were recorded.

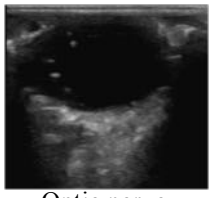
Results: On scanning, we recognised orbital anatomy, optic nerve and muscles. We visualised needle insertion and injection into the globe, optic nerve and lateral rectus muscle. However, continuous needle shaft visibility was challenging and often only the tip was visible. Nevertheless, the ultrasound appearance of each site following injection was recognisable.



Orbital anatomy


Globe injection (easy injection after palpable "pop")


Lateral rectus injection (difficult injection, minimal spread)


Optic nerve injection (visualised spread)

Discussion: Ultrasound is rarely used for placing ophthalmology blocks, but when used, it is important that injection into unintended structures is recognised. In a clinical setting, this would allow the anaesthetist to limit the potential for harm by terminating injection and instigating early appropriate management.

Conclusion: We have demonstrated in cadaveric eyes that ultrasound can visualise inappropriate injection locations including globe, optic nerve and extra-ocular muscles during attempted peribulbar blockade.

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Ethical approval from the Centre for Anatomy and Human Identification, University of Dundee

Using quality improvement methodology to implement a Rectus Sheath Catheter service in a tertiary centre.

J Fox (ST7 Anaesthetics UHW), T Bailey (consultant anaesthetist UHW), Sarah Bell (consultant anaesthetist UHW), Sharon Doble (specialist pain nurse UHW)

Introduction

Post-operative pain management for patients having open abdominal surgery is challenging, particularly when epidural techniques are not suitable. Due to the complex nature of patients in our tertiary centre we identified a need for alternative analgesia when neuraxial blockade was contraindicated in both elective and emergency procedures. Following Quality Improvement training (IQT silver level), we formed a multidisciplinary group of anaesthetists, pain nurses and surgeons initiated a Rectus Sheath Catheter (RSC) service.

Background

The first documented use of RSCs was in 1899 by Schleich [1]. By the 1980s multiple injections were performed in the abdominal wall for analgesia [2]. In the 1990s this progressed into a one off injection [3] and in 2007, with the increase in use of ultrasound, abdominal wall anaesthesia techniques became more commonly used[4]. RSCs can be used in major abdominal surgery, urology, gynaecology and paediatric surgery. Gold standard analgesia for major abdominal surgery is an epidural. RSCs are not a replacement, but an alternative or adjunct for when epidural is contraindicated.

Methods

A literature search and benchmarking of other institutions was carried out to investigate current practice in the UK. A driver diagram and an aids and barriers diagram were designed to improve project flow. Baseline data was analysed from the local National Emergency Laparotomy Audit (NELA) data and the theatre database. Prospective quantitative and qualitative data was collected by the pain team on all patients having open abdominal surgery including: speciality, type of operation, anaesthetist, surgeon, pain scores, clinician inserting RSC, initial bolus dose, use of spinal and or adjunctive analgesia. Daily visits were recorded and included: pain score (0-10), PCA use, RSC rate, problems and changes to plan. Following a local trial period (using different equipment and infusions) a guideline was developed. Data has been divided into 3 groups. Group 1 is pre RSCs (NELA data), Group 2 and group 3 include all patients who had RSC, elective and emergency. Group 2 is pre-guideline and group 3 is post guideline implementation. The project has been registered with the local audit department.

Results

Before the use of RSCs 70% of NELA patients, n=72, complained of moderate to severe pain (Visual assessment score, VAS, 6-10/10). Between March 2017 and January 2018 40 patients had a RSC. 4 patients were excluded from analysis due to incomplete data. Use of RSC led to a decrease in reported pain scores compared to baseline NELA data. Only 47% of patients in Group 1 and 29% in Group 2 complained of moderate to severe pain on day 1. This was evident regardless of whether a spinal anaesthetic was also performed. In addition pain scores were improved following introduction of the guideline. Patients who received spinal anaesthetic plus RSC had the lowest pain scores.

Mean pain scores out of 10 day 1	Group 1 (n=72)	Group 2 (n=19)	Group 3 (n=17)	**Mean pain scores out of 10 day 2**	Group 1 (n=72)	Group 2 (n=19)	Group 3 (n=17)
[redacted]							

Discussion

The use of RSCs has increased and patient pain scores have improved sequentially, indicating institutional learning. The project was presented both locally and at a regional interest group leading to uptake in nearby institutions. Surgical engagement has lead to improved acceptance and uptake. Implementation was facilitated by factors including; using QI methodology, involving multidisciplinary teams and highlighting and solving problems early. The specialist pain nurses noticed perceivable improved patient comfort. A simplified prescription and guideline standardised practice.

Conclusions

The uptake of RSCs with and without spinal opioid has increased. Mean pain scores have fallen and fewer patients are complaining of moderate to severe pain on post operative days 1 and 2. Overall, this means an improvement in patient experience and care. Targeted education for all anaesthetic and surgical colleagues has been successful, with repeated education sessions planned.

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A study of regional analgesia in paediatric pyeloplasty surgery.

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INTRODUCTION

Pyeloplasty is performed to relieve pelvi-ureteric junction obstruction that produces partial blockage of the ureter. Open procedures are suitable for combined GA and regional techniques. An epidural catheter, ultrasound-guided transversus abdominis plane block, or an opioid infusion are all considered to be adequate for analgesia[1]. The majority of the studies comparing wound catheters and epidurals in abdominal surgery have been done in adults and none in paediatric open pyeloplasties[2-4]. In our study we compared the analgesic effects of epidurals and wound catheter infiltration of local anaesthetics. The main aim of the study is to compare the pain scores between the two groups in the recovery period and during the first twenty-four hours.

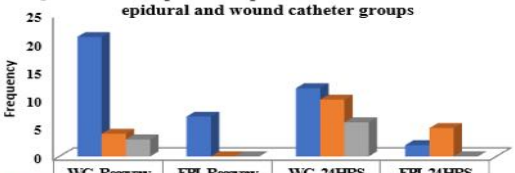
METHODS

This is a retrospective study. We queried the paediatric surgical database to capture all cases of pyeloplasty surgery from April 2011 to December 2016.All data were collected from patient notes held in Medical Records. Retrospective data were collected from the anaesthetic chart, drug chart, surgical care pathway, operative notes and nursing notes. Thirty-five children aged 18weeks to 15 years were included in this study. Patient's notes with incomplete and missing documentation were excluded.

RESULTS

Out of 35 patients in the study, 7 patients had epidural inserted and 28 patients had a wound catheter (WC) placed. WC were placed either subcutaneously (18), above the internal oblique (4), in the transverse abdominal plane (5), or in an unrecorded location (1) by the surgeons. The average duration of infusion for epidural is 34.4 hours (range 24-51 hours), whereas in the WC group the average infusion is 42.7 hours (range 24 -74 hours). All patients received intra-operative opioids either fentanyl, alfentanil or morphine. They received paracetamol and NSAIDs post-operatively, unless contraindicated. PCA/ NCA morphine was used in 57.14% (4/7) of epidural group and 50% (14/28) of WC group. Patient's pain scores were reviewed in recovery and during the first 24 hours and summarized in the Figure 1.

Figure 1 Comparison of pain scores between epidural and wound catheter groups



	WC-Recovery	EPI-Recovery	WC-24HRS	EPI-24HRS
0-3	21	7	12	2
4-6	4	0	10	5
7-10	3	0	6	0

DISCUSSION

The results shows that the epidural group had a good pain relief in the recovery room with100% of patients had a pain score between 0-3 when compared to the WC group which had 75% of patients with the pain score of 0-3.During the first 24 hours, 32% of the WC group patients showed increase in pain scores from 0 - 3 scores to 4 – 10, whereas 71% of the epidural patients showed increase in pain scores 0-3 scores to 4 - 10 at 24 hours which is statistically significant with a P value of <0.05. When comparing the two groups with the pain score of 7-10, Epidural had none but WC group had 10.7% and 21.4% of patients in recovery room and during the first 24 hours respectively.

CONCLUSION

The study shows that the wound catheter infiltration of local anaesthetics was associated with pain scores comparable with the pain scores obtained with the epidural analgesia. The wound catheter is a safe and effective alternative to epidural analgesia. A randomized control trial with a larger number and similar study population is required to compare the overall efficacy of epidural and wound infiltration analgesic techniques.

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FUNDING AND COMPETING INTERESTS
None.

Home made gel phantoms for teaching Ultrasound guided Rectus Sheath Catheter insertion – the "Ban-abdomen"

Dr Charlotte Oliver, University Hospital Wales, Cardiff

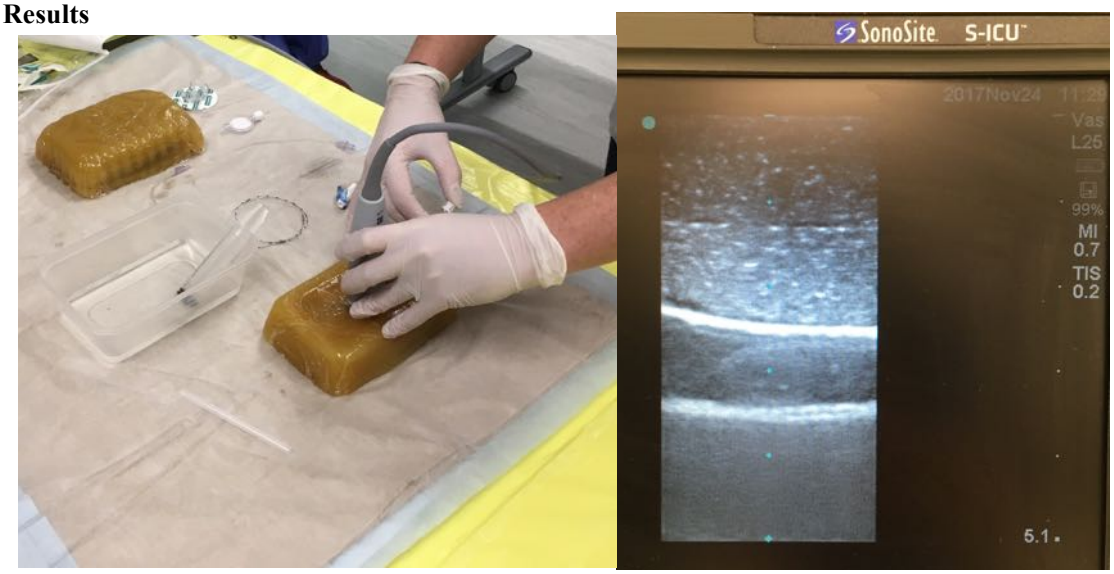
Introduction

The aim was to create a phantom for use in teaching rectus sheath catheter insertion. Our department had recently introduced a rectus sheath catheter service as part of a quality improvement project for laparotomy patients. Commercially available phantoms are expensive and so we created a simple phantom using cheap ingredients bought from the supermarket.

Methods

Liquid gelatin mixed with fybogel granules was layered in plastic trays and left to set in the fridge. Banana skins were laid onto each layer to represent the posterior and anterior fascial planes of the rectus sheath. These "ban-abdomens" were wrapped in clingfilm (skin) and used to teach ultrasound guided insertion of rectus sheath catheters. Each phantom cost £2.75 to make and took 30 minutes to prepare.

Results



The appearance of the "ban-abdomen" on ultrasound
realistically represented the anatomy of the anterior abdominal wall through the rectus sheath. The needle was well visualised within the phantom. There was a feeling of skin pop and also fascial pops when piercing the cling film and banana skin layers. Anaesthetists could practice US skills and become familiar with identifying the anatomy and how to use the rectus sheath kits. Feedback showed 13/16 respondents rated the phantom session as "excellent", 3/16 rated it "good".

Discussion

The ban-abdomen was a valuable tool which enhanced the effectiveness of the training given to insert rectus sheath catheters. Four phantoms enabled around 20 staff to undergo training. The model could be developed further for teaching other plane blocks such as transversus abdominis plane blocks. It could also be used to improve general needle-probe coordination and US skills.

Conclusions

The ban-abdomen is an effective, safe and cost-effective training tool for regional anaesthesia, enabling rapid training of a large number of staff as part of a quality improvement program.

References

The receipe for the phantom gel was kindly shared by Dr Chris Mitchell, Sir Charles Gairdner Hospital , Perth, Australia
Ethical approval not reqired. No conflicts of interest to declare.

Audit of post pain after shoulder arthroscopy surgeries

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Background: There are an increasing number of shoulder arthroscopies done as day case procedures. Regional anaesthesia is increasingly preferred as the sole anaesthetic in suitable cases along with supplemental analgesia in the postoperative period.

Objectives: Our aim was to evaluate post-operative pain, use of oral analgesia, rate of readmission and overall satisfaction with Regional Anaesthesia in patients undergoing Shoulder arthroscopies surgery under Nerve block.

Methods and materials: We prospectively examined 40 patients over a period of 6 months undergoing Shoulder arthroscopy as a day case procedure. Patients were consented on preoperative visit. Patients received only USG interscalene block as a sole anaesthetic for the surgery. Patients either received Ropivacaine or combination of Lignocaine and Bupivacaine as per 'anaesthetists' preference. Parameters were evaluated with telephone follow-up between 4-7 days post op. No conflict of interests.

Types of surgery:
Sub acromial decompression 14, Rotator cuff repair 9, Shoulder stabilization 7, Debridement 1, Capsular release 6, SLAP repair 2, Diagnostic arthroscopy 1

Result:

	Average Pain	***>5 Pain***	***Sleep disturbance***
Day 1	2.8/10	22.5%	37.5%
Day 2	3.95/10	32.5%	37.5%
Day 3	3.05/10	15 %	35%

Patient satisfaction with Regional anaesthesia 9.4/10
Average time for the first episode of pain after block 15 hrs.
Use of strong pain relief (Oral morphine+NSAIDs+Paracetamol) reduced from 20% on day 1 to 15.6% on day 3 with overall reduction in consumption of oral morphine.

Discussion:
-Shoulder arthroscopy surgeries are increasingly being done as a day case procedure and regional anaesthesia is being preferred as the sole anaesthetic.
-Prolonged postoperative pain relief with average duration of 15 hours.-
-Post-operative instructions and analgesia were provided as per the recommendation by AAGBI in 100% cases.
-No association between the LA used for the block and post-operative pain scores.
-Overall satisfaction with Regional anaesthesia was scored at an average of 9.4/10
The average pain score was slightly higher on day 1 but the overall consumption of strong analgesics was reduced with less sleep disturbance on day 3

Conclusion:
1) Subjective average pain scores were comparable throughout the first 3 post-operative days but the overall requirement of analgesics was reduced.
2) Good Overall patient Satisfaction with regional anaesthesia

3) Use of strong analgesics like oral morphine was reduced on the third day
4) A successful day case shoulder service has been established using solely regional techniques with appropriate post-operative opiates at home

Can we do day case total shoulder replacement (TSR)? A retrospective review of our interscalene blocks (ISB) and discharge barriers at the University Hospital of Llandough, Cardiff.

Paul Carter, Waheeb Al-Azzani, Mark Sandby-Thomas, Tessa Bailey

Introduction -The potential benefits of day surgery include better clinical outcomes, patient satisfaction and cost effectiveness1. The prospect of day case total shoulder replacement (TSR) presents a complex challenge. Pain control, potential blood loss, and the comorbidities presented by the patient cohort are the obvious challenges 2. Here we seek to identify potential barriers, and investigate the feasibility of implementing day case TSR at the University Hospital of Llandough (UHL), Cardiff.

Methods -The clinical notes of 25 patients who had undergone TSR performed by the same surgeon, under GA and single shot ISB were retrospectively reviewed. Demographics, analgesic management and antiemetic use were recorded. The time between ISB performance and first dose of strong opiate analgesia was calculated. Length of stay, and barriers to discharge beyond day 1 were recorded. Ethics committee approval was not required for our study.

Results - All of the patients received paracetamol and fentanyl intraoperatively, 8 patients received an NSAID. Postoperative regular analgesia ranged from paracetamol plus either a NSAID or moderate opioid or both. Two patients required intravenous opiates in recovery, indicating the ISB to be inadequate. Of the remaining 23 patients 13 required strong opioid during their inpatient stay, 4 patients required a moderate opioid only and 6 patients did not require any PRN analgesia. The median time interval from ISB to strong opioid was 21hrs (range 9-48hrs.) The daily strong opioid requirement of the 13 patients requiring strong opioids is illustrated in table 1.

Table1. Daily strong opioid requirement of the 13 patients requiring strong PRN opioids.

Thirteen patients received dual antiemetic therapy intraoperatively (dexamethasone and ondansetron) the remaining received single antiemetic therapy. Six patients required a single dose of antiemetic postoperatively. Eight patients were discharged on day 1 postoperatively, 4 on day 2, 8 on day 4 and 5 patients had an inpatient stay of greater than 4 days. Barriers to discharge consisted of: medical reasons (2), occupational therapy, physiotherapy or social input (6), shoulder dislocation (1), blood transfusion requirement (4), unknown (2) and nerve injury concerns (2, one related to ISB and one surgical.)

Discussion - Eight out of 25 patients in this review were discharged day 1 postoperatively and had the potential to undergo day case TSR. This cohort of patients suitable for day surgery could further be increased by liaison with all members of the multidisciplinary team (MDT) and the development of a bundle strategy. Identification of preoperative anaemia and those patients at risk of blood loss coupled with patient blood management strategies including tranexamic acid would result in lower use of transfusion. Input from occupational therapy, physiotherapy and social services may help address common barriers to discharge. Our analgesic prescribing shows variation, and a standardised regime including a regular moderate opioid would help reduce strong opioid requirement and assist future data analysis. The range of the duration of our single shot ISB (or time interval to strong opioid) and the opioid requirements indicates a strong opioid cover would be required to facilitate day case

surgery. Timing of opioid doses will be important; options include immediate release preparations as rescue or regularly prescribed modified release preparations. Postoperative nausea and vomiting is not a barrier to discharge from our analysis.

Conclusion – We have identified that day case TSR is feasible in a cohort of patients at UHL and our results identify areas to target to increase this cohort. Nausea and vomiting is not a barrier to discharge, and pain is negotiable with an outpatient strong opioid strategy. A prospective inpatient pilot of strategies suggested here along with input from the MDT will help further support the feasibility of day case TSR at UHL.

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Improving Regional Anaesthesia safety: a DGH experience.

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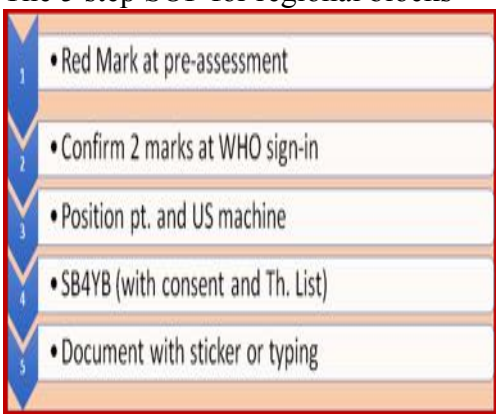
INTRODUCTION: Stop Before You Block (SBYB) campaign was launched in 2010 & has been widely adopted by the anaesthetic community. Despite this, there are wrong sided blocks being reported and it is a never event now. Inspite of recent SBYB campaigning, there have been 5 incidents of wrong sided blocks in East Kent NHS trust over the last 5 years. Our aim was to look at our local regional anaesthesia (RA) practice across the trust and the awareness of SBYB, and then propose changes to avoid similar incidents in future.

METHODS: We studied the root cause analysis for all mentioned cases with the agreed action plans. We then conducted a 10 point survey of our current RA practice and SBYB awareness using Surveymonkey.We also reviewed local protocols across other trusts and available guidance from the regional anesthesia bodies like RA-UK and RCOA.

RESULTS: The level of experience in performing RA was greatly variable amongst the local anaesthetists, with some rarely performing RA in their practice. Only 15% of the anesthetists mark the site of the block separately. Only 67% religiously have a 'stop moment' before needle insertion.

DISCUSSION: Multiple human factors have been highlighted in the literature that can contribute to wrong sided blocks. However, the lack of a mark specific to the block, distraction and no "Stop" moment just before needle insertion are the main failing points in the 5 cases studied. We generally have certain individual ways of doing SBYB.However, we feel that a standardized protocol is a must to provide a safe environment while performing RA .In 2005 the NPSA has introduced a recommendation for surgical site marking. This was later adopted by the WHO in the "Guidelines for Safe Surgery Campaign" in 2009.[3] After dissemination of the results, we introduced a new Standard Operating Procedure (SOP) following discussion with colleagues. To date the authors are not aware of any guidelines that enforce a similar marking prior to performing a unilateral nerve block.

The 5 step SOP for regional blocks



CONCLUSION: After survey results and learning from incidents previously encountered, we conclude that cultural change is essential for SBYB campaign. No single improvement in the care of surgical patients has had as profound an impact as the advancement of safe practices in anaesthesia.
This involves reinforcing the importance of prevention, introducing extra steps to reinforce the process, auditing & reauditing of practice.
We have recommended a 5 point Standard Operating Procedure (SOP) with emphasis on marking of the BLOCK SITE by the anaesthetist during preassessment with a RED pen using the letter "B" for Block different to surgical mark. It also emphasizes the importance of performing SBYB correctly and documentation of the same. We aim to incorporate this as a SOP for the blocks across the trust.
We have also recommended separate regional anaesthesia page in the anesthetic care plan with regional anaesthesia consent, procedure details and SBYB incorporated.

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Validating a day surgery protocol for breast surgery – taking a regional approach.

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No conflicts of interest

Introduction Breast surgery has a high incidence of post-operative nausea and vomiting affecting up to 60-80% of untreated patients [1,2] and can delay discharge in day case surgery. Post-operative nausea and vomiting (PONV) rates and pain scores can be reduced with prophylactic anti-emetics and regional an aesthetic techniques.

Methods We reviewed all delayed discharges for women undergoing a mix of day case breast surgery at Central Middlesex Hospital over a 6-month period in 2017/18. They were compared with patients who had previously been audited in the year after receiving a regional anaesthetic technique (pectoral block/ serratus plane block and paravertebral block) as their primary method of pain control. The information gathered was used to write a protocol for day case breast surgery.

Results

- Over a 6-month period in 2017, 33 patients received regional anaesthesia as their primary method of pain control. Zero of these patients had a delayed discharge secondary to PONV or pain.
- Over a 6-month period 14 of 318 patients (4.4%) required an unplanned overnight admission because of PONV or pain. 4 sets of notes were unavailable for full analysis. 13 of these patients had received a general anaesthetic using opioids as their primary method of pain control (no regional anaesthesia) and required admission for uncontrolled PONV. One patient had received a regional anaesthetic for pain control and required an admission for uncontrolled pain. This was secondary to presumed block failure.
- Patients who had a delayed discharge required on average 10mg of morphine (combined intra- and post-operative requirements). This is compared to an average of 2.1mg morphine used in patients receiving regional anaesthetic techniques.
- Non-opioid analgesics (NSAIDS) were not utilised in the majority of patients despite no contra-indications. 2 of the patients did not receive paracetamol intra-op despite receiving IV morphine.
- Only 4 (40%) of the patients who had a delayed discharge received dual agent anti-emetic prophylaxis and subsequently all 10 (100%) required further anti-emetic treatments in recovery. 7 (70%) of these patients required at least 2 different agents and 3 patients required 3 or more different agents to control their PONV.

Conclusions and Recommendations The results have validated the following recommendations to reduce the risk of PONV and pain in breast surgery.

Pain control:

- A 'Regional First' approach should be taken where appropriate to minimise opioid use.
- Utilise non-steroidal anti-inflammatories and paracetamol where appropriate to minimise opioid use.
- If opioids are required a dose of at least 0.15mg/kg may be required

PONV prevention:

- Opioid sparing techniques as described above
- Dual anti-emesis prophylaxis as high risk population
- Avoid nitrous oxide.
- Consider TIVA in patients with higher APFEL score.

A 'Regional Box' has been created providing all the suitable equipment required for US guided regional anaesthesia as well 3 new USS machines throughout day theatres. The above data has allowed us to obtain BIS monitoring in day theatres to facilitate the use of TIVA. Teaching to improve awareness of the facilities in day theatres was available to all trainees and consultants and 2 monthly practical workshops have been provided to trainees and consultants who wish to learn different regional anaesthetic techniques.

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Perineural and fascial plane catheters- how to iron out the kinks.

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Introduction: At our hospital, we have a growing regional anaesthesia service providing over 400 peripheral nerve or fascial plane catheters so far in 2017. We have recently had 2 episodes where rectus sheath catheters, which are our first line pain management for midline laparotomies, have become knotted whilst in situ and therefore been difficult to remove. One catheter required a small surgical incision (on the ward under local anaesthetic) to remove it, whilst the other was removed using artery forceps. Both were found to be knotted after removal from the patient. On each occasion the insertion of the catheter had not been documented. At out institution, most rectus sheath catheters are inserted by an anaesthetist using ultrasound, however some are placed at the end of the operation, by the surgeon under direct vision.

It is well known that perineural and fascial plane catheters may kink and knot, however this is a rare phenomenon with an incidence of 0.13% [1]. Our recent problems have caused us to re-think our practice and highlight some key issues.

Discussion: Documentation of any procedure is essential. When the same procedure maybe carried out by 2 specialities documentation is potentially even more important. The surgeons at our institution often suture the rectus sheath catheters after insertion, whereas anaesthetists do not. This information is key when attempting to remove the catheter. We have changed our practice, so that any rectus sheath catheter (inserted by either surgeon or anaesthetist) will now be documented by the anaesthetist within the notes (although, obviously, it would be expected that the surgeons do document any procedure they perform). The decision for this was prompted by the fact that anaesthetists are the first port of call when a rectus sheath catheter is difficult to remove, and we needed a mechanism to improve access to information as to how the catheter had been secured.

We routinely leave rectus sheath catheters in for 3-5 days. After this amount of time, we would expect that they may be easily removed with minimal resistance. If there is any difficulty in removing the catheter first line management should be to flush the catheter with 10 mls of 0.9% saline, to make space around the catheter and dislodge any fibrous tissue attached to the catheter. This may fail if the catheter is knotted as the catheter is often occluded. We would then advocate using artery forceps to grasp the most proximal exposed part of the catheter, allowing increased tension and better manipulation of the angle at which force is applied to the catheter. If this fails surgical exploration may be required, depending on how much catheter is left in the patient, this may be done in a ward-based setting as opposed to a return to theatre. Fluoroscopy guided catheter removal has also been described [1].

We have now changed our practice with regards to how much catheter is left in situ. The optimal length of rectus sheath catheter insertion (or any fascial plane catheter) is unknown. Case reports of knotted perineural catheters imply that if more than 10cm of catheter is inserted it will increase the likelihood of kinking [2,3,4]. Our practice was to insert as much as possible, up to 15cm, however on reflection this probably increased the chance of knotting of the catheter. Our catheters have multiple orifices at the distal 3cm, and we now routinely only leave 5cm in situ; allowing adequate catheter for infusion of local anaesthetic, without excess catheters to kink and knot. Exact mechanisms that cause catheters to kink is unknown, but the most likely risk factor is a long length of catheter inserted either around the nerve or within a fascial plane. Our current catheters, PlexoLong 20g (Pajunk, Germany), are notably stiffer than others we have used, such as the Portex 20g Nylon epidural catheters (Smiths Medical, USA). This may also lead to an increased risk of knotting as they are more likely to kink when pushed up against resistance, such as a fascial plane.

Conclusion: Kinked and knotted catheters are rare complications. With the increasing applications of continuous peripheral nerve and fascial plane catheters this is an important issue and knowledge of management of a difficult to retrieve catheter is essential.

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