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British Society of Orthopaedic Anaesthetists

ABSTRACT BOOKLET

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Oral Presentations

Title	Presenter
A preoperative tool to predict length of stay in orthopaedic surgery patients.	Sai Bhargava
Management of anaesthesia for total hip replacement of a patient with previous anaesthesia-induced Takotsubo Cardiomyopathy	Rachel Lee
Peri-operative DNACPR audit	Ugeetha Gangen

A preoperative tool to predict length of stay in orthopaedic surgery patients.

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We have developed a proprietary algorithm based on these factors to calculate the approximate length of stay in orthopaedic patients we can thereby improve patient flow, optimise resources, surgical planning, and manage bed demand through more accurate prediction. The current research points prognostic factors including ASA score, frailty, BMI, METs, anticoagulant and steroid usage, and surgical sub-specialty influence on length of stay in hospital.

Methods

A retrospective study of ~4000 records were inspected. Only, one hundred thirty-eight orthopaedic cases were suitable and were used to compare the validity of the calculator and comparison of the results was done statistically.

The multivariable regression model generated predictions from preoperative variables. The model's performance was checked using mean absolute error (MAE), root mean square error (RMSE), R^2 , and a paired t-test (p-value), with 95% confidence intervals. Analyses were performed using Python (v3.11) and SciPy.

Results

The model achieved $R^2 = 0.35$, MAE = 3.33 days, RMSE = 6.64. Mean prediction error was 0.69 days (standard deviation 6.63), with ninety-five percent confidence interval [-0.42 to 1.81]. A paired t-test comparing predicted vs actual LOS showed no significant difference ($p = 0.22$). For the cohort, LOS: mean 5.88 days (standard deviation 8.27), median 3.0 days (interquartile range 2.0–7.0, range 1–63); DS LOS: mean 5.18 days (standard deviation 4.49), median 3.8 days (interquartile range 3.3–4.5, range 1.0–24.5).

A preoperative tool to predict length of stay in orthopaedic surgery patients.

Subgroup performance:

Arthroplasty (n = ninety-eight): $R^2 = 0.46$, MAE = 2.26, RMSE = 3.62

- Hips (n = forty-four): MAE = 2.08, RMSE = 3.21

- Knees (n = fifty-one): MAE = 2.47, RMSE = 4.01

- Shoulders (n = three): MAE = 1.30, RMSE = 1.37

Spinal (n = twenty-four): $R^2 = -2.15$, MAE = 2.59, RMSE 4.99

Oncology/EPR (n = sixteen): $R^2 = -0.06$, MAE = 11.01, RMSE = 16.22

The tool demonstrated strong accuracy in arthroplasty groups, with wider variation in complex oncology cases. It is now in further advanced development stage to integrate in to clinical workflow.

Graphs and References Will be included in main presentation/poster

Management of anaesthesia for total hip replacement of a patient with previous anaesthesia-induced Takotsubo Cardiomyopathy

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Patients with Takotsubo cardiomyopathy typically present with chest pain, dyspnoea and ECG changes alongside transient left ventricular systolic dysfunction [1]. The pathophysiology remains unclear, but the prevailing theory is of a stressful life event causing excessive catecholamine release and subsequent myocardial injury [1]. Potential triggers include surgery, induction of general anaesthesia and critical illness [2]. We present the case of a patient who developed Takotsubo cardiomyopathy following spinal anaesthesia, and the anaesthetic management for a subsequent lower limb surgery.

A 69 year old female patient was admitted electively for a left total hip replacement. Within minutes of spinal anaesthesia, and prior to commencing surgery, she developed symptoms of severe headache and chest tightness with marked hypertension (BP 250/130mmHg). The ECG demonstrated new widening of the QRS complexes and frequent ventricular ectopy. Surgery was abandoned and she was admitted under cardiology for monitoring and follow up. These symptoms resolved within 24 hours. There were no features suggestive of anaphylaxis and 24-hour tryptase was normal. Highly sensitive Troponin T (Roche Elecsys) increased from 140 to 602 ng/L within 8 hours post-anaesthesia. A focused transthoracic echo showed hypokinesis of the basal to mid left ventricle with apical sparing. Follow-up ECG and echocardiogram at three weeks later had improved. A diagnosis of spinal anaesthesia-induced Takotsubo cardiomyopathy was made.

Management of anaesthesia for total hip replacement of a patient with previous anaesthesia-induced Takotsubo Cardiomyopathy

This patient returned for her planned surgery six months later. A low stress anaesthetic was planned. A dexmedetomidine infusion was commenced 15 minutes prior to induction, starting at 0.5mcg/kg/h and increasing to 1.0mcg/kg/h. An arterial line was inserted. Once the sedating effects of dexmedetomidine were noted, anaesthesia was induced with remifentanyl 0.3mcg/kg/min and propofol TCI (Schnider) at 3mcg/ml. At a bispectral index of less than 50, rocuronium 50mg was given. A metaraminol infusion (0.5mg/ml) was run at 3 to 5 ml/h to maintain systolic blood pressure. Bag mask ventilation and intubation were straightforward. Anaesthesia was maintained with total intravenous anaesthesia. A morphine bolus of 4mg was given prior to knife to skin. A further 4mg morphine was given along with local anaesthetic infiltrated by the surgical team (adrenaline was omitted from the standard mix). The dexmedetomidine infusion was stopped half an hour prior to extubation. After an uneventful recovery, including a precautionary 24-hour period on the High Dependency Unit, she was discharged from hospital two days post-surgery.

References

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Peri-operative DNACPR audit

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According to the Resuscitation Council of the United Kingdom (UK), DNACPR stands for “Do Not Attempt Cardiopulmonary Resuscitation” [1]. The Seventh National Audit Project (NAP7) found that the surgical population in the UK is becoming increasingly older, frailer and at higher risk of peri-operative cardiac arrest [2]. High-risk patients include those with a Clinical Frailty Scale (CFS) of five or more, an American Society of Anaesthesiologists (ASA) score of five, or an early mortality risk of greater than five percent. Additionally, NAP7 found that there is an increasing number of patients presenting to theatre with a DNACPR order in place, with the main surgical discipline being Orthopaedics. The Association of Anaesthetists recommends early, documented DNACPR discussions for high-risk patients presenting for surgery.

These discussions should involve the anaesthetic team and focus on what resuscitative measures will be offered should the patient arrest in the perioperative period, promoting clarity and shared understanding in emergencies whilst respecting patients' wishes. These discussions are important, as the chances of successful resuscitation are higher in the theatre environment. For most patients, temporarily rescinding the DNACPR order during the peri-operative period would be appropriate [3, 4].

Methods

This retrospective observational study will review anaesthetic records from King's College Hospital from December 2024 to March 2025 via the Epic Electronic Health Record. The focus of this audit will be on peri-operative DNACPR documentation in patients presenting for surgery, focusing on whether and how anaesthetists documented discussions with patients and families regarding rescinding and re-instating DNACPR orders, as well as which interventions (e.g., intubation and ventilation, ICU admission, inotropic support) were considered acceptable. Other important variables include the type of operation or procedure performed and the associated surgical discipline.

Peri-operative DNACPR audit

Results

Forty-nine cases were audited: the average age was 75 years with 55% being female and the average CFS score was five. In terms of surgical spread, 19 cases were Orthopaedics, 11 were from General Surgery and the remaining cases were a mix of Neurology, Cardiology, Interventional Radiology, Urology and Vascular Surgery. Twenty-five of the forty-nine cases audited had pre-operative DNACPR orders in place. Only one of the twenty-five patients with a pre-operative DNACPR order had a documented discussion between the anaesthetist, the patient, and the family. The conclusion of this audit is that Anaesthetic documentation for patients with an active DNACPR order having surgery is rarely completed. To change this practice, a formal email has been sent to the Anaesthetics Department at King's College Hospital to remind all doctors to document peri-operative DNACPR discussions. The results of this audit have already been presented at the department's Clinical Governance Meeting to raise awareness. A change to the Epic Electronic Health Record will be made: a mandatory temporary rescinding of resuscitation prompt will open for all surgical patients with DNACPR orders to ensure doctors complete the required documentation.

References

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Poster Presentations

Abstract	Title	Presenting Author
1	Stick With It: Improving Compliance in Regional Anaesthesia Recording	Aashinee Mehta
3	Advanced regional anaesthesia techniques leads to opioid free scoliosis surgery- a case report	Dhruti Pandya
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Stick With It: Improving Compliance in Regional Anaesthesia Recording

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Introduction

According to “Litigations related to anaesthesia: analysis of claims made against the NHS in England 2008–2018”, regional anaesthesia accounted for the largest proportion of anaesthesia-related litigation, at 24% [1]. Within our trust, documentation of regional anaesthesia (RA), particularly peripheral nerve blocks (PNB), showed notable variation. To address this, stickers were introduced as prompts to ensure adherence to safe practice and accurate record keeping. Their use significantly reduced the risk of incomplete documentation, particularly in relation to consent and the procedure performed [2,3].

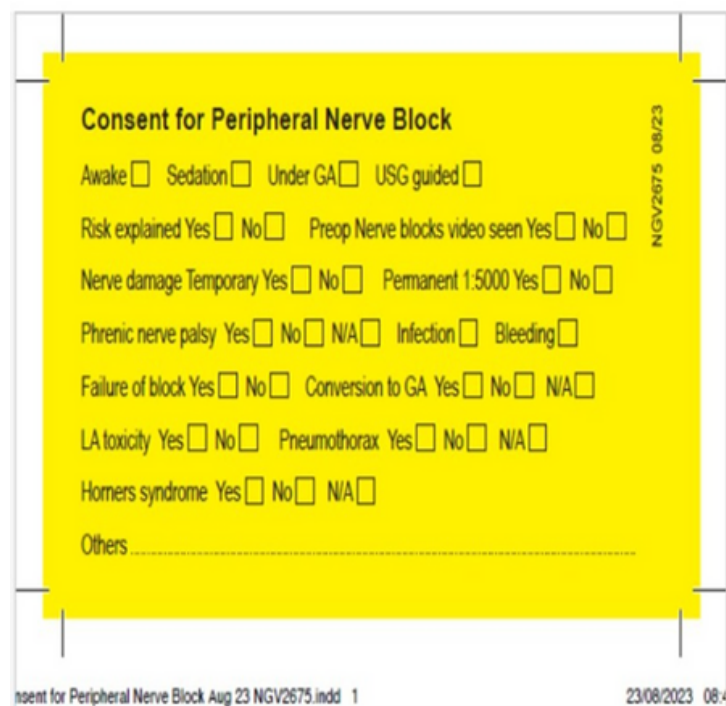
Methods

The aim was to introduce two regional anaesthesia stickers—one for documenting consent and another for procedure details—and to assess improvements in documentation for each. Anaesthetists and ODPs were encouraged to incorporate them into routine practice. Two PDSA cycles were conducted to evaluate their use, with data collected over a six-month period to compare the completeness of documentation across different categories for both consent and procedure. Results: The introduction of these stickers functioned as a checklist for users. This simple, cost-effective intervention promoted safer and more standardized documentation, ultimately enhancing the quality of perioperative care. Beyond ensuring consistency, the stickers also simplified documentation, provided timely prompts, and significantly improved record-keeping, particularly in relation to consent and the procedures carried out. However, when it came to the use of consent for RA stickers, practices varied widely, as individual clinicians differed in their views on the necessity of including them for specific procedures. Similarly, the level of detail shared with patients during the consent process differed considerably among clinicians. We now await the findings of NAP 8 to provide further guidance on this matter.

Stick With It: Improving Compliance in Regional Anaesthesia Recording

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Consent for Peripheral Nerve Block

Awake ☐ Sedation ☐ Under GA ☐ USG guided ☐

Risk explained Yes ☐ No ☐ Preop Nerve blocks video seen Yes ☐ No ☐

Nerve damage Temporary Yes ☐ No ☐ Permanent 1:5000 Yes ☐ No ☐

Phrenic nerve palsy Yes ☐ No ☐ N/A ☐ Infection ☐ Bleeding ☐

Failure of block Yes ☐ No ☐ Conversion to GA Yes ☐ No ☐ N/A ☐

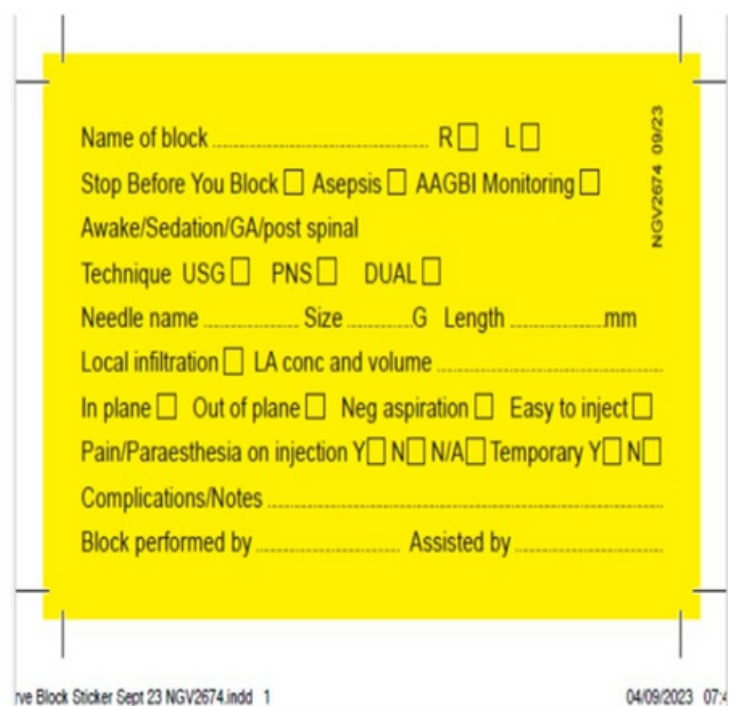
LA toxicity Yes ☐ No ☐ Pneumothorax Yes ☐ No ☐ N/A ☐

Horners syndrome Yes ☐ No ☐ N/A ☐

Others _____

NGV2675 08/23

Consent for Peripheral Nerve Block Aug 23 NGV2675.indd 1 23/08/2023 08:4



Name of block _____ R ☐ L ☐

Stop Before You Block ☐ Asepsis ☐ AAGBI Monitoring ☐

Awake/Sedation/GA/post spinal _____

Technique USG ☐ PNS ☐ DUAL ☐

Needle name _____ Size _____ G Length _____ mm

Local infiltration ☐ LA conc and volume _____

In plane ☐ Out of plane ☐ Neg aspiration ☐ Easy to inject ☐

Pain/Paraesthesia on injection Y ☐ N ☐ N/A ☐ Temporary Y ☐ N ☐

Complications/Notes _____

Block performed by _____ Assisted by _____

NGV2674 09/23

Peripheral Nerve Block Sticker Sept 23 NGV2674.indd 1 04/09/2023 07:4

Advanced regional anaesthesia techniques leads to opioid free scoliosis surgery- a case report

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Scoliosis surgery is often associated with significant postoperative pain usually requiring high doses of opioids. The common side effects of opioids such as nausea and ileus can be debilitating increasing post operative complications and length of stay [1].

Case Summary

A 14 year old female with idiopathic scoliosis presented for surgery with a 94° main thoracic curvature and a 70° lumbar curvature. She underwent fixation from T3 to L4 including four level Ponte osteotomies.

The anaesthetic technique involved total intravenous anaesthesia with propofol, remifentanyl, dexmedetomidine (0.25 mcg/kg/hr) and spinal block at L3-4 with 0.3mg morphine in 3mls saline. Bilateral single shot ESP blocks were done at T4 and L1. Intraoperative analgesia included paracetamol, parecoxib and ketamine. No long acting opioids were administered.

Bilateral ESP catheters were inserted lateral to the instrumentation rods prior to emergence. A patient controlled analgesia bolus pump was programmed to deliver 20mls of 0.2% ropivacaine every four hours for 72 hours.

The post operative analgesia was very effective with the maximum pain score reported to be 5. Only two doses of codeine, 30mg each, were administered. She mobilised independently within 15 hours and was discharged by the physiotherapists on day three.

Discussion

The use of ESP catheters in this adolescent scoliosis case provided effective, extended analgesia without the need for high-dose systemic opioids. This approach reduced the risk of common opioid related adverse effects such as nausea, vomiting, and ileus, factors that can delay recovery. This case highlights the potential of regional anaesthesia techniques to optimise perioperative pain management in major spinal surgery.

Advanced regional anaesthesia techniques leads to opioid free scoliosis surgery- a case report

Conclusion

ESP catheters, as part of a multimodal analgesic regimen, in this adolescent scoliosis case, provided effective post operative analgesia facilitating early mobilisation and recovery. Their use may support enhanced recovery pathways in spinal surgery.

References:

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Ergonomic table height and its impact on laryngeal view and operator discomfort in videolaryngoscopic intubation

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Videolaryngoscopy has become increasingly recommended as a first-line device for airway management, providing improved glottic views compared with those of direct laryngoscopy. However, ergonomic factors such as operating table height have not been well investigated despite their potential impact on laryngeal view, intubation success, and operator discomfort. We hypothesised that different table heights could affect glottic exposure and operator ergonomics during videolaryngoscopic intubation.

Methods

After ethics approval, in this prospective randomised study, 20 adult patients (ASA I–III, BMI ≤ 35) undergoing general anaesthesia with tracheal intubation were allocated to one of four groups according to table height, defined by the patient's external auditory meatus aligned with the operator's umbilicus (U), lowest rib margin (R), xiphoid process (X), or nipple (N). Videolaryngoscopic intubation was performed using a Macintosh-type videolaryngoscope. The primary outcome was the percentage of glottic opening (POGO) score. Secondary outcomes included intubation success rate, time to intubation, and operator discomfort assessed using a numeric rating scale (0–10).

Ergonomic table height and its impact on laryngeal view and operator discomfort in videolaryngoscopic intubation

Results

POGO scores tended to be lower in the U group (69.0 ± 26.6) compared with the other groups (89.0 ± 8.5) ($p=0.168$). First-attempt success was universally high (100%). Intubation times did not differ significantly among the four groups. Operator discomfort during laryngoscope insertion was higher in N (5.1 ± 2.2) than in R (1.6 ± 1.3 , $p = 0.0006$) and X (2.6 ± 2.7 , $p = 0.014$). Low back and knee flexion were more frequent in U than other groups ($p = 0.036$, 0.014). No major complications occurred. In conclusion, table heights at the operator's lowest rib margin or xiphoid appear to optimise videolaryngoscopic intubation by improving laryngeal view and reducing operator discomfort.

References

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Sedation timing in trauma and orthopaedic cases: a departmental survey

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A common anaesthetic approach to trauma and orthopaedic cases involves combining regional and/or neuraxial techniques with sedation [1]. Following a patient complaint about differences in the timing of sedation during their two hip replacements, we surveyed our department's practice to explore variation in approach and rationale.

Methods

A survey was sent to all anaesthetists in the department. Respondents were asked where they usually commenced sedation (theatre, anaesthetic room, or both equally), their rationale, circumstances in which they would deviate, whether they informed patients of the timing, their grade, and how often they undertook trauma and orthopaedic lists.

Results

We received 22 replies (20 consultants and two ST4+). 12(55%) usually started sedation in theatre, 5(23%) in the anaesthetic room, and 5(23%) in both equally. Regular T&O anaesthetists were less likely to routinely start sedation in theatre - 4(44%) vs 9(64%).

Starting sedation in the anaesthetic room was justified by avoiding patient anxiety associated with experiencing the theatre environment. This group would start sedation in theatre instead in perceived high-risk patients, such as those with airway concerns (eg severe OSA), or if the patient became unstable for example experiencing hypotension post-spinal. Starting sedation in theatre was justified for safety reasons (airway management, monitoring, assessing the block) and logistical reasons (positioning). 10(83%) respondents in this group would start sedation in the anaesthetic room instead if the patient was extremely anxious. 14(64%) respondents routinely told patients where the sedation would be commenced, 4(18%) did not and 4(18%) did in some circumstances.

Sedation timing in trauma and orthopaedic cases: a departmental survey

Conclusion

There is substantial variation regarding the timing of sedation, reflecting a balance between patient comfort and perceived safety. Clearer departmental guidance and consistent communication with patients may help manage expectations.

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Immediate Life Threatening Retroperitoneal Haemorrhage and Cardiac Arrest Following Elective Total Hip Replacement: A Case Highlighting Early Diagnosis and Multidisciplinary Management

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Introduction

Retroperitoneal hemorrhage is a rare but potentially fatal complication following total hip replacement (THR), often presenting with non-specific symptoms that challenge early diagnosis. We describe a critical case of acute retroperitoneal hemorrhage leading to cardiovascular collapse and requiring extensive multidisciplinary management.

Case Presentation

A 79-year-old female (ASA II) patient underwent elective uncemented left THR under spinal anesthesia. Intraoperatively, she remained hemodynamically stable until towards the end of surgery and in the immediate postop period where she became tachycardic and borderline hypotensive. Surgical estimated blood loss was reported as 200ml. 12 lead ECG was done which was non ischemic and VBG sent with possible differentials of Periop MI, Stroke, Embolic episodes. She developed profound hypotension, sweating, and became unrousable. A venous blood gas revealed severe metabolic acidosis (lactate 15 mmol/L, pH 7.04) and Hb 91 g/L). Despite aggressive resuscitation, she experienced a pulseless electrical activity (PEA) cardiac arrest immediately post intubation, with return of spontaneous circulation (ROSC) achieved after two cycles of CPR. 4H and 4T reversible causes review and A focused assessment with sonography for trauma (FAST) scan raised suspicion of intra-abdominal bleeding (Hb dropped to 53 g/L on 3rd ABG). Major Haemorrhage protocol was activated and Urgent general and vascular surgical consultation led to an emergency laparotomy, where active bleeding from a branch of the internal iliac vein was identified, ligated and secured. Post-operatively, the patient required two days of intensive care for ventilatory support and correction of severe acid base, electrolyte and coagulopathy imbalances, achieving a neurologically intact recovery and discharged to ward on day3 and home after 2 weeks.

Immediate Life Threatening Retroperitoneal Haemorrhage and Cardiac Arrest Following Elective Total Hip Replacement: A Case Highlighting Early Diagnosis and Multidisciplinary Management

Discussion

This case highlights the insidious but sudden onset of retroperitoneal haemorrhage post-THR and the critical importance of a high index of suspicion for internal bleeding in patients with unexplained post-operative haemodynamic instability, profound metabolic acidosis, and acute anaemia. Prompt recognition, early point-of-care ultrasound (FAST), aggressive resuscitation, and timely multidisciplinary surgical intervention were paramount for a positive outcome. The case also underscores the vulnerability of vascular structures during hip replacement surgeries and the necessity of meticulous post-operative care. Conclusion: Life-threatening retroperitoneal haemorrhage following THR, though rare, demands immediate recognition and a coordinated multidisciplinary response. This report reinforces the importance of vigilance for internal bleeding, rapid diagnostic work-up, and aggressive management to ensure patient survival and neurologically intact recovery.

Keywords

Perioperative Cardiac Arrest, Haemorrhage, Hip replacement, Retroperitoneal bleeding, Total hip arthroplasty, Vascular injury

Conflicts of Interest

The authors declare no conflicts of interest.

Patient Consent

Informed consent was obtained from the patient for the publication of this case report. A signed patient consent form is available for review.

Immediate Life Threatening Retroperitoneal Haemorrhage and Cardiac Arrest Following Elective Total Hip Replacement: A Case Highlighting Early Diagnosis and Multidisciplinary Management

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Cement and clarity: A cross-sectional study of perioperative steroid use in cemented hip arthroplasty

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Dexamethasone is commonly administered perioperatively for its antiemetic, analgesic, and anti-inflammatory effects. In cemented hip arthroplasty, its role is particularly relevant due to the inflammatory response triggered by bone cement implantation syndrome and the need for optimal postoperative recovery. This study examines the use of dexamethasone in patients undergoing cemented hip arthroplasty at West Hertfordshire University hospitals, highlighting patterns of administration and identifying clinical factors influencing its omission.

Methods

A retrospective review was conducted on 112 patients undergoing cemented hip arthroplasty, with clearly recorded dexamethasone administration status. Patients were classified as elective or emergency/trauma cases. Ethics approval was obtained from the institutional review board. Descriptive statistics were used to report proportions. Reasons for non-administration were extracted from clinical notes, with particular attention to metabolic contraindications such as diabetes and hyperglycaemia.

Case Type	Total Cases	Received Dexamethasone	Did Not Receive Dexamethasone
Elective	86	66	20
Emergency	26	15	11

Cement and clarity: A cross-sectional study of perioperative steroid use in cemented hip arthroplasty

Results

Of the 112 patients, 66 (58.9%) received dexamethasone and 46 (41.1%) did not. Among 86 elective cases, 66 (76.7%) received dexamethasone and 20 (23.3%) did not. Among 26 emergency/trauma cases, 15 (57.7%) received dexamethasone and 11 (42.3%) did not. Documented reasons for withholding dexamethasone included Type 2 Diabetes Mellitus (8 cases). The data suggest a more conservative approach in emergency and trauma settings, likely due to comorbidities and acute presentation.

References

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Digital Preop-assessment for Local anaesthetic Orthopaedic patients

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Elective recovery has increased the demand on face-to-face pre op assessment appointments. NHS England has called for streamlining of Local Anaesthetic (LA) patients through pre op assessment¹. Our Integrated Care Board has increased day case orthopaedic operating capacity through the opening of a dedicated orthopaedic surgical “Hub”. To maximise the number of orthopaedic LA patients assessed and fit to proceed with surgery we re-designed the pre op assessment pathway. We moved to remote assessment with a digital questionnaire, followed by nurse triage. Within one month this produced a pool of 180 assessed patients. Previously we would have seen an average of 40 LA patients face-to-face in clinic per month.

Methods

We automated our online patient portal “Patient Hub” to send a pre op assessment questionnaire to patients listed for LA orthopaedic surgery. All patients had agreed to be contacted in this way. Their responses were reviewed by an experienced preop assessment nurse and information from Open net ICE was reviewed as per normal ie HbA1c results. System One GP software was accessed to check BP readings/medications if necessary. Patients were aware they may have to attend for MRSA swabbing/repeat HbA1c closer to their date for surgery in an HCA staffed clinic. Patients were emailed universal optimisation and an information booklet about their day case admission. Scheduling considerations were communicated as normal through our Electronic Patient Record (EPR) “Meditech”.

Digital Preop-assessment for Local anaesthetic Orthopaedic patients

Results

Within one month we have pre op assessed 180 LA orthopaedic patients remotely, compared to a monthly average of 40 face-to-face. The average time taken to review each digital pre op was four minutes, compared to 30 minutes for a face-to-face appointment. 25% of patients do not use the “Patient Hub” and their LA assessments are still booked as face-to-face or telephone appointments. We believe this form of pre op assessment is more convenient and acceptable to patients. It is more efficient, helping build our pool of ready patients and freeing up face-to-face pre op slots for higher risk patients. It will save money reducing unnecessary investigations.

References

1. NHS England. Rationalising Preop assessment for patients undergoing procedures involving local anaesthetic. June 2025