SAFE ANAESTHESIA LIAISON GROUP

PATIENT SAFETY UPDATE

1 July 2021 – 30 September 2021

PUBLISHED FEBRUARY 2022

LEARNING POINTS FROM REPORTED INCIDENTS

1 July 2021 – 30 September 2021

This document aims to achieve the following:

- Outline the data received, the severity of reported patient harm and the timing and source of reports
- Provide feedback to reporters and encourage further reports
- Provide vignettes for clinicians to use to support learning in their own Trusts and Boards
- Provide expert comments on reported issues
- Encourage staff to contact SALG in order to share their own learning on any of the incidents mentioned below.

The SALG Patient Safety Updates contain important learning from incidents reported to the National Reporting and Learning System (NRLS). The Royal College of Anaesthetists (RCoA) and the Association of Anaesthetists would like to bring these Safety Updates to the attention of as many anaesthetists and their teams as possible. We would like to encourage you to add this update to the agenda of your next morbidity and mortality meeting and we would also like to hear your feedback on learning points.

Feedback from M&M meetings on how the Patient Safety Update has informed action can be sent to the SALG administrator at admin@salg.ac.uk

This issue of *Patient Safety Update* begins with two pieces devoted to coroner's reports to prevent future deaths ('PFDs', previously referred to as a 'Regulation 28 letter'). Coroners have a duty to send PFDs to a person, organisation, local authority or government department or agency where they believe that action should be taken to prevent future deaths. In most cases the Chief Coroner will publish the PFD on their website.[1] The College, Association and FICM sometimes receive such reports and are asked to act.

1. Courts and Tribunals Judiciary. Reports to Prevent Further Deaths [Accessed February 2022].

Coroner's Report to Prevent Future Deaths #1: Oesophageal intubation

Glenda Logsdail's family have given permission for her name to be used in this campaign.

Glenda Logsdail was a fit and healthy 61-year-old who died as a result of an undetected oesophageal intubation in August 2020. The coroner issued a PFD to which the RCoA, the Association of Anaesthetists and DAS responded in detail, setting out proposed actions.

Mrs Logsdail's death was wholly avoidable, resulting from failure to identify and appropriately manage a misplaced tracheal tube in an otherwise uncomplicated airway. It is of great concern that this has happened, despite the previous work of the speciality to try to ensure that oesophageal intubations are swiftly recognised and corrected.

The matters of concern highlighted by the coroner broadly fall in to two areas:

1. Lack of awareness of the 'No Trace = Wrong Place' message, following the launch of the video of the same name in 2018,[1] in response to two previous PFDs that also involved failure to recognise oesophageal intubation.
2. Human factors and ergonomics in other words, making it easy to do the right thing and designing out the possibility of error (of which non-technical skills are just one aspect). The coroner specifically highlights problems with non-technical skills including:
   - lack of confirmatory checks of correct tube placement both clinical and checking the $ETCO_2$ trace;
   - failure to return to an ABC approach in an emerging critical incident;
   - fixation error (and this being contagious);
   - existence of an inhibitory hierarchy preventing others speaking up;
   - poor team function including: confusion over roles, poor prioritisation, lack of clear leadership, and resultant panic and chaos.
3. In addition, the coroner's report highlights the variable configurations of monitors across the hospital, an example of a systemic issue that can affect a team's response in an emergency.

This case highlights the critical importance of human factors in safe anaesthetic practice. Multidisciplinary team training has an important role to play in rehearsing emergency drills, embedding non-technical skills in practice and allowing teams to learn how to function well as a whole within a flattened hierarchy. Regular, multidisciplinary team training is one of the standards for the RCoA's Anaesthesia Clinical Services Accreditation (ACSA) scheme. However, in practice, it is a standard that many departments find difficult to meet to an adequate level due to the pressure on theatre time. To support this, we are: developing resources for multidisciplinary team training on the subject of unrecognised oesophageal intubation, including short scenarios to limit the need for theatre downtime;[2] asking clinical directors in every UK anaesthetic department to confirm how they have used these resources via an evaluation form and working with stakeholders to highlight

the importance of theatre teams having sufficient time to undertake essential emergency drills training.

In situ multidisciplinary team training for emergency scenarios can also highlight systemic issues that can affect a team's response in an emergency, such as the variable configurations of monitors across the hospital identified in this case. We are working with Barema, the association of anaesthetic and respiratory device suppliers, to support the development of engineered solutions to the issue of variable and different configurations of the displays and alarms notifications of monitors.

We are addressing the issues highlighted by this tragic death through a long-running awareness and information campaign to disseminate and embed the lessons to be learned into practice and ensure that anaesthetists and the wider theatre team are aware of these issues.

There is an editorial on unrecognised oesophageal intubation in February 2022's *Anaesthesia*.[3]

1. Capnography: No Trace=Wrong Place. *RCoA* [Accessed February 2022].
2. Burr, T. Unrecognised Oesophageal Intubation Flash Cards. *RCoA*, 2021. [Accessed February 2022].
3. Pandit JJ, Young P, Davies M. Why does oesophageal intubation still go unrecognised? Lessons for prevention from the coroner's court. *Anaesthesia* 2022; 77: 123-128. doi:10.1111/anae.15634

Coroner's Report to Prevent Future Deaths #2: Wrong filter

The RCoA and FICM received a PFD. We are sharing the lessons from this tragic case to ensure they are incorporated into our practice.

A patient being ventilated for COVID pneumonitis in a surge ICU sustained a cardiac arrest on day 7. At the time an anaesthetic machine was being used to provide ventilatory support due to lack of conventional ICU ventilators. The cardiac arrest was thought to have been precipitated by the tracheal tube becoming blocked by thick secretions. The patient was successfully resuscitated following replacement of the tracheal tube but subsequently developed acute renal failure. The patient sustained a further deterioration in ventilation six days later when a partially blocked tracheal tube was identified at bronchoscopy and replaced. The patient was now being ventilated with a conventional ICU ventilator. Following the second episode, it was realised that there was no humidification in the ventilator circuit as what was thought to be a heat and moisture exchanging filter (HMEF) was in fact a plain bacterial/viral filter. The plain filter included a sampling port (used for capnography) which had made staff incorrectly consider that it was a HMEF. Sadly, the patient subsequently died from multiple organ failure secondary to COVID pneumonitis and the cardiac arrest was considered a contributory factor.

Further investigation identified up to 10 more patients who were not receiving humidification due to the incorrect use of a plain filter in place of a HMEF. The coroner was concerned that there was confusion between HMEF and filters by many staff over a number of days that could occur and that action is needed to reduce the risk of harm to future patients.

HMEF and plain filter may be confused as they can look similar and the labelling may not be clear. Standardisation of labelling including colour coding could reduce the risk of a plain filter being mistaken for an HMEF. This has been referred to the MHRA for consideration. The presence of a sampling port on a plain filter may increase the risk of it being mistaken for a HMEF.

The use of an anaesthetic machine as an ICU ventilator by staff unfamiliar with the equipment is likely to have contributed to the errors. Plain filters with sampling ports are designed only for use in anaesthetic machines when undertaking short cases and they should not be available in an ICU.

All members of the MDT involved with managing ventilated patients must be aware of the difference between the plain filter and HMEF in use on their unit and their correct placement in the ventilator circuit. If an HMEF is being used it must be at the patient end and there should be no other filter in the circuit. If an active humidifier is being used (heated water bath) then a plain filter should be placed in the expiratory limb of the circuit close to the ventilator.

There is an article on this topic in the January issue of *Anaesthesia News*.[1]

1. Selecting The Wrong Filter: A Difficult Patient Safety Issue. Association of Anaesthetists. *Anaesthesia News*. January 2022.

Oropharyngeal (Guedel) airway changes

Readers should be aware of a change in the colour coding and sizing nomenclature for oropharyngeal airways. This is especially important as many clinicians request an airway by colour. This change is to meet the requirements of ISO 5364:2016, which requires standard colours and size codes to be used. Intersurgical have a published a useful guide to the changes in their own range,[1] with changes to the colour coding of four airway sizes. It is assumed that other manufacturers may already have compliant products or will change in due course. Organisations are advised to anticipate these changes, to check with their suppliers and to advise clinicians of local timescales for any change. Clinicians should remain vigilant when selecting or requesting oropharyngeal airways.

1. Intersurgical. Intersurgical Guedel Airways: New ISO 5364:2016 Specified Colours. [Accessed February 2022].

LEARNING POINTS FROM REPORTED INCIDENTS

Advance care plans

Case 1

"Patient was unwell with COVID pneumonitis and asthma exacerbation… seen by the medical team on two admissions and felt to be a candidate for full treatment escalation and CPR. [Later during stay] became more unwell, NEWS 8 and was treated for fast AF, asthma exacerbation by the medical team. They escalated to outreach and CCU to review the patient… was reviewed by CCU SpR and case discussed with the CCU consultant. They felt patient was not a candidate for CPR and invasive ventilation and they conveyed this to the patient. The medical team stated their ceiling of care would include non-invasive ventilation (NIV) if patient deteriorated. This would need to be carried out on [named] ward under their care/supervision as there are no red COVID beds on the respiratory ward. Therefore, this case was not discussed with the respiratory consultant/team. Patient did not receive NIV on [named ward] despite deteriorating overnight and died on the medical ward."

Case 2

"Cardiac arrest review completed on behalf of the Resuscitation Service, Datix completed due to concerns around DNACPR form completion and resuscitation status. Delay in starting resuscitation... DNAR form completed but not signed by doctor as family were wanting to think about resuscitation status. Huddled to nursing team importance of checking DNARs at handover. Any concerns are to be escalated immediately. Reflections received from nurse caring for patient at time of incident and the nurse in charge. Support given to nurse caring for patient due to effect this incident has had on him."

These stories highlight the absolute importance of understanding what a patient's expectations and wishes are in such circumstances and that everyone including the patient and their family or representatives understand the agreed clinical plan. It is of equal importance to document and disseminate those views to the rest of the health care team. The Association has recently published an updated guideline on the implementation of advance care plans, including those for CPR.[1]

1. Meek, T *et al*. Implementing advance care plans in the peri-operative period, including plans for cardiopulmonary resuscitation. Association of Anaesthetists, 2022.

Documentation

"[Structured judgement] review for learning from deaths by medical support worker… Difficult intubation. NG tube misplaced in lung. Bilateral pneumothoraxes. Patient had Covid 19 and frailty. Poor frailty and ICU transfer decision documentation."

"ECG performed showed abnormalities and raised troponins suggestive of MI. No documentation of this being acted upon in notes…"

These are included not only as a reminder of the importance of documentation in the clinical environment, but also in the submission of incident reports to local risk management systems for learning and improvement at both local and national level. There may well have been learning points that are not brought out by such a brief description of what happened. When more information is provided it is possible to understand more about the incident and help prevent future occurrence.

Line problems

Case 1

"Noradrenaline line occluded, patient blood pressure dropped. Unable to find the cause of the occlusion. ?4 lumen octopus."

Case 2

"… neonate patient having intravenous fluids (normal saline and dextrose, no additives) in right arm overnight on PICU, while intubated. The intravenous cannula has tissued or become dislodged from the vein without the staff being aware, as the infusion of fluids was continued into the right arm throughout this resulted in a severe limb and life-threatening compartment syndrome … Right arm exposed by nurse. Appearance swollen and white, with purple fingertips."

Case 3

"Has experienced ischaemia in the tip of index finger and middle finger. Has been reviewed by medical team. Believed to be related to arterial line which had been removed few days prior. Fingers had been intermittently discoloured but circulation would return. Post proning circulation did not return to finger tips and have become necrotic."

This collection of cases are a reminder of the vigilance required with all lines and the problems that can be associated with them. Regular observation of lines and documentation of observation is important.

LEARNING POINTS FROM REPORTED INCIDENTS

Awareness during TIVA

"Anaesthetic awareness. TIVA anaesthesia. Patient extubated and immediately said she could feel everything. After drapes removed at end of procedure, arm proximal to cannula noted to be very swollen so GA drugs had passed into tissues rather than intravenously."

Following on from the above, this is a very specific example of the need for vigilance with lines. The joint guidelines for the safe practice of total intravenous anaesthesia from the Association of Anaesthetists and the Society for Intravenous Anaesthesia[1] state: "*The intravenous cannula or central venous catheter through which the infusion is being delivered should, whenever practical, be visible throughout anaesthesia*." It is not stated in the report whether there was a reason this could not be achieved in this case. Use of processed electroencephalography (pEEG) is recommended in the same document and in the more recent Association standards of monitoring guidance.[2] This could have alerted the anaesthetist to the problem, but there is no indication that it was being used.

1. Safe Practice of Total Intravenous Anaesthesia (TIVA). Association of Anaesthetists and Society for Intravenous Anaesthesia. 2018.
2. Recommendations for Standards of Monitoring During Anaesthesia and Recovery. Association of Anaesthetists, 2021.

Misplaced central venous catheter

"On review of CVC today, after difficulty giving medication, the Charge Nurse became concerned about the right subclavian CVC. An ABG was taken suggesting CVC was in artery. The CVC has been in use for 3 days, and has had high dose vasopressors and TPN through it. CVC transduced and confirmed intra - arterial placement. Tip likely in aortic arch."

It is not clear how a CVC was used for three days without, as is suggested by the report, its position being confirmed. It is important to ensure that all relevant checks are undertaken. LocSSIPS[1] should be developed and used to ensure that this is standardised.

1. National Safety Standards for Invasive Procedures. *NHS England*. September, 2015.

Complication of drain

"I was contacted as on call surgeon regarding a possible complicated drain insertion… There was 1 litre of blood in a clamped drain bottle and the patient had been taken to theatre with concern regarding intrahepatic insertion. The HPB surgeon arrived shortly after and the abdomen was initially explored. While doing this a large amount of blood was released from the pericardium under pressure. Femoral bypass was commenced and the cardiac surgeon on call arrived. On exploration of the chest there was no sign of cardiac trauma and the pericardial collection appeared longstanding with dark blood and old clot. The right pleura contained 700ml of haemoserous fluid. On further exploration the Seldinger drain had been inserted into the liver and this was removed and the liver repaired. The patient came off bypass without issue."

It is assumed that this refers to a chest drain inserted for a pneumothorax, effusion or haemothorax. There are no details of the technique used or the level of experience, competence or supervision of the original operator. There are are also no details of the level of insertion.

The risk of death following misplacement of chest drains into liver, heart or lung was highlighted in a NPSA safety alert in 2008[1] after 12 deaths reported over 3 years with the following contributory factors:

- Inexperience of operator and lack of supervision
- Failure to follow guidelines and excessive insertion of dilator
- Site of insertion and position of patient
- Inadequate imaging

The 2010 British Thoracic Society guideline for insertion of chest drains (currently being revised) recommends the use of ultrasound guidance.[2] A classic landmark is 5th intercostal space at the mid-axillary line in the "safe triangle" which has an inferior border at the nipple line.

Bedside chest drain insertion carries a risk of complications which relate to experience and the presenting pathology and patient - the operator must choose whether to do blunt dissection or a Seldinger technique depending upon the assessment.

Fluid or air should be able to be aspirated easily to confirm the pleural space – if not radiological help or the open approach can be considered. It is unlikely that aspiration would be easy if the needle was in the liver.

This case reminds us of the complications of misplacement of chest drains and of the need for the assessment and diligence of suitably experienced clinicians in addition to the immediate availability of surgical teams to rescue the situation.

1. Rapid Response Report. Risks of Chest Drain Insertion. NPSA. 2008.
2. Havelock T, Teoh R, Laws D, *et al*. Pleural procedures and thoracic ultrasound: British Thoracic Society pleural disease guideline 2010. *Thorax* 2010; **65**:i61-i76. http://dx.doi.org/10.1136/thx.2010.137026

Nerve injury following brachial plexus block

"… left shoulder arthroscopy and cuff repair. Prior to surgery, as part of anaesthetic, patient underwent an interscalene nerve block. The patient was noted, by the surgeon, to be in distress and pain during the interscalene block procedure. Surgery was uneventful and uncomplicated. Patient discharged home but was noted during a routine surgical follow up appointment to have significant motor and sensory loss in the left hand. Patient was referred to anaesthetics… and underwent a consultation following which they had nerve conduction studies performed which showed patchy moderate to severe pan-brachial plexopathy. The anaesthetic

department also organised an MRI neck which did not show any obvious cause of this neurology. Patient has been referred to neurology. Unfortunately, the patient is suffering greatly from the effects of not being able to use their hand… cannot care for his spouse and cannot drive."

In this case, a significant motor deficit was not identified until some time after the event. Although there are insufficient details to comment specifically on this case, it does highlight a number of learning points regarding performance of regional blocks and their post-operative follow-up.

A thorough and comprehensive informed consent discussion should of course take place to ensure the patient is aware of all risks and benefits. The person performing the block should be appropriately trained and up to date with practice and relevant continuing medical education. Despite the lack of evidence to demonstrate that using ultrasound guidance reduces the incidence of regional anaesthesia-related nerve damage, the nerve block should be performed using ultrasound guidance as a standard of care, by a practitioner skilled in its use for this technique.

There is a suggestion that monitoring injection pressure during block performance is a possible way to reduce nerve injury. Some would even advocate for triple monitoring – ultrasound, injection pressure monitoring and peripheral nerve stimulation to minimise the risk of intraneural needle placement.[1] Evidence is lacking to recommend adding pressure monitoring and nerve stimulation as a standard, but certainly it is safe and defensive practice.

The minimum volume of local anaesthetic to achieve a successful block should be used and the injection should be performed in small increments at low pressure at a slow and a steady rate, so that concerning signs or symptoms are apparent before a large volume of injectate has been delivered. Practitioners should consider avoiding additional vasoconstricting perineural adjuncts such as epinephrine as this may exacerbate neural ischaemia in the event of breach of the epineurium.[1] Performing the block in an awake patient allows direct reporting of pain or discomfort on injection and is generally recommended, although this is not always possible. In the event of pain or discomfort, the injection should stop immediately, the needle should be withdrawn, and an assessment made as to whether the injection should continue.[1]

Care should be taken when positioning patients in a beach chair position. The neck should be maintained in a neutral position to avoid any injury to the plexus.

If the patient's block experience has been less good than desired, the patient should be examined afterwards to assess the effectiveness of the block. After surgery, patients should be told when to expect sensation to return to normal, and what to do if this does not happen.

Neurological complications such as those in this case are rare, in the range 1 in 700 to 1 in 5000 (as quoted in the Royal College of Anaesthetists and Regional Anaesthesia UK leaflet,[2] with the incidence of severe nerve damage (as in this case) likely to be closer to the upper range, and perhaps even rarer dependent upon the skill level of the practitioner. Of those patients who complain of post-operative neurological symptoms, 95% will recover within 4-6 weeks and 99% will be completely resolved at 1 year. A recent CPD review looks at the topic in detail.[3]

It should be remembered that not all post operative neurological symptoms are due to the peripheral nerve block. The diagnosis of an exact cause is often difficult in the immediate postoperative period. Peripheral nerve injury is associated with certain types of surgery, hypertension and smoking but not peripheral nerve blocks.[3] Surgical factors including traction, stretch and compression may be a factor in some cases. If pain is a component of the initial presentation, early involvement of a specialist in pain medicine can be especially helpful in establishing a cause and providing treatment. Lesions requiring urgent versus non-urgent treatment should be differentiated and have appropriately different treatment pathways.

When patients are discharged from hospital before a block has worn off, then there should be an adequate mechanism for follow up, with an agreed pathway if problems are highlighted. RA-UK and the British Orthopaedic Association have produced a joint guideline to guide this process.[4]

1. Neal JM, Barrington MJ, Brull R, *et al*. The Second ASRA Practice Advisory on Neurologic Complications Associated with Regional Anesthesia and Pain Medicine: Executive Summary 2015. *Regional Anesthesia and Pain Medicine* 2015;40:401-30. doi: 10.1097/AAP.0000000000000286. PMID: 26288034.
2. Nerve Blocks for Surgery on the Shoulder, Arm or Hand. Information for Patients and Families. Royal College of Anaesthetists, Association of Anaesthetists and Regional Anaesthesia UK. 2015.
3. O'Flaherty, D.; McCartney, CJL.; Ng, SC. Nerve Injury After Peripheral Nerve Blockade- Current Understanding and Guidelines. *BJA Education* 2018; Vol. 18, Issue 22. Pp384-390. DOI: 10.1016/j.bjae.2018.09.004.
4. Peripheral Nerve Follow UP and Initial Management of Postoperative Unexpected/Persistent Neurological Dysfunction. Regional Anaesthesia UK and British Orthopaedic Society. [Accessed: February, 2022].

Tracheostomy complication

"Patient transferred from ICU to theatre as an emergency with obstructed tracheostomy. Patient had Covid pneumonitis and had been on ICU for 26 days, percutaneous tracheostomy performed on ICU… Patent had rapid desaturation on transfer to theatre table and became almost impossible to ventilate. Fibre optic scope showed large piece of tissue / clot obstructing tracheostomy. ET tube railroaded over airway exchange catheter. Maxillofacial surgeons replaced tracheostomy tube but patient remained impossible to ventilate through either ET tube or tracheostomy. Bronchoscopy showed large clot blocking R main bronchus

unamenable removal by catheter suction. Patient suffered a prolonged period of desaturation for approximately 45 minutes. The patient was transferred back to ICU and died [two days after tracheostomy insertion]."

It is unclear what the initial problem was. A blocked percutaneous tracheostomy is likely to be misplacement (ie not in airway) or blocked by clot.

It is not stated why the patient was transferred to theatre for management; such problems would normally be managed at bedside. In the absence of contraindications, a safe strategy would be to remove the tracheostomy tube and re-intubate orally in a patient who has recently had percutaneous tracheostomy (< 7 days old).

Blood clot occluding major airway can be challenging to remove with a fibreoptic scope as suction cannot easily be performed. One approach is to place the bronchoscope tip within the clot and slowly withdraw the bronchoscope whilst maintaining continuous suction to remove clot from the airway.

This demonstrates complications of tracheostomies. The timing of percutaneous tracheostomy or associated prior bleeding are not clear. Transfer to theatre of an obstructed or near obstructed tracheostomy tube would not normally be done; resolution of the problem at the bedside would be desirable. Fibreoptic bronchoscopy can be performed at the bedside in ICU. However, the clinical situation may have indicated that risk balance was appropriate.

Tracheal tear

"[Septuagenarian] patient with presumed lung cancer scheduled for VATS left lower lobectomy with a background of asthma and steroid use. After induction of anaesthesia found to be a difficult intubation requiring a bougie and exchange catheter for placement of a left double lumen tube. This was successfully deployed but soon afterwards the patient developed profound bronchospasm necessitating very high airway pressures to maintain oxygenation. The bronchospasm was treated with iv salbutamol, iv steroids, magnesium infusion and high inspired volatile which fortunately responded to treatment. At no point during this treatment did patient desaturate or become haemodynamically unstable. At this point I noticed surgical emphysema of the anterior chest wall so an emergency chest x-ray was ordered which ruled out a pneumothorax so we proceeded to rigid bronchoscopy which revealed a tear in the distal right trachea. Upper GI surgeons were called who performed an OGD to rule out oesophageal injury. The decision was then made to keep patient intubated and transfer to cardiothoracic critical care unit. Unfortunately, the surgical emphysema worsened so patient was taken to the CT scanner and then back to theatre where the surgical decision was to repair the defect through an open thoracotomy rather than stent from the inside. When the surgeon dissected the pleura and mediastinum off the tracheal wall the injury extended both proximally and distally down the right main bronchus resulting in complete failure of ventilation. The surgeon was unable to pass an ET tube into the left main bronchus and it was only with packing that I was able to regain control of the airway. There was no other option than to put the patient on cardiopulmonary bypass which the cardiac surgeons did with difficulty. Once on bypass the defect in the trachea was successfully repaired, the patient weaned off bypass and transferred back to CTCCU."

Tracheal rupture after intubation is a recognised phenomenon especially after dual lumen tracheal tube (DLT) insertion. It seems that although the tube was inserted into the left main bronchus it is not clear that its position was confirmed using a fibreoptic bronchoscope. The fact that the "distal right trachea" (it is not clear if this means bronchus) had a tear is inconsistent with correct placement of a left sided DLT. It is possible that the DLT was directed into the right main bronchus and that the difficult insertion caused the tracheal tear especially as the patient was taking steroids. The lesson to be learnt from this is to always confirm the correct placement of the DLT using a fibreoptic bronchoscope.

The bronchospasm was treated appropriately and the diagnosis of the tracheal rupture by the surgical emphysema CXR and bronchoscopy was correct. The patient was unstable and the diagnosis had already been made under direct vision so the decision to transfer the patient to CT is open to question; this might have delayed definitive treatment.

It is not clear after the OGD endoscopy whether the DLT was exchanged for a single lumen tracheal tube (SLT) to transfer the patient to the ICU. If so, an alternative to cardiopulmonary bypass (CPB) may have been to place a bronchial blocker down the SLT into the right main bronchus proximal to the tear to try and restore ventilation to the left lung. This may have been attempted but it is not reported. In the event the use of CPB to repair the trachea appears to have been the correct avenue to take.

Presumed local anaesthetic toxicity

"Sudden loss of consciousness with twitching in upper limbs, during caesarean section under epidural top up (using 0.5% levobupivacaine). Patient immediately given a GA, lipid rescue and investigated for other causes of seizure. Incident occurred approx 45minutes following last local anaesthetic injection, and after delivery of the baby. No other cause for ?seizure and loss of consciousness found ?LA toxicity. No cardiovascular instability or conduction defects. Overnight stay in ICU and 3 day in-patient stay. Patient well and discharged with follow up."

This case serves as a reminder that local anaesthetic toxicity can occur some significant time after administration of the LA, so diagnosis requires clinician alertness to the possibility. Late presentation is particularly associated with gradual absorption of large volume doses of LA, as distinct from intravenous administration, which is liable to occur closer to the time of administration and may happen with a smaller volume of administration. The Association's Quick Reference Handbook contains a treatment guide for this clinical emergency.[1]

1. Quick Reference Handbook, Association of Anaesthetists.

Complication of rapid correction of sodium

"… a young patient was admitted to ITU with complaints of reduced consciousness, electrolyte imbalance with admission Na levels <100, which was corrected rather too quickly. Sodium levels unrecordable to 117 by next day and 121 in 48 hours. Patient was stepped down to medical ward where they became progressively confused [with] altered behaviour. On examination patient had a fine tremor, generalised mild weakness, no confusion, looked low in mood, horizontal nystagmus, coordination normal, gait ok, dysarthria and dysphagia (with NGT). MRI brain done… showed central pontine mylelinolysis likely secondary to rapid correction of Na."

This is an uncommon condition, but this case serves as a reminder that those rarities that look like examination fodder do happen in real life.

Safe Anaesthesia Liaison Group
Churchill House, 35 Red Lion Square, London WC1R 4SG
Tel 020 7092 1571 | **Email** salg@rcoa.ac.uk | **Website** salg.ac.uk

Correct as at February 2022