
ANESTHESIA SAFETY NETWORK

QUARTERLY PERIOPERATIVE INCIDENTS REPORT
Newsletter #002 - december 2016



**TOWARD EXCELLENCE
IN HEALTHCARE**



ANESTHESIA SAFETY NETWORK

INTRODUCTION

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Dear subscribers,

We're at the real beginning of this exciting journey with this platform. This new tool has been endorsed by different kinds of French organisations. Thus, the Anesthesia Safety Network has won the first prize of a contest « Grand Prix de la Prévention Médicale ». It was a great achievement and honor to receive this support from René Amalberti. René

Amalberti is an international leader in safety in high risk industries and also the author of numerous books published all over the World. This encouragement has been fostered by meetings with the board of the French Society of Anaesthesiology and also the chairman of the quality and patient safety committee of the European Society of Anaesthesiology. Furthermore, new contacts are in progress with junior anaesthesiologists in France and abroad.

There are currently almost 500 subscribers but it seems to be still difficult to report sentinel events for most of you. The barriers of reporting are well known (fears of punishment or being viewed as incompetent

by colleagues, lack of feedback, reporting process is too long, lack of anonymity, ...). The main goal of this platform is to bypass all these barriers allowing us to share our experiences anonymously with a "no shame and no blame culture". So, It's time to act and report. Don't let an incident become a monkey on the back instead of a shared experience.

This platform is yours !

WHEN ONE SHARES A MATERIAL GOOD,
ONE DIVIDES IT. WHEN ONE SHARES AN
IMMATERIAL GOOD, ONE MULTIPLIES IT

Soudoplatoff's law published in the book of Idriss Aberkane (1)

EDITORIAL

The incidents become burdens if they're hidden instead of being analysed and shared. Beyond the pain and harm for patients and relatives, it's a huge waste for our healthcare system. Because human error cannot be eliminated, we have to promote efforts to minimise, trap and mitigate error. Dealing with humans in the system, we'll foster process reliability.

Non-technical skills play a major role in quality and patient safety. In 2008, Rhona Flin (3) defined non-technical skills as " the cognitive and, social and personal resource skills that complement technical skills, and contribute to safe and efficient task performance". In this second newsletter, we'll focus on communication, teamwork, leadership and impact of stress and fatigue on caregivers and outcomes.

Being aware of how things could go wrong during a crisis code, we should be able to settle new strategies to avoid incident or fix them.

Thomas LOPES M.D., Frédéric MARTIN M.D.

IN HIGH RISK INDUSTRIES,
MORE THAN 80 % OF ACCIDENTS
ARE DUE TO HUMAN FACTORS (2)

DIFFICULT AIRWAY MANAGEMENT [1]

Call for help due to respiratory failure during a general anaesthesia for ambulatory proctologic surgery. When the second anaesthesiologist arrived in the operating room, the oxygen level was very low (SaO₂ = 27 %). The initial team was trying to ventilate and then they decided to proceed to an emergency intubation. Unfortunately, the intubation failed two times using specific devices. So the second anaesthesiologist decided to insert a supraglottic airway tube. The insertion was easy leading to a rapid increase of arterial oxygenation. The surgery was performed under general anaesthesia and the patient was discharged after being informed of the incident.

Good points: *early call for help, availability of helper.*

Ways for improvement: *Avoid anchoring with intubation, consider other ways (cognitive aids, The Vortex Approach <http://vortexapproach.org/>).*

KEY WORDS: *cannot ventilate / cannot intubate / fixation error*

DIFFICULT AIRWAY MANAGEMENT [2]

The team reported a situation called "cannot ventilate, cannot intubate" during the anaesthesia of a child with a voluminous lower lip hemangioma evolving toward the pharynx. Before this surgery, an embolisation was performed without checking the efficiency of this procedure and sharing information among caregivers involved in the surgery. During the preoperative evaluation, the anaesthesiologist didn't suspect the size of the hemangioma ("he just saw the top of the iceberg"). Fortunately, an urgent tracheotomy was performed under stressful conditions and this procedure saved the life of this child. Then he was admitted to intensive care unit.

Good points: *urgent tracheotomy.*

Ways for improvement: *better communication and planning of this procedure, sharing information during checklist.*

KEY WORDS: *cannot ventilate / cannot intubate / communication*





TURP SYNDROME

Transurethral resection of the prostate with use of glycolic acid under general anaesthesia. The surgery seemed to be difficult and the duration exceeded the time expected. The first CRNA began the procedure and after 30 minutes was substituted by an anaesthesiologist. Thirty minutes later, the anaesthesiologist called another CRNA without providing relevant information "you just have to read documents written by your counterpart". A few seconds later, arrhythmia and bradycardia occurred with bilateral mydriasis. A turp syndrome was suspected due to the loss of nearly 4 litres of glycolic acid solution. Immediately, the surgeon and the anaesthesiologist were informed. The first hyponatremia was about 105 mmol/L. The patient was admitted to ICU and finally was discharged with no evident harm.

Good points: *assessment of the situation; awareness of the situation.*

Ways for improvement: *Better handoffs and standardising provider communication (I-PASS - ©2011 I-PASS Study Group /Children's Hospital Boston). Better monitoring and team communication.*

KEY WORDS: **TURP syndrome / communication / teamwork**

DOCUMENTATION MISSING

A temporary anaesthesiologist was working in two operating theatres with two certified registered nurse anaesthetists (CRNA). In room 1, while he was checking the documentation of a patient waiting for the surgeon, he was called for the induction in room 2. He left room 1 because the surgeon in room 2 was in a hurry due to the delay. At the same time, the surgeon arrived in room 1 and caregivers proceeded to the checklist, installation and preoxygenation. The arms were placed along her body with no access during the surgery. When the anaesthesiologist came back, they began the IV induction. Unfortunately, a few minutes later, one of the iliac veins was damaged leading to a significant loss of blood (1300 ml in 25 minutes). There was no significant shock due to use of crystalloids. The anaesthesiologist decided to look for the blood group card of the patient but he didn't find it because it wasn't prescribed during the previous appointment with the medical staff. So, a second venous catheter was inserted and a blood sample was taken and analysed. When the situation was under control, the CRNA reported she hadn't searched for the card because she thought the anaesthesiologist had done it. She was also nervous due to family problems with her daughter and she called her a few seconds after the intubation.

Good points: *call for help, quick debriefing after the incident with staff.*

Ways for improvement: *sterile cockpit during the checklist with the whole team (patient included), awareness of the difficulty to work in an unfamiliar environment.*

KEY WORDS: **check-list / distraction / production pressure**



MEDICATION ERROR [2]

A 4.5 kg baby was admitted to post anaesthesia care unit (PACU) after a craniostenosis surgery. Usually, this ward is dedicated to adult brain surgery but sometimes there are children. The anaesthesiologists have been trained for any type of patients but it wasn't the same for nurses. When the child arrived in the recovery room, he was in pain and the analgesia began with the administration of IV nalbuphine 0.9 mg. The medical prescription was clear but written differently from the usual prescription in this unit. The nurse 1 asked for a double-check because she was concerned about it. The nurse 2 confirmed her dilution (not trained for paediatric care). The third nurses refused to participate because she was anxious and not trained. In fact, that was wrong and she injected 9 mg IV of nalbuphine (10 times the dose prescribed). Suspecting their mistake, they called for help, put oxygen and prepared equipments for intubation and respiratory assistance. Finally, no additional treatment was needed and no harm reached the patient. Immediately, a debriefing about this incident was performed and different actions were scheduled with a report sent to the administration (paediatric training sessions for nurses, ...). A few days later, the administration decided to blame the head nurse of this ward despite actions having been taken after reporting the no harm event.

Good points: *PDSA plan engaged, double-check, no go for the third nurses.*

Ways for improvement: *the wish for the hierarchy to blame, to find the "bad apple" in the box, structured analysis of this incident using the London Protocol written by Sally Adams and Charles Vincent.*

KEY WORDS: **shame and blame culture** / report / error

MEDICATION ERROR [1]

An anaesthesiologist was called because an old patient was in pain. She was 89 y.o. and had broken her patella four days before. After a short discussion with the patient she gave to him the wrap of the painkiller delivered by the nurse. It was a corticosteroid that wasn't prescribed. According to the nurse, she didn't understand what was written and she thought she was right. Instead of reading nefopam "sublingual", she thought it was "solupred". This mistake was unpredictable but it happened and the nurse said she was exhausted.

Good points: *investigation and debriefing.*

Ways for improvement: *computerisation, standardisation.*

KEY WORDS: **prescription** / error / time pressure

DELAYED RECOVERY IN PACU

A female patient was admitted to the hospital for orthopaedic surgery. She reported severe gastroesophageal reflux and the anaesthesia team performed a general anaesthesia with intubation and the use of succinylcholine. At the end of the surgery, the patient was transferred to the recovery room but she was unresponsive to external stimuli. She had high blood pressure with tachycardia. The anaesthesiologist decided to monitor the neuromuscular block. He noticed a ratio T4/T1 about 10%. So he decided to inject intravenously atropine and prostigmine to reverse neuromuscular block. He reported that he thought there was a medication error with cisatracurium administered inadvertently by a CRNA student. The patient awoke quickly and answered to order. The anaesthesiologist removed the oro-tracheal tube. Immediately, the patient was unable to breathe with an airway collapse leading to hypoxemia and bradycardia. The anaesthesiologist was frozen and the nurse called for help. The two colleagues were also stressed and tried to intubate twice the patient (first attempt in oesophagus with difficulty for helper to admit her failure). Finally, the patient was transferred to intensive care unit and she recovered from paralysis seven hours after operation. The patient had a plasma butyrylcholinesterase deficiency and was discharged from hospital with no harm.

Good points: *call for help, partial diagnostic for delayed recovery.*

Ways for improvement: *overconfidence, confirmation bias, teamwork, cognitive aids, and leadership.*

KEY WORDS: *CRM (crisis resource management) / respiratory failure / butyrylcholinesterase*

RESPIRATORY INSUFFICIENCY IN PACU

A female patient had a colectomy under general anaesthesia. She was admitted to PACU at 6:10 p.m..

When she awoke, the extubation was realised and a facial oxygen mask was placed on her face. A monitoring of the neuromuscular block had been carried out with a TOF ratio T4/T1 about 80 %. The patient was anxious, she was asking many details about the surgery, she wanted to drink and more heating. The two nurses had to deal with the demand of other patients. One of the nurses removed the empty crystalloid flacon with a new one and flushed the line. Suddenly, the patient asked for help because she was suffocating and she stopped breathing with acute hypoxemia. One of the anaesthesiologist in the PACU performed manual ventilation restoring effective oxygenation. The patient had a high blood pressure with tachycardia. The Glasgow Scale Score was three. Glycaemia was normal and so the anaesthesiologist suspected a medication error realised a monitoring of neuromuscular block. The TOF score was 0 / 4 revealing the curarisation. Then she was intubated after IV propofol injection. On the next day, the anaesthesiologist explained that he hadn't flushed the venous line after the last myorelaxant bolus and this medication was probably still in the venous line at the end of the surgery. The replacement of the flacon has conducted to a myorelaxant bolus in PACU. After this incident, the patient was informed about the situation and what happened. She didn't report any post-traumatic stress disorder.

Good points: *care during a crisis code, early diagnostic, and good teamwork.*

Ways for improvement: *Keep calm and talk with patient when patient awake, use of hypnotic as soon as possible. Flush venous line before extubation and remove extension tube for IV catheters.*

KEY WORDS: *error / medication / hypoxia*

PERIOPERATIVE MANAGEMENT OF RIVAROXABAN

A patient was treated for atrial fibrillation with amiodarone and rivaroxaban. He had a prostate cancer so a radical prostatectomy was carried out under general anaesthesia. No disorder had been reported during recovery in postop ward. For ten days after surgery, he was treated with subcutaneous enoxaparine. According to the surgeon, he asked an anaesthetist what was the safest way to switch enoxaparine for rivaroxaban. The anaesthesiologist recommended administering enoxaparine and rivaroxaban during three days then to stop enoxaparine. Unfortunately, the patient suffered from important pelvic bleeding two weeks after the prostatectomy. An uretro-vesical disjunction occurred associated to a rectum fistula. Two heavy new procedures were needed to fix this problem with severe lifelong bodily injury.

Good points: *planning of treatments after this sentinel.*

Ways for improvement: *written prescription, knowledge of international guidelines, .*

KEY WORDS: *overload / rivaroxaban / haemorrhage*

INCIDENT DURING EPIDURAL ANALGESIA

At 5:30 a.m., anaesthesiologist was called for epidural analgesia during labour. In seating position, the epidural space was easy to find but the catheter insertion was judged as difficult with paresthesia. No problem was encountered with the aspiration test and 3 ml of lidocaine 2% without epinephrine was injected. In dorsal decubitus position, a new aspiration test was performed with sero-hematic liquid. Nevertheless, the anaesthesiologist decided to inject 5 ml of local anaesthetic. Being concerned about sero-hematic liquid into the catheter, he decided to check one more time and the aspiration found venous blood inside the catheter. After a short explanation to the patient, he removed the epidural catheter and put another one. Labour analgesia was effective and a child was born three hours later.

Good points: *epidural catheter was removed, repeated aspiration test, no fixation error, and no go situation.*

Ways for improvement: *coping with fatigue, Ostrich effect.*

KEY WORDS: *Fixation / omission bias / epidural*

OPERATION ON INCORRECT SITE

A left ureteroscopy had to be performed under general anaesthesia in the middle of the day. Every caregiver was stressed due to numerous equipment problems (device not available or malfunction). All the surgery was delayed and the team was exhausted. The surgeon realised that the operation was performed on the right side instead of the left side when the patient was extubated in the recovery room. After short information of the patient and relatives, the patient was anaesthetised for a new procedure. According to the reporter (CRNA), the checklist had been realised effectively just before the act.

Good points: *process error discovered.*

Ways for improvement: *second time-out just before skin incision (WHO Surgical Safety Checklist), better knowledge of the impact of stress on decision making processes, pressure to proceed.*

KEY WORDS: *operation site / stress / error*

PEROPERATIVE MEMORISATION

At the end of a very busy day on Friday evening, an obese female patient had surgery for symptomatic lumbar discal hernia. Preparing the extubation, the anaesthesiologist reduced the sevoflurane concentration while the surgeon and the nurses were waiting for the stretcher-bearer. The caregivers were exhausted and happy. When the assistant arrived in the ORT, they began to laugh at the weight of the patient and her physical status. Unfortunately, she was awake. A few minutes later, she was crying in the PACU. The nurses in the PACU didn't understand and the patient explained the situation and what she had heard. She had to wait until the next day to receive apologies from the surgeon and his assistant.

Good points: *apologies from the surgeon and his assistant.*

Ways for improvement: *ethical rules and obligations, sterile cockpit during induction and end of surgery, avoid distraction.*

KEY WORDS: *Memorisation / ethic / patient vulnerability*



DEFECTIVE EMERGENCY OPERATING THEATER

Early in the morning, an anaesthesia station was out of order in an OR where many patients were scheduled. So the anaesthesia station from the emergency operating theatre replaced the defective device without informing the chief officer. A few hours later, a patient had a hemorrhagic shock due to severe intra-abdominal bleeding. All the operating rooms were being used and the emergency OR was opened. The anaesthesia team discovered the defective equipment and fortunately found another one available. Moreover, there was a

transient problem with the table leading to a really stressful situation. No more details about the patient outcome and the impact of this event.

Good points: *resilience of the team.*

Ways for improvement: *Teamwork, leadership, communication, resisting to pressure to proceed, sanctuarisation of the OR dedicated to emergency procedure.*

KEY WORDS: *production / safety / emergency*

Bibliography

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TAKE HOME MESSAGES

- checklist
- call for help as soon as possible
- beware of bad communication during handover shifts (I-PASS)
- Cope with fatigue and stress and impact on patient safety