ADVANCED CLNC®
Practice-Building Program

Wake Up to a New Take on Anesthesia Cases

EDITED BY
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THE PIONEER OF LEGAL NURSE CONSULTING
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# WAKE UP TO A NEW TAKE ON ANESTHESIA CASES

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WAKE UP TO A NEW TAKE ON ANESTHESIA CASES

I. INTRODUCTION

A. Approximately 40 Million Anesthetics Performed Each Year

1. Anesthetics are administered by:
   a. Physicians (MD, DO, DDS, DMD).
   b. Certified registered nurse anesthetists (CRNA).
   c. Anesthesiologist assistants (AA).

2. Many different types of anesthesia (general, regional or sedation) are in use today.

3. All providers are required to maintain continuing competence to practice through education and practice demonstration.
   a. Recertification standards are changing from the CEU/CME requirement.

B. Anesthesia Accidents and Errors

1. Anesthesia mishaps can result in death, severe brain damage, peripheral nerve damage, cardio/respiratory impairment and psychological trauma.

2. Due to the improvements in anesthesia care, most surgery is now seen as low risk.

II. COMMON ANESTHESIA CASES

A. Failed Intubation – Airway Mismanagement

1. Poor airway.

2. Obese patients (difficult airway, sleep apnea).

3. Pediatric patients (inappropriately sized equipment).
B. Hypoxia in the Postoperative Period Resulting in Death or Brain Damage

1. Excessive narcotics resulting in respiratory depression.
   a. May be compounded by other concurrent medications.

2. Insufficient reversal of skeletal muscle relaxants.

3. Poor airway control (patients with obstructive sleep apnea).

C. Nerve Damage

1. Pressure on nerve bundles (axillary, peroneal, neck).
   a. Poor positioning.
   b. Inadequate padding.

2. Regional anesthesia.
   a. Toxic substance injection.
   b. Interneuronal injection.

D. Intraoperative Awareness Under General Anesthesia

1. Incidence is reported at 0.1% to 0.2%.

2. Incidence is approximately ten times higher in children.

3. Must be differentiated from awareness during sedation.

III. COMMON PLAINTIFF ALLEGATIONS FOR ANESTHESIA CASES

A. Failure of Anesthesia Provider to Monitor Patient, Resulting in

1. Anoxia, hypoxia or inadequate ventilation.
   a. Intubation problems.
   b. Intraoperative hypoxia.
   c. Hypercarbia from hypoventilation.
   d. Poor airway management in postoperative period.

2. Inappropriate intraoperative management.
   a. Inadequate blood or fluid replacement.
   b. Organ failure from hypotension.
   c. CVA from hypertension.
   d. Poor blood sugar control.
3. Injuries from inappropriate positioning.
   a. Nerve damage.
      (1) Peroneal nerve.
      (2) Brachial plexus.
      (3) Visual loss (prone position).
   b. Muscle damage from lack of support or padding.
   c. Prolonged extreme positioning to facilitate robotic surgery.

B. Failure of Anesthesia Provider to Communicate with the Medical Team, Resulting in

1. Inappropriate anesthetic choice.
   a. Lack of medical consultation (hematology, cardiac, etc.).
   b. Lack of complete preoperative evaluation.

2. Inappropriate patient selection.
   a. Multiple medical conditions.
   b. No one to care for the patient postoperatively.
   c. Obstructive sleep apnea.

3. Wrong site or wrong patient surgery.
   a. Failure to review history and physical.
   b. Failure to review consent form.
   c. Failure to participate in “time out” procedure with all staff.

4. Lack of coordination between surgeon and anesthesia.
   a. Failure to appreciate blood loss or need for replacement.
   b. Failure to communicate the urgency of the situation.
   c. Failure to discuss appropriateness of the case for the surgery center (length of case, complexity).

C. Failure of Anesthesia Provider to Communicate with Patient, Resulting in

1. Lack of informed consent.
   a. Speaking beyond the patient’s level of comprehension.
   b. Failure to answer patient’s and family’s questions.
   c. Failure to disclose known, common complications.
   d. Failure to obtain interpretive services.

2. Lack of a complete preoperative evaluation.
   a. Assuming items not supported by fact.
   b. Asking questions not understood by the patient.
   c. Receiving questionable information from family members.
d. Failure to confirm NPO status.

3. Lack of appropriate preoperative care.
   a. Medication management.
   b. Excessive sedation before the procedure.

D. Intubation/Extubation Problems Resulting in
   1. Laceration or perforation of the trachea.
   2. Laceration or perforation of the esophagus.
   3. Injury to the vocal cords.

E. Failure to Refer Resulting in
   1. Delay of appropriate therapy.
   2. Inappropriate discharge to home.

F. Failure to Treat Resulting in
   1. Poor glucose regulation (hypoglycemia or hyperglycemia).
   2. Poor temperature control.
   3. Poor blood pressure control (hypotension or hypertension).

G. Psychological Trauma, Resulting from Intraoperative Awareness

H. Delay in Response or Treatment
   1. Failure to respond timely to alterations in patient’s condition.
   2. Failure to provide sufficient monitoring.
IV. COMMON DEFENSES FOR ANESTHESIA CASES

A. Adherence to Appropriate Standards of Care (SOC)

1. Sources of SOC.
   a. American Society of Anesthesiologists.
   c. Credentialing agencies.
   d. Industry organizations

2. Appropriate use of monitors given the patient’s condition.
   a. Invasive v noninvasive monitoring.
   b. End-tidal carbon dioxide measurement.
   c. Pulse oximetry.
   d. Expired anesthetic gas concentration.

3. Appropriate preoperative evaluation.
   a. Patient history (medical and anesthetic).
   c. Airway with regard to possible difficult intubation.
   d. Airway with regard to possible postop difficulty.
   e. Current lab, radiologic and other tests.
   f. Review of current medications.

B. Consent Was Informed, Clear and Complete

1. Appropriate documentation.
   a. Consent included common, foreseeable complications.
   b. Preoperative assessment included patient-specific items and the plan to handle them.
   c. Patient and family questions were answered to their satisfaction.
   d. The conversation took place in a language that the patient was conversant in.

C. Patient Did Not Provide Critical or Complete Information

1. Previous anesthetic complications.

2. Previous surgical procedures.

3. Incorrect information about past medical history.

4. Incorrect information concerning last oral intake (NPO status).
5. Current medication history.
   a. Prescription medication.
   b. Herbal medications and therapies.
   c. Over-the-counter medications (OTCs).
   d. Legal, nonmedicinal items (alcohol, marijuana).
   e. Illicit drug use.

D. Patient Noncompliance
   1. Inappropriate postoperative supervision at home (e.g. a child not having appropriate adult supervision in the postop period with subsequent bleeding episode).
   2. Patient participated in contraindicated activities (driving, operating dangerous equipment, alcohol intake, etc.).
   3. Patient did not adhere to alterations in the medication schedule in the 24 hours before surgery.

E. Allegation Is the Fault of Other Providers
   1. Failure of other practitioners to optimize the patient for surgery.
   2. Failure of others involved to follow correct procedures.

V. THE ROLE OF THE CERTIFIED LEGAL NURSE CONSULTANT<sup>CM</sup> IN ANESTHESIA CASES

A. Provide a Complete Review of the Anesthesia Record
   1. Detect slight differences in charting by various parties.
   2. Decipher the highly technical language inherent in anesthesia cases.
      a. Explain the record for the attorney to understand.
      b. Provide necessary translations for the jury.
      c. Fully define terminology that may be commonly misunderstood.
   3. Review credentialing and accreditation procedures.
B. **Decipher the Anesthesia Record**

1. Explain abbreviations. *(Exhibit B)*
   a. The Joint Commission only specifies a list of prohibited abbreviations.
   b. Many abbreviations may be specific to a certain practice, locale or educational background.

2. Explain monitors (purpose, use, limitations, and expected information).

3. Explain the vital signs in records.
   a. What was or was not recorded, how it was obtained, reason for variations and the means to verify information charted.

4. Explain the medications administered, the reason for each, the expected outcomes and any residual effects.

5. Explain patient positioning for administration of anesthesia and for the procedure.

   a. Relevance of various organ systems to the choice of anesthetic.
   b. Significance of patient condition to the choice of anesthetic technique.
   c. Airway evaluation.

C. **Compare the Anesthesia Record with Other Records**

1. Check for agreement between the preop evaluation and available test data.

2. Review office records from the surgeon prior to surgery.

3. Review office records from the primary care physician or internist.

4. Check for agreement with other records (intraoperative, postanesthesia).
D. Locate Testifying Experts
   1. Physicians.
   2. Nurse anesthetists.
   3. Supporting specialists (cardiologist, pulmonologist, etc.).

E. Research Regarding Plaintiff
   1. Check social networking information.
      a. Determine if the plaintiff’s activities after the incident correlate with the allegations.

F. Research Regarding Defendant
   1. Training (basic and specialty).
   2. Proficiency in regional analgesia and anesthesia.
   3. Continuing education.
   4. Recertification.
   5. Disciplinary record.
   7. License actions, discipline or complaints.
   8. Health status including any medications.

G. Research Regarding Testifying Experts
   1. Training (basic and specialty).
   2. Recent clinical practice.
   3. Testifying experience.
   4. Authorship of publications, periodicals or newsletters.
      a. Aim for leading edge research.
      b. Look for any change in opinions over time.
   5. Social networking information.
VI. INTERROGATORIES AND REQUESTS FOR PRODUCTION

A. Interrogatories Directed to the Defense

1. Please describe the regularly scheduled maintenance performed on the anesthesia equipment and associated physiologic monitors at (Facility) _________ from (Date) ___________ to (Date) ___________. [Routine calibration of monitors and anesthesia equipment is necessary and is usually performed by trained personnel who are either under a service contract or employed by the facility's biomedical department.]

2. Please list the individuals who performed any repair or regularly scheduled quality control of the anesthesia equipment at (Facility) _________ from (Date) ___________ to (Date) ___________ and describe their minimum and advanced qualifications. [Essential to know if the personnel performing the service had factory training or equivalent training in that specific equipment.]

3. Please describe the anesthesia machine used to administer anesthesia to (Plaintiff) _________ on (Date) ___________ including:
   a. Purchase date.
   b. Where purchased
   c. What date the unit was placed into service.
   [Need to know how long this particular piece of equipment has been in service. Is old equipment still supported by the manufacturer?]

4. Please describe the equipment used to monitor (Plaintiff) _________'s vital signs and the anesthesia recordkeeping system in use on (Date) ___________ at (Facility) _________.

5. If a computerized anesthesia recordkeeping system was in use at (Facility) _________ from (Date) ___________ to (Date) ___________ please describe the system including:
   a. Data input methods (automatic v manual).
   b. Data storage.
   c. Backup procedures in effect from (Date) ___________ to (Date) ___________.
   d. Security procedures to limit access to patient data from (Date) ___________ to present.
   e. Software provider.
   f. System upgrades (software and hardware).
6. Please describe the initial credentialing and periodic recredentialing process for anesthesia providers at (Facility) ________ in effect from (Date) __________ to (Date) __________. [The first date should precede the credentialing cycle date of the defendants.]

7. Please describe the minimum education and certification requirements for anesthesia providers at (Facility) ________ in effect from (Date) __________ to (Date) __________ including the process used to confirm this information. [The first date should encompass the recertification period immediately preceding the incident date.]

8. Please describe the procedure and the equipment that was used for a difficult tracheal intubation at (Facility) ________ from (Date) __________ to (Date) __________.

9. Please describe the process used at (Facility) ________ from (Date) __________ to (Date) __________ to prepare a patient for anesthesia prior to the procedure or surgery.

B. Interrogatories Directed to the Plaintiff

1. Please list any healthcare providers (Plaintiff) ________ has visited or received professional advice from in the past two years.

2. Please list all medications used by (Plaintiff) ________ in the past year and the reason for their consumption. [Herbal and OTC medications can have a significant impact on various organ systems.]

3. Please list any and all procedures requiring anesthesia of any kind, (including childbirth) that (Plaintiff) ________ has had from (Date) __________ to (Date) __________.

4. Please explain why (Plaintiff) ________ chose (Facility) ________ to have their procedure or surgery.

5. Please describe in detail (Plaintiff) ________ ’s recollection of events on the day of the procedure in question at (Facility) ________ . [Plaintiff may not recall some events due to the effect of medications received.]

6. Please explain why (Plaintiff) ________ is questioning the anesthesia care provided and when the plaintiff first became concerned.
7. Please explain what specific life alterations (Plaintiff) _________ has experienced since (Date of Incident) _________.

C. Requests for Production Directed to the Defense

1. Please provide a copy of the service records for all anesthesia equipment used in (Plaintiff) _________'s care on (Date) _________ at (Facility) _________.

2. Please provide a copy of the audit trail and the security audit trail for the anesthesia computer recordkeeping system used specific to the care of (Plaintiff) _________ from (Date) _________ to (Date) _________. [The audit trail is useful in determining if any of the information was changed, when, by whom, from what computer and what the original information was. The security audit trail can show who accessed and viewed the information even if it was not changed.]

3. Please provide a copy of the work schedule for (Defendant) _________ including:
   a. Time on call.
   b. Any time worked on call from (Date) _________ to (Date) _________. [The information requested is not specific to the facility where the allegation occurred since many anesthesia providers may practice at more than one facility. The purpose of this question is to look for possible fatigue factors.]

4. Please provide a copy of the policy or procedure in effect at (Facility) _________ from (Date) _________ to (Date) _________. [The information requested is not specific to the facility where the allegation occurred since many anesthesia providers may practice at more than one facility. The purpose of this question is to look for possible fatigue factors.]

5. Please provide a copy of the policy or procedure in effect from (Date) _________ to (Date) _________ at (Facility) _________ approved by the institution for patients with known or suspected malignant hyperthermia.

6. Please provide a copy of the policy or procedure in effect from (Date) _________ to (Date) _________ at (Facility) _________ approved by the institution for patients with known or suspected latex allergy.

7. Please provide a copy of the policy or procedure in effect from (Date) _________ to (Date) _________ approved by the institution for patients with a known or suspected difficult airway.

Please provide a copy of the medical staff bylaws in effect from (Date) _________ to (Date) _________ for (Facility)
Bylaws may contain surgeon and anesthetist responsibilities, required preop testing and other items of interest.

8. Please provide a copy of any policy or procedures relating to anesthesia at (Facility) __________ in effect from (Date) __________ to (Date) __________. [Anesthesia related sections may appear in the nursing, obstetrical, radiology or policy and procedure manuals outside of the main operating room.]

D. Requests for Production Directed to the Plaintiff

1. Please provide a copy of (Plaintiff) __________’s results from any cardiac testing performed from (Date) __________ to (Date) __________.

2. Please provide a copy of any of (Plaintiff) __________’s pulmonary function tests performed from (Date) __________ to (Date) __________.

3. Please provide a copy of the anesthesia record for any anesthetics administered to (Plaintiff) __________ from (Date) __________ to (Date) __________ at (Facility) __________. [This should probably encompass a three- to five-year time frame.]

4. Please provide a copy of all prescriptions given to (Plaintiff) __________ by any healthcare practitioner prior to surgery from (Date) __________ to (Date) __________.

5. Please provide a list of any healthcare practitioners that (Plaintiff) __________ has sought care from since (Date of Incident) __________.

6. Please provide a copy of the medical records from any treating practitioner seen by (Plaintiff) __________ since (Date of Incident) __________.

7. Please provide a job description from (Plaintiff) __________’s employer current for (Date of Incident) __________.
VII. RECOMMENDED QUALIFICATIONS FOR CLNC®
SUBCONTRACTORS FOR ANESTHESIA CASES

A. Basics
   1. RN or ARNP (nurse practitioner).
   2. Experience with SOC for anesthesia-related care in effect from (Date) __________ to (Date) __________.

B. Certifications
   1. Nurse anesthetist (CRNA).
   2. OR nurse (CNOR).
   3. PACU nurse (CPAN).
   4. Risk manager (LHRM).
   5. Certified Life Care Planner (CLCP).

VIII. CASE STUDIES

A. A Case of Sleep Apnea
   1. Facts of the case.
      a. 48-year-old woman with a detached retina.
      b. Comorbidities: Diabetes, morbidly obese and history of sleep apnea.
      c. Saw her PCP two days before surgery with 3-4 day history of productive cough.
      d. Diagnosed with acute bronchitis, given antibiotics and bronchodilator.
      e. PCP did not order CPAP postoperatively (same-day surgery).
      f. Preanesthesia interview noted bronchitis and sleep apnea.
      g. Surgery performed without complications.
      h. Due to afternoon surgery and sleep apnea history, daughter asked that patient be kept overnight for observation.
i. Report on arrival to floor did not mention sleep apnea or bronchitis.

j. Given pain meds and antiemetic over several hours.

k. Appeared lethargic but arousable at midnight.

l. One hour later found pulseless, resuscitated.

m. Diagnosed with brain death, removed from life support.

2. Plaintiff allegations.

a. Nonemergent surgery should not have taken place in the presence of a respiratory infection.

b. The history of sleep apnea was not noted in report.

c. Postop monitoring was inadequate.

3. Defenses (possible)

a. Surgeon or PCP should have ordered CPAP postoperatively.

b. Inadequate report to nursing staff after transfer.

c. Daughter should have mentioned the sleep apnea to floor nurses.

4. Settled before trial.

a. Defense experts gave unfavorable reviews.

b. Settlement for over $1 million.

5. Role of the CLNC® consultant.

a. Be sure that all possible parties are named.

b. Research hospital policies on patients with sleep apnea

c. Review charting (PCP, surgeon, anesthesia) to see who would be caring for patient staying for observation.

d. Examine communication between providers.

B. Missed Complication in the PACU

1. Facts of the case.

a. 47-year-old man for repair of herniated disk at L4-L5.

b. Tolerated procedure well.

c. In PACU, blood pressure was 90/30 with increased heart rate (neurosurgeon ordered extra fluids that resulted in a slight improvement).

d. Neurosurgeon left and anesthesiologist assumed responsibility.

e. PACU nurses notified anesthesiologist three times about persistent hypotension.

f. No test ordered, patient not examined and surgeon not contacted.
g. Transferred to floor at 8:30pm with BP of 86/43.

h. Patient became unresponsive and coded.

i. Hematocrit was 14% (normal is 42% to 54%).

j. Returned to surgery, left iliac vein avulsed from inferior vena cava.

k. Massive transfusion with ensuing coagulopathy.

l. Died several days later.

2. Plaintiff’s allegations.
   b. Delay in recognizing postop complications.

3. Defenses.

4. Settled prior to trial for over $1 million.

5. Role of the CLNC® consultant.
   a. Determine the responsible party.
   b. Research policies for the PACU and transfer of patients.
   c. Advise attorney-client on anatomy in relation to the surgery and its complications.
   d. Advise attorney-client on times where intervention should have taken place.

C. **Death After Dental Surgery**

1. Facts of the case.
   a. 24-year-old man for extraction of wisdom teeth.
   b. Healthy, former college football player.
   c. Surgery took place in an office setting.
   d. Started coughing during procedure and experienced cardiac arrest.
   e. EMS notified and transferred to hospital.
   f. Diagnosed as brain dead and removed from life support.
   g. No suit filed at this time.

2. Quotes from the media (family – sister is a registered nurse).
   a. “In talking to the nurse at the hospital, from what they told me, he was given way too much anesthesia.”
   b. “…goes in for an operation as routine as having his wisdom teeth removed and dies in the process.”
   c. “He wasn’t going in for open heart surgery or something.”
   d. Natalie said, “Lapinski’s oxygen levels indicated he may have gone ten minutes without air.”
   e. “…given propofol, a surgical anesthetic that killed singer Michael Jackson.” (multiple news stories)
3. Quotes from the media (oral surgeon’s attorney).
   a. “…complications occurred despite the fact there were no apparent contraindications for his oral surgery, routine anesthetic medications were being used for the procedure …”
   b. “…immediate measures were undertaken to revive the patient as soon as the patient began to decompensate.”
   c. “all standard protocols” were followed.
   d. “However, safe as oral surgery is in today’s environment, no surgical procedure is without risk.”

4. Role of the CLNC® consultant.
   a. Work with attorney-client and media advisors.
   b. Review comments made by the opposing side.
   c. Advise attorney-client of statistics to bolster the case.
   d. Confirm or refute information reported by the media.

IX. SAMPLE REPORTS (EXHIBITS E AND F)

X. RESOURCES

A. Associations and Organizations

1. Ambulatory Surgery Center Association (ASCA).
   ascassociation.org

   aana.com

3. American Society of Anesthesiologists (ASA).
   asahq.org

4. Institute for Safety in Office-Based Surgery (ISOBS).
   isobsurgery.org

   iars.org

   samhq.com

7. Society for Ambulatory Anesthesia (SAMBA).
   sambahq.org
B. Authoritative Textbooks


C. Journal Articles


D. Websites

1. Accreditation Association for Ambulatory Health Care (AAAHC).
   aaahc.org

   aaaSf.org

3. Anesthesia Patient Safety Foundation (APSF).
   apsf.org

4. ASA Difficult Airway Algorithm.
   ether.stanford.edu/difficult_airway.html

5. Herbal and dietary supplement use and anesthesia.
   wehealny.org/services/bi_anesthesiology/herbpatient.pdf

6. The Joint Commission.
   jointcommission.org
Exhibit A
Listing of Common Outpatient Procedures

Cardiovascular
Cardiac catheterization / angiography
Cerebral angiography
Cardioversion
Pericardiocentesis

ENT
Tonsillectomy / adenoidectomy
Endoscopic sinus surgery
Otoplasty
Septorhinoplasty
Partial thyroidectomy

Orthopedic
Arthroscopies (all)
Rotator cuff repair
Excision of herniated lumbar disc
Reconstruction of knee ligaments
Unicondylar knee replacement

Eye
Cataract
Blepharoplasty
Radial keratotomy
Laser surgery for retinal tear

General surgery
Cholecystectomy (laparoscopic)
Appendectomy (laparoscopic)
Hernia repair (umbilical, inguinal, femoral) (open or laparoscopic)
Lap band placement

GYN
Tubal ligation
Diagnostic laparoscopy
Termination of pregnancy
Cervical cerclage
Myomectomy (laparoscopic)
Endometrial ablation

Plastic
Breast (augmentation, reconstruction, lift, reduction)
Liposuction
Abdominoplasty (tummy tuck)
Face lift
### Exhibit B
Common Abbreviations Seen in Anesthesia Records

<table>
<thead>
<tr>
<th>Abbreviation</th>
<th>Description</th>
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<tbody>
<tr>
<td>+ETCO2</td>
<td>Positive end-tidal carbon dioxide.</td>
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<tr>
<td>AARK</td>
<td>Automated anesthesia recordkeeping.</td>
</tr>
<tr>
<td>AIMS</td>
<td>Anesthesia information management system.</td>
</tr>
<tr>
<td>AIS</td>
<td>Anesthesia information system.</td>
</tr>
<tr>
<td>– ASP</td>
<td>Negative aspiration.</td>
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<tr>
<td>BBS=</td>
<td>Bilateral breath sounds equal.</td>
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<tr>
<td>Bupiv</td>
<td>Bupivicaine® (a local anesthetic).</td>
</tr>
<tr>
<td>CSE</td>
<td>Combined spinal epidural</td>
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<tr>
<td>CSF</td>
<td>Cerebral spinal fluid.</td>
</tr>
<tr>
<td>DES</td>
<td>Desflurane (Suprane®, an inhalation anesthetic).</td>
</tr>
<tr>
<td>ETT</td>
<td>Endotracheal tube (usually oral).</td>
</tr>
<tr>
<td>EPI</td>
<td>Epinephrine.</td>
</tr>
<tr>
<td>EPID</td>
<td>Epidural.</td>
</tr>
<tr>
<td>FFCSF</td>
<td>Free flow of cerebral spinal fluid.</td>
</tr>
<tr>
<td>ISO</td>
<td>Isoflurane (Forane®, an inhalation anesthetic).</td>
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<tr>
<td>LIDO</td>
<td>Lidocaine (a local anesthetic).</td>
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<tr>
<td>NRB</td>
<td>Nonrebreathing (a type of anesthesia circuit or oxygen mask).</td>
</tr>
<tr>
<td>NTT</td>
<td>Nasotracheal tube.</td>
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<tr>
<td>OSAS</td>
<td>Obstructive sleep apnea syndrome.</td>
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<tr>
<td>PNS</td>
<td>Peripheral nerve stimulator.</td>
</tr>
<tr>
<td>RSI</td>
<td>Rapid sequence intubation.</td>
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<tr>
<td>SCCA</td>
<td>Semi-closed circle absorber (a type of anesthesia circuit).</td>
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<tr>
<td>SEVO</td>
<td>Sevoflurane (Ultane®, an inhalation anesthetic).</td>
</tr>
<tr>
<td>SUX</td>
<td>Succinycholine (a rapid acting, short duration paralytic drug).</td>
</tr>
<tr>
<td>XYLO</td>
<td>Xylocaine® (a local anesthetic).</td>
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Exhibit C
American Society of Anesthesiologists
Physical Status Classification System

P1  A healthy patient.
P2  Patient with mild systemic disease.
P3  Patient with severe systemic condition(s), not a constant threat to life.
P4  Patient with severe systemic condition(s) that is a continual threat to life.
P5  A gravely ill patient who is not expected to survive without the operation.
P6  Patient declared brain-dead, organs are being removed for donation purposes.

The letter ‘E’ may be added after the physical status to indicate the emergent status of the patient, e.g. P2E or ASA2E.
Exhibit D
Mallampati Classification

The classification is used as a general indicator of the degree of difficulty that may be experienced during laryngoscopy for tracheal intubation.

Class 1    Full visibility of tonsils, uvula, hard and soft palate.
Class 2    Visibility of hard and soft palate, upper portion of tonsils and uvula.
Class 3    Soft and hard palate and base of the uvula are visible.
Class 4    Only hard palate visible.
The following review is based upon information provided by EF concerning the anesthesia care provided to AL during an office surgical procedure on (Date) __________.

Information reviewed:

- Anesthesia preoperative evaluation completed by WE.
- Anesthesia record completed by WE.
- Anesthesia consent form.
- Office notes of the surgeon, JS.
- Operative notes of JS.
- Emergency department notes.

Additional public information reviewed:

- License status of WE.
- License status of JS.

Additional information provided at a later date may cause changes to this review.

Summary of events

The patient, AL, sought esthetic surgery by Dr. JS. The surgical procedure was explained to AL including the facts that the procedure would be accomplished in the office setting with a general anesthetic. The majority of the preoperative note by Dr. JS is concerned with the surgical procedure. Extensive documentation is seen concerning the risk of infection, poor result, surgical complications, etc. A brief note was made that AL’s general health “is excellent.” Preoperative instructions (written and verbal) were given to the patient concerning actions to be taken the morning of surgery (no aspirin, nothing to eat or drink).

The morning of surgery, AL presented to Dr. JS’s office for the procedure. After arrival, WE, a certified registered nurse anesthetist, interviewed AL and completed the preoperative evaluation form. This various body systems (respiratory, cardiovascular, neurologic, kidneys, liver, gastrointestinal, musculoskeletal) were checked off as normal. Medications were listed as “none.” There is no written reference to the heart or
lung sounds being auscultated. An anesthesia consent form was signed by AL though there is no reference in the records that any of the risks of general anesthesia were discussed with AL by WE.

The anesthesia record indicates that the anesthetic time started at 7:47am with the first set of vital signs charted on the graph at the 7:50am mark. The anesthetic was induced with Propofol 150mg, Fentanyl 50mcg and Versed 2mg. At this point, a laryngeal mask airway (LMA) was inserted and AL was ventilated with a mixture of oxygen (1LPM), nitrous oxide (2LPM) and isoflurane (1.7%). After the surgeon made his initial incision (surgery start time noted as 7:58am) there is a comment “blood dark.” The chart shows that the nitrous oxide was discontinued at about the same time. Soon after, there is a note “called for transfer.” At 8:05am the isoflurane percentage is charted as “0.” The last notation of the oxygen saturation before transfer was 89%. Nothing is charted concerning the breath sounds.

The record from the ED indicates that the patient had diffuse wheezing on arrival. AL was treated aggressively with a breathing treatment (albuterol, a bronchodilator) and intravenous steroids (methylprednisolone 100mg). Physician notes showed a rapid improvement in AL’s oxygen saturation.

Questions and thoughts

- It would be helpful to interview the plaintiff as to any health history that was not uncovered in the preoperative period.
  - History of asthma.
  - History of GERD (gastroesophageal reflux disease). (Use of the LMA may have been inappropriate for this case.)
- There was never any note by either JS or WE concerning AL’s breath sounds. This is especially significant in the time period when the blood was noted to be dark. Hearing the wheezing at that point could have led to early treatment and possible resolution of the problem.
- While a signed consent form for the anesthesia is present, there is no reference to any discussion in the record of the risk, benefits and alternatives of the anesthetic being discussed with AL prior to the procedure.
- As part of the discovery process, it would be helpful to receive a list of all of the medications that were available in the office that day. State law provides a list of medications that should be available in the office setting when a general anesthetic is utilized for surgery (listed as Level III surgery).
- The preoperative preparation of the patient and the response (or lack thereof) is most troubling. These seem to be the weak points in the anesthetic care that was rendered.
- While lack of documentation of the informed consent process did not contribute to the incident, it may be beneficial to follow this item further.

This completes the quick review requested of the anesthetic care that AL received. Additional information can be obtained from the records should you decide to go forward with this case. As always, I remain available should you wish to discuss this case further.
The following review is based upon information provided by EF concerning the anesthesia care provided to AL during a surgical procedure on [date] at Elsewhere General Hospital. Specifically this is to address the subject of a possible case of malignant hyperthermia and the response of the hospital staff.

Information reviewed:

- Anesthesia preoperative evaluation.
- Anesthesia record.
- Anesthesia consent form.

Additional information provided at a later date may cause changes to this review.

Summary of events

AL was scheduled for a surgical procedure at Elsewhere General Hospital. This was to be done on an outpatient basis (enter and leave the hospital on the same day). As a part of the preanesthesia evaluation, AL was asked to complete a health questionnaire. One of the questions referenced whether any blood relatives had ever experienced an adverse reaction to an anesthetic. AL was not aware of such incident and answered the question in the negative.

The start of anesthesia was very difficult with a variety of unusual heart rhythms (increased heart rate, extra heart beats, etc.) and muscle rigidity. The procedure was cancelled and AL was awoken and taken to the recovery room. While in the recovery room his vital signs were closely monitored. AL was treated with a course of the drug Dantrolene. During this time the vital signs returned to normal. He was kept in the hospital overnight to closely monitor his vital signs and discharged the next morning after consultation with anesthesia and his surgeon.

Background

Malignant hyperthermia (MH) is a genetically inherited error in metabolism. When exposed to a trigger agent (any of the commonly used inhalation anesthetics or the muscle relaxer succinylcholine) the body may exhibit signs of an accelerated metabolic
rate. Often this is seen as increased heart rate, jaw rigidity, rapid use of oxygen and high levels of carbon dioxide in the exhaled air. In advanced cases, the body temperature may rise very quickly thus the name malignant hyperthermia (MH).

Currently, there is genetic testing that can be accomplished by mail to see if someone is susceptible to MH. This test is not inexpensive and coverage of the test by health insurance can sometimes be problematic. There is another type of test for MH. This involves a muscle biopsy of the patient. This must be accomplished at a testing center (four in the US and one in Canada).

The treatment for MH consists of the administration of the drug Dantrolene and supportive care (increased oxygen supply, active cooling and correction of any acid-base or electrolyte imbalance). Dantrolene should be stocked by any facility that administers inhalation anesthetics or uses succinylcholine. Rapid, aggressive treatment of this disease is crucial. Many facilities utilize MH drills to practice the team response necessary to treat a patient with MH.

While AL does not like the fact that the procedure was not accomplished, the risk of a full blown episode of MH is not acceptable. The mortality rate of a full blown MH event was 70% in the 1970s. With increased awareness and ready availability of Dantrolene, the mortality rate has plummeted to 5%. When a patient is suspected or known to be MH susceptible, alternate methods can be used to bring the risk to zero.

AL can still receive an anesthetic for this procedure. There are ways to administer a general anesthetic without utilizing any of the inhalation anesthetics that are known trigger agents. Use of local anesthetic and IV sedation might also be a possibility.

Chart review

A review of this chart brings out several items. One is a notation “MH?” This is followed by “MH protocol started.” This, and other aspects of the charting, indicates that the possibility of AL having MH was thought of early on. The reference to a MH protocol indicates that this facility has done appropriate preplanning for such an emergency response. All of the steps that were taken seem to be appropriate and well within the standard of care for this situation.
Impression

All of the information that has been presented about this incident shows an appropriate response to what was perceived to be a potentially deadly situation. The facility was prepared for this type of incident by having the correct medication on hand and by having an appropriate process to minimize harm to the patient.

This completes the review requested of the anesthetic care that AL received at Elsewhere General Hospital. Additional information can be obtained from the records should you decide to go forward with this case. As always, I remain available should you wish to discuss this case further.