



Winter 2011

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In closing the last issue of OASIS in Fall 2010, it was optimistically written that the Winter issue of OASIS would be dedicated to OR fire safety. Unfortunately, winter has not only come and gone, spring has also and it was a long hot summer. So, here is the "Winter issue" turned fall OASIS. The remaining two talks from the 2010 annual OAS to be reviewed are those of Drs. Victor Ryckman and Andrew Schachat, both of the Cole Eye Institute at the Cleveland Clinic. We will also include Gabriele Roden's poster from Bascom Palmer at the University of Miami on Intermittent Oxygen and Fire Hazard Precautions during Monitored Anesthesia Care for Oculoplastic Surgery. Their poster was also be displayed at this year's OAS meeting.

Fire Safety in the Operating Room

Dr. J Victor Ryckman, Senior Staff Anesthesiologist at the Cleveland Clinic, gave a very practical and well done talk on Fire Safety in the Operating Room. Dr. Ryckman began by pointing out that the current risk of an OR fire is just as great now as when ether was used for anesthesia and that N₂O-O₂ is as bad as 100% O₂. An operating room fire has been deemed a "never event" by the National Quality Forum and the Centers for Medicare and Medicare Services (CMS) similar to an instrument being left in a patient and wrong site surgery.

He discussed the various factors that combine to lead to intraoperative fires followed by those factors that will prevent patient injuries from fire. Fire requires the presence of three components, known as the "fire triad": (1) an oxidizer, (2) an ignition source, and (3) fuel.

1. *Oxidizers* used in the OR are oxygen and nitrous oxide. An oxidizer-enriched atmosphere increases the likelihood and intensity of combustion as lower temperatures and amount of energy are required in the presence of oxidizers. An oxidizer-enriched atmosphere commonly exists within closed or semiclosed breathing systems, including the patient's airway. It can also be created locally when the configuration of the drapes and open oxygen sources (e.g., masks, nasal cannula) promote the trapping or pooling of oxygen or a mixture of oxygen and nitrous oxide.



Twenty-five Years of OAS: A Personal Tribute

By Gabriele Roden, MD

I had to dig deep in my file drawer to locate my original certificate as a founding member of OAS dated 1987. It featured two personalities that have since moved on. Robert Hustead, who signed the certificate with a certain sprawling gusto and total conviction of his mission., and secondly, and of lesser importance to the operation, Gabriele Troll MD, then single, now about to celebrate my twenty-second wedding anniversary to my husband Robert Roden.

I remember how eager I felt when I received the above certificate in the mail. It was a tangible piece of my dream to be part of something greater, of making a contribution and a promise of a place and a time to learn together. In my spare time I would serve on the board and write a column to the quarterly (then printed) newsletter. The dream lingered but never set in motion.

Instead I have moved from my first tiny antique New England home through two condos by a tidal river on the South Shore of Boston, another house at the Pinehills, Plymouth MA, to our current home in Florida. My real estate ventures roughly matched the relocation of at least four different hotels in Chicago for our meetings.

My OAS certificate has been a silent witness to my job transition from my first position as sole anesthesiologist and medical director at NE Eye Surgicenter in the late 80s to my current job at Bascom Palmer, U. Miami. During my interview



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25 Years of OAS (continued)

at NE Eye in April 1986, one of the first high volume cataract surgeons who founded his own ophthalmic Surgicenter, Dr. Brent Lambert, asked me if I had ever done any "blocks". Never having done so, I was sure this would be a deal breaker for this job that promised no more night call, but I had to be honest. My timid "Never" did not seem to perturb him in the slightest. Instead he announced enthusiastically "Good, then I can teach you in a day or two and welcome aboard!" I wondered why this technique had never even been a topic of discussion during my residency at Yale. Spinals were the block of the decade then.

I definitely needed help and jumped at the opportunity to learn from other colleagues at the OAS. Within a year or two Roy Hamilton and Gary Fanning became my ophthalmic anesthesia teachers, gurus and heroes. Being eager to learn and being the conscientious type, I dusted off all my anatomy books and bought some more.

The specialty of Ophthalmology had appealed to me early on. I felt passionate about taking care of the elderly, whose quality of life was dependent on good visual outcome. Ophthalmic surgeons also had endearing qualities. They were usually gentlemen who appreciated classical music, travel and the fine arts. I enjoyed working with them side by side. They often extended the courtesy to say "Thank You" at the conclusion of their surgical schedule. To this day I am struck by their thoughtfulness and enjoy a collegial camaraderie that seems more personal than I was able to establish in the high intensity setting of "neuro" or thoracic surgery.

Between 1986 and 1988 I had successfully blocked over 4000 patients and started to trust my technique of peribulbar blocks. I had developed a certain tactile sense where

the needle tip was going. Then came the day the phone rang in my kitchen, as I was about to prepare dinner. In the distance was the retina consultant from Boston whose tone resonated with sobering professionalism. He asked me if anything unusual had occurred during the block of one of my patients that week. Without further hesitation I was told that a perforation had occurred with a serious hemorrhage and retinopathy. A sinking feeling grabbed my entire body as I held on to the cold granite counter. My mouth turned into a speechless, voiceless sandbox as I swayed into a whirlpool of fear, failure, guilt, sheer terror and uncertainty, all hurled at me at once. It was the darkest moment in my anesthesia practice. How did this happen?

Over the years the sharp lines of accuracy have mercifully faded and I don't know if the events I came to believe would pass the litmus test. At the time we performed blocks in semi-upright recliners. I remember that after modest dose of sedation, this particular patient recoiled from the first needle contact through the skin. With a frightful force he moved back into the recliner, which then bounced with some forward momentum faster than I could withdraw the needle. I had to try again. This memory may have served to stabilize my ability to carry on and I may never know the entire truth. It is a fact however, that at that time, I used a 25 G 1 ½ in. sharp disposable needle, now obsolete for blocks. I also remember that while the patient struggled with a bad outcome, I could hardly eat or sleep for months. The pending lawsuit fizzled out in my favor as the patient, with whom I met several times with a sincere act of contrition, withdrew any complaint. It was the low point of my career, which at the time was everything I lived for.

From that time on I dedicated my anesthesia practice to study, learn and teach ophthalmic regional anesthesia at the Mass. Eye & Ear Infirmary from 1992-2006. It is remarkable that I was recruited in 2006 between sessions at the OAS to join Bascom Palmer for a staff position at their new off-



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25 Years of OAS (continued)

site facility. I feel forever indebted to all my colleagues and teachers at the OAS who have brought me this far.

We have all come a long way since the early days of the OAS. There were growing pains. In the beginning I remember certain party lines between CRNAs, MDs, both anesthesiologists and ophthalmologists, which became a bit of a battleground at times. Fortunately these heated discussions retreated to behind closed doors and were resolved successfully by an organized governing body with the common goal to better serve all our patients.

For all the years I attended the OAS, I only played "Hooky" a few times. It was on a Sunday morning four years ago, that I received a phone call from Germany that my Mom had passed on. I first attended a high mass at the Holy Name Cathedral. I then found comfort that warm, sunny morning by stepping aboard for the famous architectural river cruise. No clinical pearls or engaging speakers could lure me back to a cold and drafty conference room that day. It was one of the best visits I ever had with my mother, as I felt her presence right next to me on that boat.

Last year I chose to come to Chicago instead of attending our 40th class reunion of medical school in Cork Ireland. The dates were too close to go to both. On Saturday night I was picked up by a black Mercedes limo to have a reunion dinner with one of my former classmates Paul Whelton MD, now CEO at Loyola University Health System. Paul and his charming wife filled me in of the whereabouts of many former classmates. I was happy to observe that he was still the same gentleman I remembered from our clinical rotations forty years ago, when he allowed me to stand in front of him to better see any ongoing surgery.

Today our OAS members come together fervently to celebrate the proven fact that collectively we have made some progress in our common strive for better and safer ophthalmic anesthesia. The lessons learned have become as valuable as the friendships we have formed in this unique society. It is like coming home each year to Chicago, where it all began 25 years ago.

"Avoid the Superonasal quadrant!"

"Avoid injections above the horizontal midline, too vascular!"

"Avoid the deep orbit!"

I don't ever want to hear the words "I told you so" from my trusted friend and teacher Gary Fanning. Also my sincere thanks to all other colleagues, Marc Feldman, Scott Greenbaum, Gwendolyn Boyd, Ric Rivers, Steve Gayer, Randy Harvey, Dan Simonson and more recently Joe Bayes, who have worked so hard to keep this amazing society alive and well and moving forward true to its mission.

I therefore return year after year to listen, to learn and never forget.



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Fire Safety in the Operating Room (continued)

2. *Ignition* sources include, but are not limited to, electrosurgical unit (ESU) or electrocautery devices, lasers, heated probes, drills and burrs, argon beam coagulators, fiberoptic light cables, and defibrillator paddles or pads. Dr. Ryckman mentioned that the temperature in an unipolar ESU can get to 900 degrees C or higher.

3. *Fuel* sources include, but are not limited to, endotracheal tubes; sponges; drapes; gauze; alcohol-containing solutions; solutions containing other volatile compounds, such as ether or acetone; oxygen masks; nasal cannulae; the patient's hair (even with 50% oxygen hair becomes an excellent fuel source. Mascara and a Hot Temp even with room air is a highly flammable combination and the eye lashes are gone forever (\$1million lawsuits have successfully been litigated for the plaintiff); dressings; ointments; gowns; gastrointestinal tract gases; blankets; suction catheters; flexible endoscopes; fiberoptic cable coverings; gloves; and packaging materials.

This fire triad was taken from the ASA Practice Advisory for the Prevention and Management of Fires in the Operating Room.

In 2010, the AORN developed its Fire Safety Tool Kit that incorporates the new ECRI recommendations, updated policies and procedure and several new tools for risk assessment, evaluation and competencies. These should be available through the OR nursing staff leadership.

Lasers may also lead to fires in the operating room. Dr. Ryckman stated that special tubes designed specifically for laser surgery should be used rather than Gerry-rigging regular tubes for laser surgery. Oxygen should be discontinued when the laser is used. The endotracheal tube cuff should be filled with water and methylene blue. All pledgets used should be soaked in water.

Once a fire has started Dr. Ryckman reminded the audience of the acronym **RACER**

R – Rescue

A – Alarm

C – Contain

E – Extinguish, Evacuate Know where the safe area is the hospital- can't wait for fire department. Surprise leads to hesitation with loss of time etc.

R – Report there are five or six organizations to which to report fires: ECRI, FDA, Hospital, State, TCJ including a root cause analysis.

Alcohol based prep solutions decrease wound infections, but increase the risk of fire. Duraprep™ is 74% alcohol and should be allowed to dry for three minutes before proceeding with surgery. The disposable Hot Temp cauteries should either be taken apart or re-capped when disposing of them.

Fifteen seconds of every OR time out should be dedicated to the risk of an OR fire occurring.

A Venturi adapter especially designed by Marc Feldman at the Cleveland Clinic has been utilized to lower the FiO₂ under the surgical drapes. His Cleveland Clinic colleagues talk extremely highly of its utility.



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Fire Safety in the Operating Room (continued)

Andrew Schachat, MD Vice Chair of the Cole Eye Institute, related a truly amazing and memorable story (everyone I have talked to in the past year recalls his talk vividly) of how the Cleveland Clinic was able to OVERNIGHT change their policies and procedures regarding fire safety and document that all 1000 or so OR staff had received training in the new policies and procedures by 9 AM the next day.

His presentation emphasized the opportunities for improvement that were identified by surveyors and explained how the organization responded.

State Departments of Health represents the Centers for Medicare and Medicaid Services (CMS) and also investigate complaints from patients. A [non-ophthalmology] patient had complained to the State Department of Health that they had a surgical complication that they had not been warned about and "Had I have been warned ... I never would have had the surgery."

The State came to investigate whether there was a compliant informed consent process in place for that procedure and determined that there was not. They informed CMS which in turn ordered a full survey to assure that all conditions of Medicare par-

ticipation were met at the Cleveland Clinic. During this inspection, other shortcomings were determined regarding fire safety as well as other issues with life safety and building codes. Since the life safety issues related to a risk of a potentially avoidable the surveyor had checked off the "potential immediate threat to life."

Key Points for a Successful Fire Safety program:

- Catch on to the concerns of the surveyors
- Have a structure in place to respond within hours
- Leadership was available and met with surveyors
- Policies/procedures were revised
- Negotiated a correction plan
- Being able to make decisions immediately
- Communicating the plans to all relevant employees within hours
- Can you locate your telephone lists?
- Be able to document that staff have been trained in the new policies and procedures