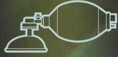
DEDICATION



Anesthesia Safety ... Swiss Cheese Style

GARY H. CHAN, DDS

Revolutions do not start at the striking of a clock or the drop of a hat. Variables contribute over time in varying degrees of importance, are set in motion, and combine in a unique way that history is changed or made. Circumstances are such that the exact conditions for change give birth to new ideas, and over a period of time we have change. This might be a positive atmosphere to cultivate a revolution but not a predictable, good recipe for anesthesia patients' safety.

Sitting in a review of closed claim insurance cases, I was impressed we were reviewing cases that were similar to cases I saw in my office every day. The common factor in these cases was usually a small compromise(s) by the clinician that eventually contributed to a negative outcome.

It has been said that administering anesthesia is 99.9 percent boredom and 0.1 percent pure panic. So as anesthesia providers, we are constantly looking for that case that will cause that panic. Unfortunately, the sun still shines, the birds still sing, and flowers still bloom on the day that a catastrophic emergency anesthesia event unfolds. So how do we with predictability recognize these "accidents waiting to happen"?

Consider also what we were told in regard to AIDS/HIV in the 1980s. Treat **every** patient as if they had AIDS/HIV, and therefore we would have nothing to worry about. After all, we really don't know who is actually HIV positive. I ask you to consider driving a car on the highway. You look in the rearview mirror and you see a California Highway Patrol vehicle behind you. Heart rate and BP increase, and instantly you are on your best highway behavior. However, as the miles go by... 10, then 20, then 100 ... our guard slackens over time. My point is that we relate to mile 1 differently than we do mile 100. Familiarity can breed complacency. Even the members of the Secret Service assigned to such careful matters as guarding the president are rotated. Why? Because eternal vigilance over extended time is contrary to human nature.

Human nature tends to presume on the future. What has happened before will happen again. What has not happened will not happen. Since I have never had a serious emergency or death

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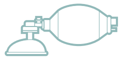

CHOOSE YOUR LOCAL ANESTHETIC WITH CAREFUL REGARD FOR THE PATIENT'S HEALTH HISTORY, ASPIRATE FREQUENTLY, AND INJECT SLOWLY.

in my office, I probably won't. "I am more careful than those other guys" (Superman syndrome) or "It won't happen to me." Just as no happy couple gets married with the idea of having a bitter divorce, no practitioner starts an anesthetic presuming or knowing there will be a negative outcome or death.

However, familiarity or routine need not give way to complacency. Take for example, pilots. Familiarity is a routine that is unwavering. Once in the cockpit, the pilot goes down his preflight check, even if he just landed 20 minutes before and "nothing has changed." This unwavering rigid routine stays unchanged flight after flight. We should treat certain areas of our office as a "cockpit" or "top security area." In other words, certain times (e.g., immediate preop), places (e.g., operating room or surgery suite), and procedures (e.g., have patient verbally confirm proposed procedure) should parallel the safety model of pilots. For example, rather than saying we must be safe all the time (though we must), perhaps we can accomplish this with a method more compatible with our nature by having certain "high alert" areas and/or times in the office. In our office, the cockpit is the surgery suite. High alert is the condition beginning with our preoperative checklist where at least two other staff members have asked integral questions of the patient. (e.g., NPO status, allergies, meds, confirming tooth/surgery, etc.).

Dr. David L. Anderson

Airline and fighter pilots practice in-flight simulators to regularly review flight emergencies, takeoffs and landings. They review bad outcomes and "near misses." In a similar manner, we have now implemented simulated medical office emergencies in our office. We review treatment of intra-op/in-office medical emergencies with our staff at least once a quarter.

Finally, always remember the Swiss cheese safety model, thus named because of the holes in the cheese. The medical safety model is a multilayered approach that attempts to protect the patient, realizing that no one layer is foolproof, or we would never have any negative outcomes. When the "holes" in the Swiss cheese slices "line up" across the various layers of safety, the bullet goes all the way through the holes in the layers and the patient is hit. We spend our time trying to make the holes as small as possible and/or trying to add more layers of safety. Statistically, most office anesthesia medical emergencies are avoidable. Choose your local anesthetic with careful regard for the patient's health history, aspirate frequently, and inject slowly. Once you develop an anesthesia algorithm in your office, stick to the plan, and do not compromise your routine. Cancel cases that need medical consultation or patients with temporary compromised respiratory conditions (i.e., "Live to fight another day"). Have a written medical emergency protocol. Simulate emergencies with your staff regularly (quarterly). Review your charting protocol during an emergency. Learn from "near misses" by reviewing them. Stay eternally vigilant by having specific times of "high alert" and stepping back down to "routine alert." This helps to preserve the need for routine attentiveness and hopefully avoid the pull toward complacency. Clinicians who are prepared tend to be more "lucky."

This article is dedicated to Dr. David L. Anderson, who advocated and taught dental anesthesia and "Medical Emergencies in the Dental Office" at Loma Linda University, School of Dentistry. Always a gentleman and scholar, Dr. Anderson passed away June 26, 2006, after a courageous fight with cancer. He was an outstanding teacher, colleague, and friend. ■■■■