White Paper

American Association of Oral and Maxillofacial Surgeons

Office-Based Anesthesia Provided by the Oral and Maxillofacial Surgeon

Training and the Anesthesia Team Model

Office-based anesthesia has been part of the training, practice, and history of oral and maxillofacial surgery for over 90 years. Pain, fear, and anxiety in dentistry are significant factors that need to be alleviated to carry out comfortable procedures for patients. Oral and maxillofacial surgeons (OMS) are trained extensively in outpatient anesthetic techniques. Training to become an OMS involves a 4-6 year residency after dental school that includes 5 months of dedicated anesthesia training serving as an anesthesia resident treating both adult and pediatric patients. In addition, after that dedicated anesthesia time, residents continue to receive training in their clinics in all aspects of outpatient anesthesia care.

The model of anesthetic delivery is the ***anesthesia team model*** in which the OMS, along with trained assistants, carry out administration of the anesthetic, perform airway monitoring, and the surgical procedure. This model is unique and different from a medical anesthesiologist in which a dedicated anesthesia provider is responsible for the anesthetic management of the patient.

Patient Safety

How can patient safety be assured in the anesthesia team model? Patient safety is based on the extensive training that an OMS receives and additional principles of patient selection, anesthesia technique, patient monitoring and anesthetic depth limit setting. Patient selection refers to the fact that not all patients are appropriate candidates for office-based anesthetic. Patients are evaluated for appropriate medical history, exercise tolerance, and an airway evaluation. Those who do not meet criteria may need to be managed in a hospital setting or outpatient surgical center. Modern anesthetic medications are available that make outpatient anesthesia safe and predictable with smooth induction and short duration of action. Patient monitoring such as pulse oximetry and end-tidal carbon dioxide monitoring allows for better monitoring of ventilation and anesthetic depth. Anesthesia is a continuum and the patient must be able to be rescued from a deeper level of sedation than intended.

Patient Safety Culture

Oral and maxillofacial surgery offices desire to create a culture of patient safety. All team members involved in the care of patients seek to reduce risk in all aspects of patient care. The team members are trained and current in the management of the anesthetic patient through programs like the DAANCE (Dental Anesthesia Assistants National Certification Exam) or similar programs. Emergency preparedness is essential to be able to handle office emergencies and regular emergency drills are outlined in the "Office Anesthesia Evaluation Manual (OAEM)" of the AAOMS. In addition to these drills, understanding of active and latent errors in healthcare and active programs to address error and a "just culture" for staff improve safety. Other techniques to reduce error include surgical "time out," use of cognitive aids in emergency care, and the principles of *crew resource management*. Crew resource management is a set of training procedures that allow for effective management of emergencies by using proper leadership, communication, and teamwork to resolve crisis situations.

Simulation Training

In 2014, the AAOMS embarked on an ambitious program to develop and distribute a nationwide anesthesia simulation training program. It is the first national organization to develop a simulation program of this nature. The simulation program is being developed in three phases; the first is a basic emergency airway management course, the second is an office-based crisis management course, and the third will be a sedation course. Unlike other programs that demonstrate techniques, this program will have objective grading that will measure competency for various tasks.

The first module is scheduled for completion and release in the spring of 2017.

History

Since December 1844, when Dr. Horace Wells, a dentist, first demonstrated that volatile gases could be inhaled and used for medical and dental anesthesia, oral and maxillofacial surgeons have been the recognized leaders among the nation's dental and medical professionals for the delivery of safe and effective outpatient anesthesia. In addition, the American Association of Oral and Maxillofacial Surgeons, continues to be consulted by other medical and dental specialties, accrediting agencies, and regulatory bodies regarding standards and anesthetic safety.

The history of oral and maxillofacial surgery office-based anesthesia parallels the emergence of the medical hospital model when, in the 1930's, Dr. John Lundy, who first developed and used the IV pentothal technique at the Mayo clinic, taught the new IV procedure to Mayo's Chief of Oral Surgery, Dr. Ed Staffney. Dr. Staffney, in turn, ensured that all oral surgery residents at the Mayo Clinic were taught IV pentothal anesthesia as part of their clinical training. The Mayo Clinic's senior oral surgery resident at that time was Adrian Hubble, who went on to teach this technique to oral surgeons across United States.

Clearly, dental office-based anethesia is not new; in fact, it actually predates the development of certified registered nurse anesthetists. Dentistry, specifically oral and maxillofacial surgery, has remained in the forefront of the field of anesthesia. Fearful patients, who are often in pain, are effectively, economically, and safely managed in the oral and maxillofacial surgery office with the use of deep sedation/general anesthesia that frequently incorporate agents such as propofol and/or ketamine. Prospective and retrospective morbidity and mortality studies of deep sedation/general anesthesia in the oral and maxillofacial surgery office reveal an enviable safety record that compares favorably with hospital based care.

In April 1985, the National Institute of Dental Research (NIDR) of the National Institutes of Health (NIH), the Food and Drug Administration (FDA), and the NIH Office of Medical Applications of Research (OMAR) sponsored a National Institues of Health Consensus Development Conference on "Anesthesia and Sedation in the Dental Office." Its consensus statement included:

> Pain is a major factor that brings patients to the dental office, while fear and anxiety about pain are common reasons patients fail to seek dental care. The magnitude of the public-health problem is indicated by the fact that 35 million Americans avoid dental treatment until forced into the office with a toothache. The control of pain and anxiety is therefore an essential part of dental practice. . .
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> The use of sedative and anesthetic techniques in the dental office represents a unique situation when compared with their use in the hospital environment. These differences often are not clearly understood, and as a result, the use of sedation and anesthesia in the dental office has sometimes been unduly criticized . . .
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> After listening to a series of presentations by experts in the relevant basic and clinical science areas, a consensus panel composed of individuals knowledgeable in medical and dental anesthesiology, oral and maxillofacial surgery, pediatric dentisty, pharmacology, behavioral science, biostatistics, epidemiology, general dental practice, dental educaiton, and public interest considered all the materal presented and agreed[on the following conclusion]: The use of all effective drugs carry some risk, however small. Available evidence suggest that ***the use of sedative anesthetic drugs in the dental office by appropriately trained professionals has a remarkable record of safety*** [Emphasis added].

The consensus statement concluded the following regarding personnel:

> For conscious sedation, the practitioner responsible for treatment of the patient and/or the administration of drugs must be appropriately trained in the use of such techniques. The minimum number of people involved should be two, i.e., the dentist and an assistant trained to monitor appropriate physiologic parameters. For deep sedation or general anesthesia at least three individuals, each appropriately trained, are required. One is the operating dentist, who directs the deep sedation or general anesthesia. The second is a person whose

> responsibilities are observation and monitoring of the patient . . . The third person assists the operating dentist.

The American Dental Association (ADA) Policy Statement on "The Use of Conscious Sedation, Deep Sedation and General Anesthesia in Dentistry;" the 2012 American Association of Oral and Maxillofacial Surgeons [AAOMS] "Parameters of Care for Anesthesia and Outpatient Facilities;" "The Accreditation Standards for Advanced Specialty Education Programs in Oral and Maxillofacial Surgery;" and the AAOMS's "Office Anesthesia Evaluation Manual" are consistent with the conclusions of the NIH Consensus Development Conference. Further, AAOMS "Parameters of Care for Anesthesia and Outpatient Facilities" are reviewed and concurred with by the American Society of Anesthesiologists.

The President of the American Society of Anesthesiologists has written,

> Since members of the AAOMS [American Association of Oral and Maxillofacial Surgeons] have a long history of safely using general anesthesia in the care of their patients, it is the feeling of the American Society of Anesthesiologists that the joint ASA/AANA statement [regarding restrictions on the use of propofol by physicians with no training in the performance of general anesthesia] is not intended for these AAOMS members.

In order to maintain AAOMS membership, oral and maxillofacial surgeons must complete AAOMS's mandatory Office Anesthesia Evaluation (OAE) program every five years, and maintain malpractice insurance coverage. AAOMS members are eligible for malpractice insurance coverage throughthe OMS National Insurance Company (OMSNIC).

The Bylaws of the American Association of Oral and Maxillofacial Surgeons state:

> AAOMS fellow/members must have their offices successfully evaluated and re-evaluated by their component society every five years or in accordance with the state law, provided that the state law does not exceed six (6) years between evaluations and otherwise meets AAOMS office anesthesia guildelines. State or component societies will notifiy AAOMS immediately of any state/component society fellow/member who does not fulfill this requirement.

The AAOMS Office Anesthesia Evaluation program is not mandated or suggested by any government or outside agency. It was conceived, developed, implemented, and mandated by the AAOMS through its component state societies to benefit the public, whom its members serve. The AAOMS Office Anesthesia Evaluation program consist of four parts:

Part I. An evaluation of the office facilities, emergency medications, and emergency equipment available;

Part II. A demonstration by the oral and maxillofacial surgeon and his/her team of the management of simulated office emergencies;

Part III. A discussion between the evaluators and the oral and maxillofacial surgeon that involves a critique of the emergency demonstrations and/or facility; and

Part IV. An observation of the anesthesia/surgeries performed in the office (subject to state laws and patient consent)

The AAOMS Office Anesthesia Evaluation process encompasses training and evaluation of office facilities; equipment and personnel; monitoring; complications and emergencies, including laryngospasm, syncope, venipuncture, bronchospasm, emesis and aspiration of foreign material, airway obstruction by foreign body, angina pectoris, myocardial infraction, and cardiac arrest; cardiopulmonary resuscitation (CPR); management of blood pressure problems; drug allergies; hyperventilation; convulsions; malignant hyperthermia; and anesthesia for patients suspected of substance abuse.

As the surgical specialists of the dental profession, oral and maxillofacial surgeons are trained in all aspects of anesthesia adminstration. OMS residents complete a rotation on the medical anesthesiology service, during which they train alongside anesthesiology residents under the supervision of an anesthesiologist. Those who complete an oral and maxillofacial surgery residency training program are competent to administer safe and efficient anesthesia in the outpatient setting. With their training in both patient

evaluation and emergency management, they are prepared to address any situation they may encounter. The ASA, the educational, research, and scientific association of physician anesthesiologists, supports the ability of oral and maxillofacial surgeons to saftely and compentently administer anesthesia in the office-based surgical setting. Quick onset and smooth induction, short duration and recovery time, and few side effects make propofol a necessary agent in providing oral and maxillofacial surgery patients a safe, predictable and comforatable anesthetic experience.

Medical and dental health insurance costs continue to rise and many patients do not have dental health insurance benefits. As a result, when dental problems arise, the emergency room is the place where many of these patients seek treatment. The cost for this treatment can be significant, especially if the patient must be admitted and treated in the hospital operating room or intensive care. Often these visits could be avoided by early intervention in the safe and economically resonable environment of an oral and maxillofacial surgeon's office utilizing the anesthesia techniques employed on a daily basis.

The oral and maxillofacial anesthesia team model is not only safe, but also offers significant cost savings compared to other forms of out-patient anesthesia. Office-based anesthesia services eliminate out-patient facility fees and fees generated by other medical professionals such as anesthesiologist or CRNAs. The anesthesia model used by oral and maxillofacial surgeons provide safe and cost-effective treatment that allows access to care for fearful patients and permits trained professionals to deliver surgical services that require deeper levels of anesthesia in the office. We must strive to never relinquish our leadership role in providing safe and effective anesthetic care that is essential to the health and well-being of our patients.

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