
Anecdotes from the History of Anesthesia in Dentistry

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Anecdotes offer quick insights into the nature of a problem or the uniqueness of the personalities involved. Dental anesthesiology has more than its fair share of specially gifted or even demonic individuals who were responsible for tilling the field to bring forth a rich crop of experiences and memorable stories.

DR. DRUMMOND-JACKSON

Dr. Drummond-Jackson in London, England, was an unusually enthusiastic dentist who first championed the use of intermittent intravenous methohexital (methohexital) for conservative dentistry in the 1950s and 60s. The subsequent introduction of intravenous diazepam (Valium) led to the need to identify appropriate levels of sedation. Drummond-Jackson invited a young anesthesiologist, Dr. Verrill, who was doing research with diazepam to report on his findings. Dr. Verrill discussed his observations, noting that with increasing amounts of the drug, deep sedation or even general anesthesia could be induced. Deeper levels were accompanied by drooping of the eyelids or ptosis. As this finding was discussed, the irrepressible Drummond-Jackson sprang to his feet and shouted "Marvelous, now we have a physical sign to use, and henceforth it will be called the 'Verrill sign'." The term stuck. It should be noted that it was never identified as a sign of light sedation but rather a sign of deepening central nervous system (CNS) depression.

To Drummond-Jackson must go the credit for continuous learning and the establishment and evolution of the British Society for the Advancement of Anaesthesia in Dentistry (SAAD). He published the Society's first volume, entitled *Intravenous Anesthesia—SAAD* in 1960. He had an untimely death in 1975, subsequent to a heart attack while swimming in Bermuda. His loss was a tragic one for the profession.

DRS. HUBBELL AND KROGH

Drs. Adrian Hubbell and Harold Krogh were fascinated by sodium thiopental (Pentothal). Compared to their experiences with techniques using hypoxic nitrous oxide, trichloroethylene (Trilene), vinyl ether (Vinethene), or ethyl chloride, the introduction of a new rapid-acting intravenous agent with reportedly low morbidity and mortality was a minor miracle. They offered to share their experience by teaching "Pentothal" techniques to oral surgeons all over the United States in the early 1950s. Their road show provided a major impetus to the introduction of intravenous anesthesia in oral surgical offices.

Dr. Hubbell was very creative. Early on he recognized the variable response of patients to intravenous barbiturates and abandoned the concept of estimating the proper dosage on a mg/kg basis, moving instead to a titration technique. However, since his hands were too busy performing oral surgery, he devised a foot-controlled rubber pump, which became known as the "Hubbell Bubble." His practice in Long Beach, California was large, and he employed a succession of younger associate oral surgeons who learned from him and became outstanding clinicians later in their own offices. In fact, Dr. Hubbell's clinic served as a Mecca for visiting surgeons. One of his famous guidelines was that one should administer thiopental sparingly, such that if the operating team all collapsed, the patient would be able to awaken in a few minutes and step over the bodies on his way out of the office.

Although, Dr. Hubbell seemed to be cavalier about his use of thiopental, he was in truth an astute clinician. Over 300,000 anesthetics were administered in his office without a fatality, whereas three of his patients whom he had referred to hospitals had succumbed under anesthesia. His many contributions to dental anesthesiology and practice management are legendary.

DR. THOMAS QUINN

A visit by Dr. Tom Quinn from Quincy, Massachusetts led to the following anecdote: While observing Dr. Hubbell in action, Quinn reached out to check the patient's radial

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pulse. (Recall that no mechanized pulse rate or oximeter was available in the 1950s.) He expressed his concern by reporting a tachycardia of 130 beats/min in this otherwise healthy patient. Dr. Hubbell was unimpressed. He looked up briefly from the surgical field and said "No s_t."

Dr. Quinn developed a successful practice by offering intravenous thiopental anesthesia for oral surgical care at reasonable fees, but for cash only. He perfected his technique by working with a well-trained team of assistants as they moved from room to room. On one occasion, in the corridor of his clinic was a list of those patients who had received only local anesthesia during that week. The list noted only three names out of approximately 90 patients! Quinn was an enthusiastic leader among oral surgeons and dental anesthetists. He shared his knowledge and skill with a willingness that exemplified his good spirit and sense of humor. He also is an excellent raconteur.

DR. MAX JACOBS

Early in my career in Boston I was introduced to a dapper, older oral surgeon who sported a distinctive mustache that jutted out on both sides to end in waxed points. A successful practitioner with a large practice in Brookline, Massachusetts, Dr. Max Jacobs moved with quick, darting actions when performing surgery. This earned him the sobriquet of "Maxie the Taxi." He also was the attending oral surgeon at the Forsyth Dental Infirmary for Children.

Jacobs was personally responsible for the administration of 30,000 ethyl chloride general anesthetics for extraction of teeth and without a single mishap! We now know that ethyl chloride used in that manner leads to a high incidence of cardiac dysrhythmias. But "Maxie the Taxi" was either too fast, or too lucky, to spoil his record.

DR. NIELS JORGENSEN

Dr. Niels Jorgensen was a pioneer in the field of sedation in dentistry. His first job after completing dental school was in a lumber camp among the giant redwoods of Northern California. His patients were big, strong woodsmen who paradoxically would faint at the sight of a local anesthetic needle. He also noticed that those who did not pass out self-premedicated with alcohol. When he returned to private practice in Los Angeles, he sought the advice of a friendly anesthesiologist, a Dr. Leffingwell, who recommended an elixir of pentobarbital. Jorgensen had also joined the faculty at Loma Linda University School of Dentistry. He then introduced the use of pentobarbital for apprehensive patients, who in that institution were mainly Seventh Day Adventists. As that religion

discourages the use of alcohol, many patients demonstrated increased susceptibility to the drug, which contained 30% alcohol. As a result, Jorgensen sought an alternative. His friend, Leffingwell suggested intravenous pentobarbital with the synthetic opioid meperidine (Demerol) as well as scopolamine, which has both psychotropic and drying properties. Jorgensen applied these agents cautiously in sequence, titrating the pentobarbital until "light-headedness" was achieved. He then switched to a second syringe containing a mixture of meperidine and scopolamine and gave a small amount as determined by the effects of the pentobarbital titration. However, he never exceeded 25 mg of meperidine. Subsequently, his records showed a remarkable demonstration of the normal distribution curve, with some patients responding to 20 mg of pentobarbital while others required 200 mg to achieve a baseline sedation. Jorgensen taught this technique to generations of Loma Linda dentists, who safely provided pain and anxiety control to their patients. He also was a master of local anesthesia techniques, publishing several books, syllabi, and motion picture films. One of his idiosyncracies was that he avoided the use of an indwelling needle attached to a saline or dextrose solution. He worried that the patient would be upset by this "hospital atmosphere." Today the acute administration of an intravenous sedative and immediate removal of the needle is both ill-advised and no longer the standard of care.

However, to Jorgensen must go the credit for popularizing safe and sensible conscious intravenous sedation in the dental office for both surgical and general dental procedures.

DR. SYLVAN SHANE

Dr. Sylvan Shane of Baltimore, Maryland is a remarkable character in many ways. He was trained as an anesthesiologist and was one of a small handful of dentists to be recognized by the American Society of Anesthesiologists as a full member. He developed the "Shane technique" which is a multidrug sedation technique supplementing local anesthesia, along with the unabashed "therapeutic lie." Hydroxyzine (Vistaril), alphaprodine (Nisentil), methohexital (Brevital), and scopolamine were given intravenously in succession, after telling the patient to expect "pressure" or "vibration" which would indicate that the procedure was completed and that he was just polishing fillings or massaging extraction sites to help clotting. This technique enabled him to do full mouth dental treatments in one visit. In his skilled hands, success was high.

Shane wrote and published several interesting books of his world travels and was even elected to the House of

Representatives of the U.S. Congress from his district. This renaissance man also built his own beautiful house.

DRS. FIELD AND ACKERMAN

Communities do appreciate and reward deserving dentists. Drs. Field and Ackerman were partners for over 40 yr in downtown Newark, New Jersey. They practiced oral surgery and were widely known for their use of general anesthesia. Harry Field was a sharp operator. Occasionally, when the thiopental was wearing off too soon, he would supplement the anesthetic with ethyl chloride, much like "Maxie the Taxi" did in Boston. Of course, there were no monitors in regular use to detect aberrant heart beats or blood pressure changes. The anesthesia assistant held the chin, supported the airway, watched the chest rise with each inspiration and the bag deflate at the same time, secured the nasal mask, kept a finger on the carotid pulse, and informed the surgeon periodically of the patient's status. He would respond by prescribing "a few more cc's" as the patient bucked and bellowed while the surgeon sweated and strained. Afterward, the awakening patient would declare "Gee, doc, that was great! I didn't feel a thing!"

Field and Ackerman were honored upon their retirement by the city of Newark. The mayor acknowledged that they had successfully performed 340,000 anesthetics and surgeries without losing a single patient, and as a result they were civic heroes who deserved the accolades of their fellow citizens. What wasn't known was that Field and Ackerman were brothers-in-law who did not get along together. Thus, they worked on alternate weeks and provided a beautiful service to the public, somewhat like Gilbert and Sullivan of comic opera fame.

DR. MORGAN ALLISON

Dr. Morgan Allison of Ohio State University was a giant among men although he stood only 5 ft 6 in tall. His daring and innovative introduction of endotracheal general anesthesia on all ambulatory patients helped to train oral surgeons and provide an unobstructed, secure airway. He is also credited with showing how to use a 15-ga needle introduced through the cricothyroid membrane to bypass a blocked airway in order to sustain life for at least 20 min.

DR. GEORGE GOW-GATES

From a far-off corner of the world "down under" in Paramatta, Australia came a fascinating gentleman by the name of George Gow-Gates. His countrymen scoffed to hear that this general dentist from a little town outside of

Sydney had developed a new local anesthetic injection technique which simultaneously blocked the inferior alveolar, the lingual, and the buccal nerves. Who was this man? Why he never even graduated from a dental school!; he learned his profession by apprenticing to an older, experienced practitioner. He also showed other unique interests and achievements. He was an olympic-class golfer and owned a string of race horses, which added spice to his life.

The Astra Company, urged on by Dr. Joseph Oakley, who served as a consultant, introduced Gow-Gates to America, where his technique is now greatly appreciated. (One is never a prophet in one's own land.) Subsequently, clinical studies proved Gow-Gates' nerve block to be highly efficacious, and it has been introduced into dental curricula as an alternative local anesthetic technique.

Gow-Gates and his wife, Beulah, were wonderful hosts to visitors from overseas. He enjoys the belated professional recognition and joins our list of people who merit special anecdotes. George is always looking for the magical golf club with a built-in hole-in-one. He would purchase clubs long distance, and travel to the U.S. to collect them. For all of us, he typifies the restless spirit who, although not bound up by the rigidity of what was taught or even what was politically correct, showed us a better way.

DR. NORMAN NATHENSON

With all our current sophistication, there is still no fool-proof way to assess recovery from anesthesia, nor is there a convenient and reliable method to assess the depth of sedative and anesthetic drugs used in an outpatient setting. Such was also the case in 1964 when I was serving as editor of *Anesthesia Progress*. Dr. Norman Nathenson of Framingham, Massachusetts, was invited to write an article describing how he knew when to discharge his patient after recovery from anesthesia. Nathenson, who had a very busy practice with three associates, wrote an excellent detailed paper on how he provided anesthesia and surgery but failed to mention how he judged recovery and discharge of the patient from his office. I phoned him and complimented his paper but pressed him to answer my question. He responded rather sheepishly that when they needed the recovery bed for the next patient, the first one went home. His nurse usually made that pragmatic determination.

TRIEGER DOT TEST

The question of recovery to street fitness continued to bother me. When I moved to the University of California at Los Angeles (UCLA), I presented my question to a member of the Psychology Department. A Dr. Miller

came up with several examples from the series of test cards developed by Loretta Bender to help evaluate psychomotor control. These had been routinely used to test U.S. Army recruits during World War II. They were also used to evaluate brain-damaged children. Two of the illustrations seemed appropriate for our needs. Taking a practical lesson from the police's request to "walk a straight line" when apprehending a drunk driver, I changed the image into a series of disconnected dots, 1 cm apart. Patients were asked to "connect the dots" before medication was given. This served as a simple baseline drawing test from which one could develop a score of "dots missed." Subsequent changes would yield other scores and enable objective comparisons and statistical evaluation. Several studies were done to test this system. We could measure predrug baseline, drug effects, and recovery with a minimal influence of learning or practice enhancement. Several papers were published, including a report of a "cocktail party" also using a Police Department Breathalyzer as a control. Of six couples who were randomly assigned either 10% or 100% alcohol in grapefruit juice, three women and one man passed out after the third drink of 100% alcohol on an empty stomach and could not complete the study as planned.

Others have used the "Triege Dot Test" and have been rewarded with a simple inexpensive method of assessing drug effect and recovery.

SUMMARY

I believe that dentists have made important contributions to anesthesiology and patient care. Medical anesthesiology is now being required to provide more same-day or ambulatory care. Where it was once good sport to criticize dentists providing brief anesthesia services for their patients, it has now become appropriate for physician anesthesiologists to use shorter-acting agents, improved physiologic monitoring, reversal agents, and early discharge as part of their care of patients.

Anecdotes are informative and often provide us with nostalgic recognition and a smile. Ask yourself how you would have responded to the needs of your patients if you were practicing 40 or more yrs ago. We owe a major debt of gratitude to our gallant forebearers and an acknowledgement saying "Well done," and "God bless."