

Without Science There Is Little Art in Anesthesiology

2015 Rovenstine Lecture

James C. Eisenach, M.D.

THIS is my last issue as Editor-in-Chief, a job that has filled me with joy. Over the past 10 yr, I have had the privilege to serve alongside talented authors, creative and hardworking Editors, Associate Editors, Managing Editors, staff, publishers, and many outside this team to attract the best science we could and to show its relevance to our readers. The mission of the Journal, forged 8 yr ago, is to advance medical care by promoting seminal discovery, and this mission has guided daily and strategic decisions at the Journal ever since. Therefore, when John Abenstein, M.D., President of the American Society of Anesthesiologists, invited me to present the 2015 Rovenstine Lecture, the theme of science informing medical practice came immediately to mind. But giving our patients the best possible care requires more than the application of pure science. It requires a measure of artistry. By the time the presentation went live, it was more drama than lecture, with novelist and Associate Editor, Carol Cassella, M.D. (Department of Anesthesiology, Virginia Mason Clinic, Seattle, Washington and at Surgery Center of Silverdale, Silverdale, Washington) and myself alternating illustrations of science and art using Rovenstine's life as the centerpiece. It can be viewed through the Education section of the American Society of Anesthesiologists (ASA) Web site (<http://www.asahq.org>). What follows is an attempt to capture in a few hundred words a bit of the drama and meaning of that presentation.



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back. I would take a message farther front, and when I would return, maybe ten minutes later, the fellow would be dead. I couldn't understand how that happened. We've learned a lot about the treatment of shock since then.”¹ This quote reflects both the compassion and lifelong learning that epitomizes the commitment we made when we entered medicine.

Dr. Cassella clearly evokes the compassionate root for art in our specialty as she describes preoperative preparation in her novel *Oxygen*, “And inside the scant space of my preoperative interview I've found an entire cosmos of healing:

The Art of Medicine: A Profession, Not a Craft

We sometimes use the word art to mean the craft of our specialty, such as slick technical ability, effortless multitasking, or intuition. Craft is important, but it is not art. Rather, art comes from the motivation behind why we are physicians, the compassion and humanity for patients suffering from disease that brought us to an operating room rather than to a board room as a businessman or a courtroom as a lawyer.

For Rovenstine, as for some of you, the road to medicine began with a single vivid event or particular experience. When World War I came, Rovenstine left teaching high school and, among other things, was a dispatch courier to the front during the Argonne offensive. Here's how he describes his particular experience. “I think I got my first deep interest in medicine there. I would stop by an ambulance pickup point and maybe talk to some fellow who was lying there hurt, ready to go

Image: Courtesy of the Wood Library-Museum of Anesthesiology.

This article is featured in “This Month in Anesthesiology,” page 1A. Michael J. Avram, Ph.D., served as Handling Editor for this article.

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the quick read of trepidation or naive acquiescence; the flash of entrapment or submission; perceiving the exact phrase or touch that can transform me from stranger to caretaker, from assigned clinician to guardian. I can't prove that rolling into the operating room believing you will be kept safe improves the outcome of surgery, but it's where I find the artistry in my work."² (p 3).

Science Guiding the Art of Medicine

There are many types of caregivers, but we chose medicine, based on science, as the path that would guide our empathy and altruism into action. Science was born over 2,600 yr ago when the philosopher Thales posited that the world had a unified order, which could be explained by natural laws, and a few generations later, Aristotle posited that we could infer those laws by experimentation. Derived from Hippocrates, the modern oath recited at graduation by medical students states, "I will respect the hard-won scientific gains of those physicians in whose steps I walk, and gladly share such knowledge." Emery Rovenstine lived according to that oath. In a career from 1935 until his death in 1960, he helped form the American Board of Anesthesiology, the modern American Society of Anesthesiologists, and a new journal, *ANESTHESIOLOGY*, for which he served as one of the two first Associate Editors. He himself was a physician scientist who published extensively on topics from pain treatment to anesthetic pharmacology and established a unique training program that integrated basic science and clinical medicine.

Anesthesia is a scientific gift to humanity. At the beginning, it was dangerous. I picture Rovenstine as a lonely sea captain guiding his ship nearly by dead reckoning as he maneuvers the patient through the planes of anesthesia toward the safe harbor of intraoperative survival. Since that time, we have succeeded, by application of scientific advances, to render death in the operating room nearly unheard of. Yet, major surgery remains a dangerous time, with 30-day perioperative mortality following only cancer and cardiovascular disease as cause of death in the United States.³ The goal of the modern anesthesiologist has shifted from intraoperative survival to perioperative survival and speeding recovery from disability.

We can only practice the art of medicine effectively in our specialty if we apply science in our daily practice, pledge to lifelong learning in science, and support young investigators in science. Too many of us stop even attempting to keep up with practical scientific advances that we should apply to the care of our patients. It has been my privilege over the past decade, working with many others, to try to harness new technologies and approaches at *ANESTHESIOLOGY* and to make those advances more accessible to our readers. Fewer than 1% of ASA members donate to the Foundation of Anesthesia Education and Research (FAER), a nonprofit dedicated to supporting young anesthesiologist investigators in starting careers that will change our practice. It will be my privilege to lead FAER in the near future and to reach out to you for support.

Conclusion

At the end of Shakespeare's play, *Macbeth*, his wife newly dead and approaching his own death in battle, states that,

"Life's but a walking shadow, a poor player
That struts and frets his hour upon the stage
And then is heard no more. It is a tale
Told by an idiot, full of sound and fury,
Signifying nothing."

We reject the notion that life signifies nothing when we do or read research that shows an idea is false, shows that another might be true, and gives us a glimmer of how we might reduce suffering. We reject that notion when we go into the operating room and touch a patient, guide him or her through surgery, and attempt to reduce the ocean of suffering or death that follows. We have chosen the path of the doctor as meaningful to us when we care for our fellow humans, all of us poor players upon the stage. As Sir William Osler describes physicians, "And, finally, remember what we are – useful supernumeraries in the battle, simply stage accessories in the drama, playing minor, but essential, parts at the exits and entrances, or picking up, here and there, a strutter, who may have tripped upon the stage."⁴

Dr. Cassella sums up what we stand for. "I am an anesthesiologist—a practitioner of the art and science of anesthesia. When the science and art of anesthesiology blend in perfectly balanced proportion, my job becomes oddly intimate—a shared personal secret with a stranger, watching them wake up with an expression in their eyes I recognize as stark disbelief that time has passed and this frightening event is over. They have crossed this barrier and emerged intact, if changed in some indefinable way, opened up and explored, on the other side."² (p 287).

Thank you for the opportunity of sharing with you through *ANESTHESIOLOGY* the science that improves our ability to safely bring our patients across that barrier to the other side.

Acknowledgments

The Rovenstine lecture in 2015 was jointly presented by myself and Dr. Cassella (Department of Anesthesiology, Virginia Mason Clinic, Seattle, Washington, and Surgery Center of Silverdale, Silverdale, Washington). As this was in part a farewell editorial at the end of my tenure, I elected to serve as sole author, but want to acknowledge the creativity, vision, and patience that Dr. Cassella shared with me in development of that presentation and this editorial. Thank you for all you are doing for this journal, for the specialty, and for me, Carol.

Competing Interests

Dr. Eisenach will become the President and CEO for the Foundation for Anesthesia Education and Research, Schaumburg, Illinois, on July 1, 2016, and will receive an honorarium from that organization to serve these roles.

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ANESTHESIOLOGY REFLECTIONS FROM THE WOOD LIBRARY-MUSEUM

A Postal Cover from Dr. R. N. Hudson: A Vocal Tenor and Vocal Nitrous Oxide Specialist



During the American Civil War, a quartet of brothers sang and played musical instruments at Union Army recruiting centers throughout Pennsylvania and New York. By 1868, the tenor in the quartet, Dr. R. N. Hudson, was generating his own laughing gas and advocating that other dentists dispense it for anesthesia as he did, from a gasometer. On July 1, 1875, for professional services rendered in his dental parlors at 125 Genesee Street in Auburn, New York, Dr. Hudson posted an itemized bill seeking \$1.00 from patient Samuel E. Tubbs. The bill was enveloped in a "postal cover" (above), which depicted Dr. Hudson and advertised that his services included "NITROUS OXIDE GAS A SPECIALTY." This postal cover is part of the Wood Library-Museum's Ben Z. Swanson Collection. (Copyright © the American Society of Anesthesiologists, Inc.)

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