Historical perspectives of The American Association for Thoracic Surgery: William Elias Adams, MD (May 1, 1902–November 25, 1973)

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Although nature commences with reason and ends in experience it is necessary for us to do the opposite, that is to commence with experience and from this to proceed to investigate the reason.

—Leonardo Da Vinci

Is there any way of predicting the impact of significant and/or traumatic events on a young life? William Elias Adams, the 39th president of The American Association of Thoracic Surgery AATS (Figure 1), saw his share of trauma early on. He was born May 1, 1902, in Pike Township, Muscatine County, Iowa, to Frank Albert “Bert” Adams and Alice “Allie” Wilhelmina Mills Adams, and preceded in birth by his sister Erma (born in 1899). A younger brother, Earl Franklin, died at the age of 4 when Adams was only 7, and his mother died at the age of 30 when Adams was 10 (Figure 2). His father remarried 7 years later, but the marriage ended tragically with a murder-suicide on April 1, 1920, during Adams’ senior year in high school, leaving him and his sister orphans. The siblings went to live with their uncle and aunt and Adams petitioned the court to appoint Dr Virgil O. Muench, a local physician and friend of the family, as his guardian. This was approved within 2 weeks of the deaths (Desiree Boeck, written communication, July 2015).¹

Despite these tragic events, Adams graduated from West Liberty High School in 1920 and successfully matriculated at the State University of Iowa at Iowa City.¹ He majored in liberal arts and medicine and obtained both his undergraduate degree and MD in June 1926 (notably uncommon at that time). While in medical school, he met Huberta M. Livingstone (Figure 3), who was 2 years behind him. After graduation, he completed his internship in surgery at the University of Iowa under the mentorship of Dr Howard Beye, and then stayed on an additional year as an assistant in the department of anatomy, continued his courtship of

FIGURE 1. William Elias Adams, MD, 39th president of the AATS. (Courtesy of the University of Chicago Photographic Archive, apf1-00071, Special Collections Research Center, University of Chicago Library.)

Livingstone, and married her on June 9, 1928, on her graduation from medical school.¹

The University of Chicago School of Medicine had just opened its own hospital in October 1927 (before that it had been affiliated with Rush Medical College). Dallas B. Phemister was recruited from Rush as the inaugural chairman of surgery for the new department. Phemister envisioned a program strong in clinical practice, teaching, and research, and planned to establish a 6-year surgical residency program. Adams started with the original group of residents as an assistant resident and Douglas Smith Fellow, having already completed an internship. Livingstone had been trained in anesthesia and was promptly hired in this role in the newly established section of anesthesia (within the department of surgery) as the first and sole physician anesthesiologist. Both interacted with Phemister daily, and, as noted by Dragstedt,² “Both Dr Livingstone and Dr Adams came under the spell of this great man and their strong affection for him helped to keep them at the University of Chicago for their entire professional careers.”

Adams had collaborated with Dr Chester van Allen, who, along with Dr Percival Bailey and Dr Edmund Andrews, contributed to Adams developing an interest in thoracic surgery. By 1931, he had been appointed as an instructor of surgery. To further his studies in thoracic surgery, he took a 6-month leave of absence in 1933 to work with Evarts Graham (10th AATS president, 1927-1928³) at Washington University in St Louis. It was during this time that he was

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FIGURE 2. Photograph of extended Adams' family, circa 1913. Adams is in the front row, third from the left (age 11 years), and his father in the second row, far left. (Courtesy of Desiree Boeck.)

the second assistant to Graham during the first 1-stage pneumonectomy in which the patient survived (on April 5, 1933).⁴ This experience would influence Adams' later research interests.

Dallas Phemister recognized the raw talent and ability in Adams, and in 1935 obtained a traveling fellowship for him to spend a year in Europe, dividing his time between Ernst Sauerbruch in Berlin (Charite Hospital) and Wolfgang Denk in Vienna. This provided Adams with a front row seat to the growing field of thoracic surgery.

Adams returned to the United States in 1936 and was appointed assistant professor of surgery at the University of Chicago (Figure 4). Livingstone had stayed behind and refined and perfected her knowledge of anesthesia, so that by the time Adams returned, she had been promoted to the official head of the section, remaining as director until 1952. Incorporating some of the clinical and experimental esophageal work he had seen in Europe, Adams began experimental work in his own laboratory on techniques for the safe resection of the esophagus. Two years later, Adams assisted Dallas Phemister in what was considered to be the first thoracic esophagectomy and gastroesophagotomy for cancer with long-term survival on January 26, 1938.⁵ Interestingly, the procedure was reportedly done without endotracheal intubation by using a tight-fitting face mask, which was Livingstone's method at the time.⁵ Besides his own work in the laboratory, Adams was aware

of the earlier work of Denk in developing the transhiatal esophagectomy, as well as the previous single-stage esophagectomy with jejuno-esophageal anastomosis in the chest first performed by Tohru Ohsawa in Japan in 1929.⁶ Phemister had been referred a patient with carcinoma of the lower esophagus, and Adams encouraged him to try the procedure described by Ohsawa.⁷ The procedure was successful and opened the door for further clinical development of esophageal surgery. This anecdote illustrates the recurring theme of Adams taking his clinical experience and going back to the laboratory to better understand the problems and pitfalls of certain procedures.

Adams' reputation and career continued on an upward trajectory. He was appointed associate professor in 1940. He was the first director of thoracic surgery at the University of Chicago.⁸ On April 24, 1946, Adams performed a right middle and right lower bilobectomy for cancer on the famous author, Thomas Mann, with Livingstone as the anesthetist.⁵ Thomas Mann notably wrote *The Magic Mountain* about the experience in a sanatorium with presumed tuberculosis. The patient reportedly received 1800 mL of blood transfused and was discharged 1 month after the surgery. He survived 9 years and died cancer free.⁵

Adams was promoted to full professor in 1947 and named the James Nelson and Anna Louise Raymond endowed professor in 1954. In 1959, at the age of 57, he became the chairman of the department of surgery. This

FIGURE 3. Huberta Livingstone. (Courtesy of the University of Chicago Photographic Archive, apf1-03935, Special Collections Research Center, University of Chicago Library.)

coincided with his AATS presidency and one can only imagine how busy a year that was for him. On May 11, 1960, at the 40th Annual Meeting of The American Association for Thoracic Surgery at Miami Beach, Florida, Adams delivered his presidential address.⁹ Titled “Pulmonary reserve and its influence on the development of lung surgery,” Adams provided a remarkable history of the rationale and physiological concerns regarding major pulmonary resections, notable in part for his downplaying his own role. As previously alluded to, the impetus for his interest in this area were “...several deaths following pneumonectomy...[autopsy] findings in these cases were those of cardiac failure although no primary cardiac lesion was found.”⁹ Thus, although surgical techniques had been developed for the resection of major portions of the lung, there were major gaps in the understanding of pulmonary function and no way of evaluating pulmonary reserve. The issue of why some patients responded in a deleterious fashion with a sudden increase in pulmonary pressure during resection was a mystery as well. Adams then surveyed the work of Vesalius, von Mikulicz, and Sauerbruch and in a very professorial fashion laid out the clinical and experimental findings that increased the understanding of the physiology and helped propel progress in safe pulmonary resection.⁹ Interestingly, he attributed the delay in progressing to total pneumonectomy to “...the delayed

development of anesthetic methods and techniques,” observing that Vesalius had laid down the foundation of what was needed to perform surgery on the open thorax 4 centuries previous. He ended his discussion with a prediction of the evidential success of lung transplantation and noted “With continued united effort, scientific endeavor, and imagination, what is impossible today may be an accepted procedure in the not-too-distant future.”⁹

In addition to his role as president of the AATS, he served as treasurer of the AATS from 1946 to 1954 and helped establish the Evarts Graham Memorial Traveling Fellowship in 1951. He was described as Chicago’s leading pioneer in early thoracic surgery and as a prolific contributor to the literature and to the AATS meetings.⁵ He was involved in the founding of the American Board of Thoracic Surgery (ABTS), being a member of the 1948 Founders Group that reads like a Who’s Who of AATS presidents: Carl Eggers (1935-1936), Cameron Haight (1956-1957), William Tuttle, Frank Berry (1951-1952), Brian Blades (1957-1958), Thomas Burford (1970-1971), Michael DeBakey (1958-1959), Emile Holman (1953-1954), George Humphreys, and Richard Sweet (1961 [died in office]). He served the ABTS as director from 1948 to 1957, and as chair from 1955 to 1957 (being the fourth chair of the ABTS).^{1,5} He also served on the editorial board of the *Journal of Thoracic Surgery*.

He spent 1965 in Glasgow, Scotland, as a Fulbright visiting professor, leaving an indelible impression on the staff at the Glasgow Royal Infirmary. Considering the Royal Infirmary was the home of Joseph Lister and James Hogart Pringle (of the eponymous Pringle maneuver), this was no small feat. In an unattributed obituary published in *The Lancet*, the author noted that “Bill was always a most intelligent and amusing companion, and a very loyal friend; there was an unbreakable integrity and total honesty in everything he said or did. As the years went by he seemed to take his place appropriately as a member of a triumvirate with his great heroes in surgery, Evarts Graham and Dallas Phemister. In Britain he came to be referred to, in a phrase intended as highly complimentary, as the Tudor Edwards of America.”¹⁰

Adams faced mandatory retirement and conversion to emeritus status in 1967, and rather than being satisfied with retirement, he moved on to serve as the assistant director of the American College of Surgeons until he retired in September 1973. Adams served his community as a member of Fourth Presbyterian Church, Chapter and Commandery, and Medina Shrine Temple.¹ After his retirement, he and his wife moved back to Iowa, but the homecoming was short and brief; he required surgery in November of that year and suffered a cardiorespiratory arrest that proved fatal. He died November 25, 1973, at the age of 70 years. Livingstone passed away in 1980 and was survived by their daughter Diana.

FIGURE 4. William Elias Adams, MD, 39th president of the AATS (reprinted with permission from Elsevier).

Adams was described as “a man of exceptional scientific honesty and devotion to his patients and pupils” and as “a devoted husband and father.”^{5,8} Naef⁵ noted that “[Adams] liked to present ‘the façade of the Iowa farm boy’ and was affectionately referred to as ‘Uncle Willie.’” He had accomplished and surpassed the 3 goals Phemister had set out in establishing the department of surgery at the University of Chicago, “...he was indeed the teacher, the investigator, and the surgeon...a permanent inspiring, supporting colleague and personal friend to all of us.”¹¹

From his humble and tragic beginnings, William Adams rose to great heights. After losing his brother, mother, father, and step-mother by the age of 17, Adams likely had what Malcolm Gladwell terms “acquired courage.” In his detailed summary of research of the surprising percentage of eminent people, English prime ministers, and

American presidents who lost a parent at a young age, Gladwell notes that acquired courage is a self-confidence that “happens to children whose worst fear is realized—and then they discover they are still standing.”¹² Similarly stated by the words of Friedrich Nietzsche (and often paraphrased by surgeons!) “That which does not kill us makes us stronger.” Adams persevered despite his childhood stresses and became Chicago’s pioneer in thoracic surgery and the 39th president of the AATS. His epitaph might well come from the words of 2 of his devoted former residents: “He lived a dedicated life full of professional accomplishments directed at helping others. He added lastingly to our surgical knowledge, perpetuating the highest objectives. We, who must carry on as best we can, are grateful for the privilege of having had him to show us the way.”¹¹

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References

1. Hixon CN. Muscatine County, Iowa Family Stories: William Elias Adams, M.D. Available at: <http://iagenweb.org/muscatine/articles/drweadams.htm>. Accessed August 13, 2013.
2. Dragstedt LR. William E. Adams, 1902-1973. *Proc Inst Med Chic*. 1973;29:435-6.
3. D’Amico TA. Historical perspectives of the American Association for Thoracic Surgery: Evarts A. Graham (1883-1957). *J Thorac Cardiovasc Surg*. 2011;142:735-9.
4. Horn L, Johnson DH, Evarts A. Graham and the first pneumonectomy for lung cancer. *J Clin Oncol*. 2008;26:3268-75.
5. Naef AP. William E. Adams: Thomas Mann and *The Magic Mountain*. *Ann Thorac Surg*. 1998;65:285-7.
6. Ohsawa T. Über die unilaterale freie Thorakotomie mit oder ohne Kombination mit der transdiaphragmalen bzw. der ventro-arco-diaphragmalen Laparotomie für operative Eingriffe in der dorsalen Tiefe der unteren Apertur der Brust des Menschen. *Arch Jpn Chir*. 1930;7:31.
7. Adams WE, Phemister DB. Carcinoma of the lower thoracic esophagus: report of a successful resection and esophagogastric anastomosis. *J Thorac Surg*. 1938;7:62.
8. Mueller CB. The Pneumonectomy (Chapter 7). In: *Evarts A. Graham The Life, Lives, and Times of the Surgical Spirit of St. Louis*. Hamilton, ON, Canada: BC Decker, Inc; 2002:123.
9. Adams WE. Pulmonary reserve and its influence on the development of lung surgery. *J Thorac Cardiovasc Surg*. 1960;40:141-60.
10. William Elias Adams M.D. Iowa. *Lancet*. 1973;2:1341.
11. Rasmussen RA, Moulder PV. In memoriam: William E. Adams (1902-1973). Adherence to sound principles. *J Thorac Cardiovasc Surg*. 1975;69:160-2.
12. Gladwell M. *David and Goliath. Underdogs, Misfits, and the Art of Battling Giants*. New York: Little Brown; 2013:140-53.