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Urology's 20th Century Battle: Securing Its Place in the Clinic and the Curriculum

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Introduction: Urology became an established specialty around the turn of the 20th century. These new genito-urinary specialists left behind their original roles as the "clap-specialist" and began to take greater ownership over urological surgery. However, in doing so, many early urologists were ostracized by general surgeons who endeavored to keep them out of the hospitals and sought the reabsorption of this breakaway field back into general surgery. We examine these conflicts with general surgery and the impact this had on the field during its infancy.

Sources and Methods: We reviewed primary sources from the late 19th century to the middle of the 20th century regarding educational practices in urology, the current status, and progress made towards gaining full acceptance as a specialty.

Results: Urology around the turn of the 20th century had a decidedly diagnostic focus. Many of the first urologists viewed the field as a diagnostic specialty before later taking ownership of genito-urinary surgery. However, in attempting to claim urological surgery for themselves, these urologists came into conflict with general surgeons who resented the continued fragmentation of their field. These conflicts were a source of bitterness as criticism between general surgeons and urologists included personal to professional accounts. Some of these conflicts would occasionally enter the academic literature and leaders of professional societies would take official stances on the disagreements. Due to this, the development of the surgical aspects of urology was delayed in the first two decades of the 20th century with this being rectified in part due to its practitioners' unceasing advocacy for their field and its legitimacy.

Conclusions: Urologists at the time of its formal establishment as a specialty had great pride in their diagnostic capabilities. However, urologists faced resistance in expanding their surgical services. Through continual advocacy, urologists were eventually able to solidify their role as complete surgical and medical genito-urinary specialists.

Key Words: History, urology, general surgery, conflict, scope of practice

Urology became a formalized specialty around the turn of the 20th century during a particularly tumultuous period in medicine. This era saw the establishment of the residency system, the reorganization and standardization of the medical school curriculum, and landmark advances in medical care such as antibiotics and X-ray. Navigating these changes was unique for urology given the broad nature of the disease processes seen by urologists and that many of these diseases may be managed by medications or surgery depending on the entity and presentation. Urologists had many hurdles to overcome including: how to recruit and train new practitioners; how to present the specialty in the limited time they had in the new medical school curricula; and navigating the impacts of medical advancements which reshaped the relationships between various specialties. While many urologists saw the treatment of venereal diseases being taken over by the general practitioner with the advent of antibiotics, the general surgeon saw some of their cases being performed by the urologist. Several of the first presidents of the American Urological Association (AUA) and other prominent urologists came to see their greatest obstacle to growth in the field of urology as the general surgeon who felt threatened as the new field of urology expanded into surgery. A few general surgeons sought nothing less than the destruction and reabsorption of urology back into the fold of general surgery. We sought to examine some of the factors that contributed to these conflicts and how

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this impacted the trajectory of the new field of urology.

SOURCES AND METHODS

We reviewed primary sources from the late 19th century to the middle of the 20th century on educational practices in urology, its current status, and progress made towards gaining full acceptance as a specialty. Literature sources were obtained through online searches using PubMed, the National Library of Medicine, Google Scholar, and the University of Rochester's DiscoverUR search engine. Select resources were accessed via hard copy at the Edward G. Miner Library at the University of Rochester Medical Center.

RESULTS

Early Perspectives on Urology

Ostensibly a surgical subspecialty, surgical prowess was not necessarily the basis of urology's claim to specialization in the beginning of the 20th century. Instead, diagnostic capabilities and interdisciplinary connections were often championed by practitioners. These urologists saw their role as not so much the ones to treat a condition, but rather as consultants with knowledge of the urogenital tract to help other fields of medicine and surgery establish a diagnosis.

Urologic papers in the early 1900s often reflected how the growing field would balance its medical versus surgical scope in the medical school curriculum. Martin Krotoszyner (1861-1918), a prominent west coast urologist, in 1911 stated that, "No student of medicine should be permitted to enter upon his practical career without at least a superficial knowledge of the modern urological diagnostics methods which furnish the key to the correct interpretation of many gynecological, neurological and abdominal lesions". (1) Others, such as Montague Boyd, founder of the AUA southeastern section, stressed in 1930 that medical students should be taught to employ the "urologist as an assistant in giving the special knowledge which is needed." (2) This suggested that training should focus on when other specialties should consult with their urologic colleagues whenever the diagnosis was in doubt. These perspectives placed a relatively greater emphasis on the diagnostic side of urology, with less focus on the surgical aspects. The diagnostic value that urologists could provide was not just for those suffering from genito-urinary disorders, and early practitioners saw their field as occupying a central place in the body and the medical community.

The interdisciplinary connections of urology were reflected in the writings of those such as William Quinby (1878-1953), 1st chief of urology at Brigham and Women's Hospital, who, in 1929, argued: "Because the diseases in which urology is concerned have many borderline aspects between both medicine and surgery, this intimate relation between the specialty and the more general subjects should be emphasized continuously." (3) Charles Higgins (1897-1987), the 43rd AUA president, had a similar viewpoint, writing, in 1939, that the primary focus of undergraduate instruction in urology was to impress upon students its multitude of connections to broader surgery and medicine. (4)

Some portrayals took the broad interdisciplinary connections of urology a step further. Henry Bugbee (1882-1945), the 17th AUA president, in 1941, shared his belief that urologists dealt with "A system more closely associated with the entire organism than any other single unit in the body". (5) A similar viewpoint was shared in a 1956 report from an AUA committee established to study the status of urology in medical schools which included the line: "Many contend that all specialties must be given identical treatment. But urology is a unique field, for it encroaches upon general medicine, general surgery, endocrinology, pediatrics, neuropsychiatry and radiology." (6)

Diagnostic Excellence

These diagnostic portrayals of urology presented by those such as Krotoszyner and Boyd are somewhat surprising as urology was ostensibly a surgical subspecialty. The emphasis of diagnostic advancement and excellence by prominent urologists is likely what led some to view urology as a field of diagnosticians. When justifying the necessity of a separate genito-urinary specialty, many early urologists writing in the first half of the 20th century based their arguments on diagnostics. Their diagnostic proficiency was used as evidence for a distinct set of skills that set them apart from other physicians. Technological advancements such as the cystoscope and X-ray provided a new ability for urologists to directly visualize genito-urinary pathologies. These advancements broadened the field and its potential. Keeping up with this amount of new knowledge and information thus required devotion to this field alone as a specialist. (7-11)

Figure 1. (Left) Hugh Cabot (1872-1945), 8th president of the AUA, whose 1911 justification of urology's right to be a specialty left a strong impact on later writers. (Source: Wikimedia Commons) (Right) Clyde Deming (1885-1969), AUA president from 1946-47, first chief of urology at Yale. (Courtesy, Medical Historical Library at Yale)

Diagnosis was at the very core of the new specialty of urology. In a 1911 AUA presidential address by Hugh Cabot (1872-1945), questioning if urology was entitled to be regarded as a specialty, he argued that:
"The cystoscope, the ureter catheter, the various tests of renal function, are the work of the specialist, and upon these depends almost wholly our well-founded belief that accurate preoperative diagnosis in lesions of the urinary tract is today not exceeded in any other branch of surgery, and perhaps not equalled"(Figure 1).(7)

Cabot's address resonated strongly with other urologists at the time and afterwards as later writers often pointed to it as a defining moment for the specialty. (10-15) However, Cabot did not ignore the surgical aspects of urology. Supposed improved surgical outcomes for urologists compared to general surgeons was part of his argument for greater independence and acceptance, but was not the basis of urology's claim to specialization. (7)

Similar viewpoints to Cabot's were shared by others at the time. Henry Bugbee, writing in 1922, noted of urology that "The detailed study of the urinary tract, made possible by the modern cystoscope, led to accuracy which entitled it to be considered a specialty". (12) This accuracy was highly valued by many early urologists and what many felt set them apart from the other areas of medicine. Clyde Deming (1885-1969), the 40th AUA president, writing in 1946, opined that "Urology is the most exact of all the specialties with regard to the execution of a diagnosis"(Figure 1).(13)

To many of these authors, Max Nitze (1848-1906), the inventor of the modern cystoscope, held a position of the highest esteem, one of the 'fathers of urology' whose invention resulted in the creation of the specialty. (9,11,15,16) Martin Krotoszyner wrote in 1911 that the history of urology could be best divided into pre-cystoscopic and cystoscopic eras.(1) Krotoszyner described how in the pre-cystoscopic era, there were two populations of genito-urinary practitioners. One was the limited number of exceptionally skilled surgeons who could perform genito-urinary surgery. The other was the genito-urinary and skin doctors, less respectfully known as the 'clap-specialist'. (1) The former primarily diagnosed conditions and performed only minor surgery. The modern cystoscope was an 'equalizer' that combined these groups and put urological science within the reach of any who would devote their time to its study. (1)

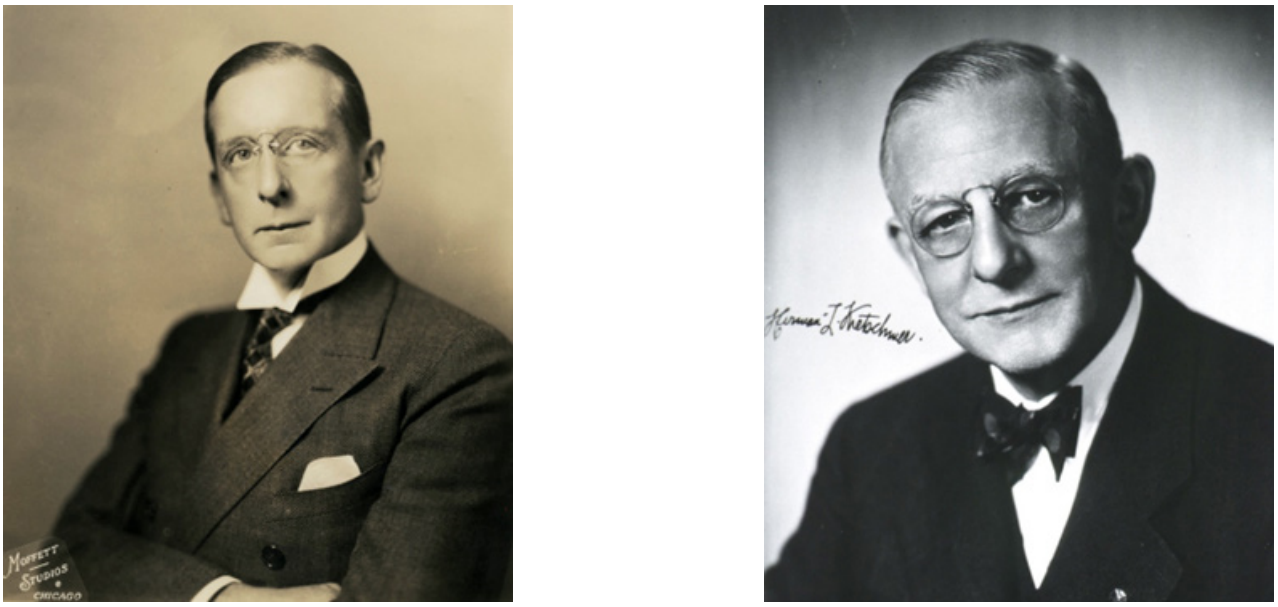

Figure 2. (Left) J. Bentley Squire (1873-1948) was both an ACS (1933) and AUA president (1914). Squier denied an offer from Columbia to chair a urology division under their surgical department which led to the creation of an independent urology department. (Courtesy, Archives of the American College of Surgeons) (Right) Herman Kretschmer (1879-1951) was an AUA and American Medical Association president who was known as one of the earlier physicians to devote his practice entirely to genito-urinary surgery. (Source: NLM Digital Collections)

Diagnosticians to Surgeons

Urology may have been founded on the art of diagnosis but the cystoscope is an example of how a diagnostic instrument allowed urology to expand its surgical role as better instruments meant conditions could be found and treated at the same time. This transition was noted by the 20th AUA president Herman Kretschmer (1879-1951) who said, in 1924, "The development of the diagnostic side was the prime factor in the development of urologic surgery". (Figure 2) (17) The 21st AUA president, C.R. O'Crowley (1880-1959), also agreed with this noting how urologists had advanced from "venereal specialists to diagnosticians, from diagnosticians to surgical collaborators and thence to the established urological surgeons of today." (10) However, this progression did not proceed smoothly. O'Crowley noted how just 25 years prior "the support of our brother practitioners was withheld and our institutional standing insecure and unreliable," and that urology was seen as "a new medical fad originated to digest another portion of the dissected skeleton of General Medicine." (10)

As the surgical depth of urology grew, urologists came into conflict with the other fields of medicine. Henry Bugbee stated that, as urology's scope expanded, "strong opposition was encountered. While it was generally acknowledged that special skill was necessary for diagnosis, the treatment or operative genito-urinary work was thought by internists and surgeons to be their part." (12) Others such as Clyde Deming agreed with Bugbee's sentiment and noted that "surgeons were loathe to accept the advancement of surgery in this special field." (13) This opposition was not taken lightly.

Conflicts with General Surgery

General surgeons were viewed as a major opponent and obstacle to urology expanding its surgical scope. Indicative of this bad blood were statements such as one made by John A. Hawkins of Pittsburgh who said, "I feel that the one great reason for the genito-urinary surgeon being held in derision by the general surgeon is the almighty dollar. I believe that the egotism of the general surgeon is only excelled by the man who knows nothing". (7) This statement came as a response to the address of Hugh Cabot, 8th president of the AUA, who commented on how general surgeons relied upon on the diagnostic skills of urologists of the time. Cabot went further when he stated, "I would deny that these operators are entitled to be regarded as surgeons at all, and must insist that the surgeon is one who can collect his own facts." (7) Henry Bugbee also acknowledged these early conflicts between general surgery and urology. By 1941, he believed that superior surgical outcomes helped settle the conflict, stating "[urology] was not separated from general surgery without a struggle, its accomplishment requiring years of

effort, and the production of results more satisfactory than could be obtained in like cases by the general surgeons." (5) Charles McMartin (1880-1954), the 41st AUA president, suggested that opposition to urology was particularly fierce with his belief that "The general surgeon's field has been encroached upon by various surgical specialists, but none were resented quite so much as the urologist." (18) Statements such as these showed that urology's expanding role in genito-urinary surgery was not well received by general surgeons.

These conflicts lessened by the late 1920s to early 1930s as papers from that time tended to portray these conflicts as having been largely, but not completely, resolved in urology's favor. (10,13,15,16). The 21st AUA president C.R. O'Crowley had noted urology's cold reception upon its establishment but later stated that, "Today we stand accepted by the general surgeon not because he has been harangued into granting us recognition but because in a harmonious and efficient way we have proven to him our ability". (10) However, the desire of some surgeons to reclaim aspects of urology back into the realm of general surgery did appear to persist into the 1950s as noted by Davis M. Davis (1886-1968), the University of Rochester's first urology chair, who, in a 1956 manuscript on the history of urology, wrote of the "consuming ambition of a number of surgeons to absorb urology, along with certain other so-called "surgical specialties," back into the fold of general surgery". (19)

Similar recollections were shared by Harry Herr, a founder of the Society of Urologic Oncology, during a personal interview on the subject of his friend and mentor Willet Whitmore (1917-1995) who was often dubbed the 'father of urologic oncology'. (Herr H to Gudell E, personal communciation, 9/23/2025) Herr noted that when Whitmore first arrived at Memorial Sloan Kettering Cancer Center (MSKCC) in the ealry 1950s, urology was not regarded as a surgical specialty. Urologists were primarily limited to performing endoscopic work and placing catheters with only some minor perineal procedures. The surgical chiefs as MSKCC (all of them general surgeons) had opposed the establishment of a urologic oncology fellowship as, according to Whitmore, such a fellowship could be a threat to the training of the "cancer man" and the general surgeon's field itself. Whitmore was often denied the chance to operate and perform open procedures due to the culture in surgery at this time that denied urologists such opportunities. However, he overcame these limitations through slowly integrating himself with the general surgeons by scrubbing in for their cases and demonstrating his surgical ability. The opposition to Whitmore's expanding surgical role faded and he was able to lay greater claim to the operative treatment of genitourinary cancers.

The General Surgeon's Perspective

While early urologists often wrote about their conflicts with general surgery, urology was not the only specialty that seemingly threatened general surgery. Articles from general surgeons on this did not necessarily single out

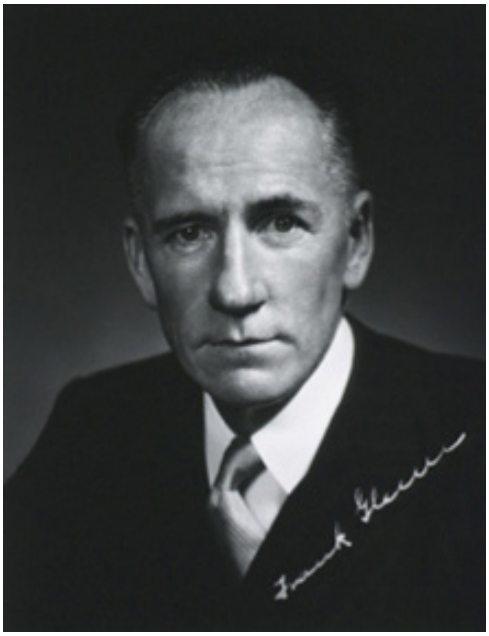

Figure 3. (Left) Daniel Jones Fiske (1868-1937), who in his 1933 ASA presidential address highlighted his concerns about the effects of specialization on general surgery. (Source: NLM PubMed Central) (Right) Frank Glenn (1901-1982), ACS president in 1954, was a renowned surgeon who was once called upon to perform surgery on the Shah of Iran. In a 1949 editorial he also shared his concerns over the effects of specialization on general surgery. (Source: NLM Digital Collections)

Figure 4. (Left) Oswald Swinney Lowsley (1884-1955) was the AUA president from 1941-1942. Lowsley was renowned for performing the first successful dorsal vein plication, although this also made him a tabloid target for headlines due to controversies surrounding his personal life. (30) (Source: Wikimedia Commons) (Right) 75th AUA President William Malik (1914-1984) presenting the 1984 Ramon Guiteras award to Willet F. Whitmore, Jr. (1917-1995), who persevered against resistance from general surgeons skeptical that a distinct specialty of urologic oncology should exist.(Source: AUA WP Didusch Museum, LInthicum)

urology amidst the threats their field faced. Writing in 1934, Daniel Jones Fiske (1868-1937), then president of the American Surgical Association (ASA), shared his belief that "Specialization has robbed the general surgical service to such an extent that it really does not exist." (Figure 3) (20) Of the specialties of gynaecology, urology, orthopaedic surgery, and neurosurgery he said that, "While I have no objection to this at the present time, I am almost convinced that some of these major specialties should be brought back into the general service." (20) Others such as Frank Glenn (1902-1982), an American College of Surgeons (ACS) president, and Arthur Dean Bevan (1861-1943), an ACS founder, writing at this time similarly questioned the wisdom of continued divisions of general surgery and flirted with their reabsorption back into the fold. (Figure 3) (21, 22)

The concerns that some surgeons in the 1920s and 1930s had regarding continued divisions of their field and specialization were not particularly unusual ones. There was a small, but vocal, subset who believed that overemphasis on specialization in medicine, especially within medical school curricula would lead to the "death" of the general practitioner. (17, 22-26) Entertaining the potential reabsorption of branches of medicine back into the larger body of general medicine or surgery was not the norm, but it was also not just a fringe reaction by disgruntled practitioners. Even the illustrious Harvey Cushing (1869-1939), the father of neurosurgery, put forth ideas that considered the reabsorption of his very own field back into general surgery. (24, 26-28) Certainly some of the discontent from general surgery stemmed from general surgeons being accustomed to their prior breadth of scope that had extended to nearly every body system, with perhaps otolaryngology and ophthalmology being the only notable exceptions. (21)

Some general surgeons resented the divisions of their field into various new specialties and assuredly there were attacks on urology's scope and legitimacy as a distinct specialty. However, urology was not seen as a particularly egregious example of specialization. Most general surgeons simply flirted with the idea of its reabsorption into general surgery along with various other surgical subspecialties through addresses and articles.

DISCUSSION

Effects of Conflict

As a result of conflicts with general surgeons, many early urologists felt like they were relegated to outpatient clinics. This was due to insufficient inpatient urology beds for full care of the urologic patient leading to slow development of the urologist's surgical skills. (7, 13, 17) Some urologists felt they were only called upon for their diagnostic skills, but their surgical abilities were ignored. (13) This slowed the transition of early urologists from diagnosticians into full surgeons.

Hugh Cabot's 1911 address touted the supposed improved surgical outcomes in urology but some urologists did not agree. J. Bentley Squire (1873-1948), future AUA and ACS president, stated that the "sneer" urologists receive from general surgeons is because general surgeons understood that current urologists did not have sufficient training for major surgery. (Figure 1) (7) Contemporaries of Squire, such as Martin Krotoszyner, had a similar view of the current status of the typical urologists' surgical capabilities. Writing in 1906, Krotoszyner acknowledged the higher standard of surgical skills in general surgeons but also asserted that "he who diagnoses better will be able to effect a better cure". (8) This was a fitting argument for a diagnostician attempting to advance his scope into surgical treatments of the maladies being diagnosed. Some later writers also had similar recollections. Oswald Swinney Lowsley (1884-1955), AUA president in 1941, recalled how in the early days of urology, "the surgical ability of some (urologists) was, to say the least, sketchy" (Figure 4).(9) In 1924, Herman Kretschmer noted how earlier critiques of urologist's technical skills had been partially addressed, but he still felt that "the opportunities for the development of the surgical side of our work are not what they should be". (17) Kretschmer believed that continuously pushing for independent urological services and an unremitting attention detail in all aspects of care had advanced the skills of urologists and their standing.

Such conflicts had slowed the development of surgery in urology but they also led to a later overcorrection of these trends. It was noted by AUA president Charles McMartin, in 1947, that urologists had made their "clinical courses to the undergraduate too much of a show place for highly technical diagnostic and operative procedures", something he attributed directly to conflicts with general surgeons. (18) Edward Cook, a prior chair of the American Medical Association (AMA) Urology Section, came to believe that new urologists were too 'knife happy' and that "In respect to training for specialty recognition, qualification for membership in societies, and presentations at meetings, the surgical aspects of urology have seemed to be stressed preponderantly." (29). This reflected how urologists had largely solidified their claim over urological surgery, if only perhaps a little too much.

CONCLUSION

Early practice and perspectives of urology around the turn of the 20th century had a decidedly diagnostic focus. Many of the first true urologists saw themselves, and the field, as originating as a diagnostic specialty before later taking ownership of genito-urinary surgery. However, in attempting to claim urological surgery for themselves, these urologists came into conflict with general surgeons who resented the continued fragmentation of their field. With our benefit of hindsight, it must be said that these fears of general surgeons over the division of surgery into smaller and smaller fields were not unwarranted. The many surgical subspecialties that exist today are the most convincing evidence that their concerns were valid. However, as surgical care grows more complex, we continue to see further specialization of general surgeons with many surgeons seeking fellowships following residency. Furthermore, integrated cardiothoracic, plastic, and vascular surgery programs are becoming more commonplace.

The conflicts between urology and general surgery at the turn of the 20th century were not taken lightly by urologists and were a source of bitterness. These conflicts may have delayed the development of the surgical aspects of urology in the first two decades of the 20th century. However, today, urology is now an independent surgical subspecialty in part due to its practitioners' unceasing advocacy for their field and its legitimacy.

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STATEMENT ON USE OF GENERATIVE ARTIFICIAL INTELLIGENCE

The authors affirm that no generative artificial intelligence (AI) tools (e.g., large-language models) were used in the writing, analysis, or figure preparation for this manuscript.