On the Shoulders of Giants

Through the Lens of the Laparoscope

Dr. Harry Reich: Empathy, Optics and Courage

Morris Wortman, MD, FACOG[1]
Clinical Associate Professor of Ob/Gyn

Rebecca P. Wortman[2]
Business Manager

Julie A Madejski, MD, FACOG[3]
Clinical Instructor HS

[1]University of Rochester, Rochester, NY
[2]Center for Menstrual Disorders and Reproductive Choice, Rochester, NY
[3]Jacobs School of Medicine, Department of Ob/Gyn, State University of New York at Buffalo, Lockport, NY

ABSTRACT

Harry Reich, MD, FACOG, FRCOG, FACS is known worldwide as a pioneer in the field of laparoscopic surgery. He performed the first laparoscopic hysterectomy, the first pelvic lymphadenectomy for cancer, and the first excision of cul-de-sac endometriosis that included rectal resection. This article explores his life and contributions.

The author knew Dr. Reich from medical conferences over many years and visited Dr. Reich in Pennsylvania to observe him in the operating room. For this article, the author spoke with Dr. Reich on nearly a nightly basis over a 13-month period in 2022 and 2023. Dr. Reich's descriptions were cross-referenced with his publications and those of his peers. The author also interviewed physicians who worked closely with Dr. Reich and reviewed the trial transcript of the February 1980 Nesbitt Memorial Hospital special ad hoc investigatory committee. The result is a comprehensive review spanning from Dr. Reich's early life to his ultimate recognition as one of the most significant innovators of advanced laparoscopic surgery.

The author concluded that Dr. Reich's accomplishments are rooted in his command of pelvic anatomy, his lifelong interest in surgery and his willingness to challenge existing surgical dogma. By attending medical school in Ireland, Dr. Reich benefitted from the deep study of anatomy offered there. He also had a unique background of being a Harvard-trained gynecologic surgeon practicing in Wilkes-Barre, a small Pennsylvania community that trusted him because both his parents practiced medicine there before him. Dr. Reich favored conservative surgery rather than hysterectomy for endometriosis and patiently excised deep disease, offering relief to countless women, at times without compensation. He exhibited astonishing bravery and perseverance in the face of scathing criticism. Dr. Harry Reich's empathy for his patients and willingness to challenge the status quo were pivotal in improving the lives of many thousands of women and revolutionizing gynecologic surgery.

"How many things are looked upon as quite impossible until they have been actually effected?"

--Pliny the Elder (23 CE – 79CE)

THE IMPORTANCE OF HISTORY

It is hardly possible to overstate the importance of studying and understanding history. By examining our past, we can begin to appreciate that meaningful ideas are built on the wisdom of those who preceded us and who have often encountered significant obstacles and withering criticism. How many of us realize that on Christmas Day in 1809—nearly 4 decades before the first application of ether anesthesia, and over half a century before Joseph Lister's description of antisepsis—Dr. Ephraim McDowell performed the first laparotomy, in which he removed a 26 ½ pound tumor from Mrs. Jane Todd Crawford on his kitchen table in Danville Kentucky.[1] Following his 1817 report entitled"Three Cases of Extirpation of Diseased Ovaria",[2] McDowell was roundly criticized by Dr. Ezra Michener of Philadelphia, who issued the following comment in the very journal that first published Dr. McDowell's work: "*The utter impossibility of our ever being able to ascertain, with certainty, the real nature of those internal diseases, the delusive nature of all their indications and the necessary danger of an operation under the most favorable circumstances, will be likely to prove an insurmountable barrier to the use of the knife in their removal, as few persons will be likely to risk their reputations on such uncertain data.*"[3] In his paper entitled "History of Ovariotomy," Dr. George Lyman reports that Joseph Lister referred to McDowell's surgery as "*belly ripping*" while another notable physician called it *"an operation of which it would not do to talk unless some reckless surgeon should attempt its performance*."[4]

More recently, Dr. Kurt Semm—an early pioneer of "pelviscopic" surgery—described the reaction of the medical world to the announcement of the first laparoscopic appendectomy as the "*worst criticism*" he had received in his career. Dr. Semm stated that "*both surgeons and gynecologists were angry with me, they were throwing stones at me. All my initial attempts to publish on laparoscopic appendectomy were refused, with the comment that such nonsense does not and will never belong to general surgery.*"[5] Following his lecture on laparoscopic appendectomy in 1981, the President of the German Surgical Society wrote to the Board of Directors of the German Gynecological Society suggesting that Dr. Semm be suspended from further medical practice. Semm submitted a paper on laparoscopic appendectomy to the American Journal of Obstetrics and Gynecology, which rejected it on the grounds that the technique reported was unethical.[6] One can only imagine the humiliation that Dr. Semm felt when his own coworkers requested that he "*undergo a brain scan because colleagues suspected that only a person with brain damage would perform laparoscopic surgery*."[7]

Many would be surprised to learn of the obstacles faced by "the fathers" of *in vitro* fertilization—Drs. Robert Edwards and Patrick Steptoe. In 1971, Edwards and Steptoe's application to the UK Medical Research Council (MRC) seeking support for an *in vitro* fertilization program was declined on ethical grounds.[8] Journalists spread visions of a "test tube time-bomb ticking away" and the influential BBC produced a television program about cell fusion and *in vitro* fertilization which opened with a picture of the atomic bomb explosion in Hiroshima.[9] Dr. Steptoe reported that no less than Dr. James Watson, the recipient of the 1962 Nobel Prize for Medicine and co-discoverer of the molecular structure of DNA, *"condemned us on the grounds that we would produce monsters and make other mistakes."*[10] Watson went on to accuse Steptoe and Edwards of *"dabbling in infanticide."*[11]

By examining history, we can begin to understand at least 3 important aspects of those who have made significant contributions to our specialty. First, they understood the significance of the works that preceded their own. Second, they had the courage to either build upon or question accepted dogma. Finally, they could persevere in the face of strong criticism. We hope that, by presenting stories of the most important leaders in our profession, we can not only pay homage to those who have championed our specialty, but can also draw on their lessons and real-life drama so that we can be inspired to continue when confronted with opposition, which can sometimes be quite personal. Progress in our profession is not only made by "standing on the shoulders of giants" but also by inspiring others to stand on their shoulders as well.

In this article, we explore the life and contributions of Dr. Harry Reich, who is considered to be one of the most influential figures in gynecologic surgery during the late 20th and early 21st centuries. Dr. Reich's command of pelvic anatomy, his lifelong interest in surgery, his willingness to challenge existing surgical dogma and his many innovations, writings and teaching skills made him one of the most significant pioneers of advanced laparoscopic surgery.

EARLY YEARS

Dr. Harry Reich was born on September 29, 1941, in Wilkes-Barre, Pennsylvania, the eldest of 3 sons born to Drs. Sidney and Sylvia Reich, one of the few Jewish families in northeastern Pennsylvania's coal region. At that time, Wilkes-Barre contained large Polish and Sicilian communities which were loath to entrust a woman's care to the town's uniformly male obstetricians. The preference for an empathetic woman provided Dr. Sylvia Reich, a general practitioner, with a large obstetrical practice. Many years later, young Harry would inherit this cohort of patients who were facing the gynecologic challenges of their middle years. Like many general practitioners in the post-war era, the Reich home ensconced the family's medical practice. The sounds of *"screaming during mealtimes"* (Personal Interview with Dr. Reich) that accompanied patients receiving injections in the adjacent procedure room was common and doubtlessly caused the young adolescent to become *"deathly afraid of needles."* Despite his apprehension, young Harry fought his *enetophobia* and sought work as a phlebotomist following his 1964 graduation from Lehigh University. An athletic injury to his left hand delayed his prein-

duction physical for Vietnam, allowing him to travel to Europe and gain entrance to the Royal College of Surgeons in Ireland from which he graduated in 1970. One of the marked differences between medical school training in Ireland and the U.S. was its emphasis on human anatomy. *"Ireland was very anatomy-oriented,"* Harry noted, with nearly 2 years of training compared to the relatively abbreviated exposure available in the United States. (Personal Interview with Dr. Reich) Following a rotating internship at The Queen's Medical Center in Honolulu (1970-1) he was accepted into the general surgery residency program at Boston's Peter Bent Brigham Hospital (1971-72) and completed his Obstetrics and Gynecology training at the Boston Hospital for Women (1972-75). In Boston, his fellow residents included such future academic luminaries as Drs. Isaac Schiff, Florence Hazeltine and Thomas Kosasa.

There were at least 4 important elements to his residency training that would set the young physician on his chosen path. **First**, he was exposed to the gifted vaginal surgeon Dr. Raymond J. Reilly, who instilled an appreciation for surgical anatomy and the importance of meticulous and efficient technique. **Second**, Harry had the opportunity to work closely with Dr. Robert Kistner, the acclaimed endometriosis and infertility surgeon and future President of the American Fertility Society (1979). **Third**, he was introduced to rudimentary laparoscopy –its use was confined to sterilization and diagnostic procedures. **Fourth**, his residency exposed him to a significant cohort of patients with endometriosis and pelvic inflammatory disease (acute and chronic) including tubo-ovarian and pelvic abscesses. The management of these entities provided an important foundation for future minimally invasive and effective alternatives to the prevailing therapies of that era.

Dr. Reich notes that at the start of his residency in 1972 *"laparoscopy was rarely done…(instead) what they did was called culdoscopy, where the patient was on all fours and the surgeon would put a scope through the culde-sac into the peritoneal cavity."* (Personal Interview with Dr. Reich) A year later he witnessed an increasing number of laparoscopies, which were performed for either diagnostic purposes or tubal sterilization. Later, Harry would recall that the early attempts at even simple laparoscopic interventions could be challenging:*"The first time (we) drained an ovarian cyst was a disaster"*,(Personal Interview with Dr. Reich) recalling that the patient developed a postoperative hemoperitoneum. Later, he reflected on the lessons learned from this case and how it would inspire him to devise "*under-water examinations*" to insure absolute hemostasis at the close of each case.

In addition to providing young Dr. Reich with his first exposure to laparoscopy as well as some of the world's leading minds in gynecology, the Boston Hospital for Women (BHW) provided him with an opportunity to care for a large population of patients with acute pelvic inflammatory disease as well as pelvic and tubo-ovarian abscesses (TOAs). While preparing for a grand rounds on the subject, Harry noted that in the early 1970s, the treatment of unruptured abscesses began to shift and included intravenous antibiotics, while surgery was reserved only for women who responded poorly. This approach was advocated by Dr. Ernie Franklin,[12] who in 1973 reported a large series of women with pelvic abscesses admitted to Atlanta's Grady Memorial Hospital. Franklin *et al.* concluded that *"primary conservative therapy is favored over aggressive management via surgery, except in cases of questionable diagnosis, suspected rupture, or failure of the abscess to respond to initial conservative management."*[12] Dr. Reich would later recount that *"it (was) really emphasized (in) Dr. Franklin's paper that most of these patients required a hysterectomy and bilateral salpingo-oophorectomy. I thought this is a terrible way to go in the future."* Instead, he questioned if there was another approach that could preserve both important reproductive structures and subsequent fertility. Years later, he would write that *"although this approach avoids immediate operation, prolonged contact between necrotic and inflamed tissue often causes dense fibrous adhesions that impair reproductive potential."*[13] In the years ahead, Dr. Reich would challenge this extirpative dogma, realizing that *"it is much easier to operate on acute adhesions than it is to deal with dense adherences between structures that obliterate normal anatomic relationships and have, by their chronicity, developed neovascularization."*[13]

Convinced that he wanted to specialize in gynecologic surgery, Harry sought an oncology fellowship which offered precisely the kind of training to hone the skills necessary for him to pursue his own track. In Harry's words, *"If you were interested in surgery, then gynecologic oncology seemed like the best path forward."* (Personal Interview with Dr. Reich) After completing his residency training, Harry turned down several fellowship opportunities, and instead accepted a position closer to home at Dr. Rodrique Mortel's Gynecologic Oncology program at the Hershey Medical Center. While a practicing attending physician at Hershey Medical Center, Dr. Reich encountered a case that would influence much of his future work. This was a case of a tubo-ovarian abscess and he noted *"what I found was that just (by) using careful blunt dissection with my fingers I could separate all the organs without excising them…so that caused me (to) decide (that) this was the direction I wanted to pursue."* (Personal Interview with Dr. Reich)

Soon after his arrival at Hershey, Dr. Reich was pursued by what he referred to as *"the three entities"* in Wilkes-Barre—Mercy Hospital's Midwifery program, the Wilkes-Barre Family Practice Residency Program, and the faculty at Wilkes-Hahnemann Medical School. While Dr. Mortel's program may not have provided him with the volume of *"hands-on"* training he'd desired, Harry felt sufficiently confident in his abilities to venture out into his own practice—including the *"three entities"* by January of 1976.

1976 was a whirlwind year for Dr. Reich. As a graduate of one of the country's most prestigious residency training programs, he was the recipient of both warm welcomes and professional jealousies. While Mercy Hospital's midwives were grateful for the arrival of a well-trained and confident supervising physician, acrimony and resentment from the town's "old guard" gynecologists would soon follow. The *native-born-outsider* soon gained admitting privileges at Wilkes-Barre General Hospital, whose Chief of Obstetrics and Gynecology, Dr. Paul Griesmer, was also a member of the town's largest obstetrical group. The two would soon find themselves on a collision course.

In many ways, the ensuing conflict was inevitable. The introduction of a new attending physician to an existing hospital staff certainly requires a level of oversight and scrutiny. If we add to this mix an exuberant, analytical, confident, young, Harvard-trained Obstetrician/Gynecologist with many new skills and updated clinical practices to the conservative and pedestrian ways of a small Pennsylvania town, we can see that the stage was set for contentious rivalries. It didn't't help that the energetic and passionate Dr. Reich attracted a pool of patients from existing practices, completed 3 vaginal hysterec-

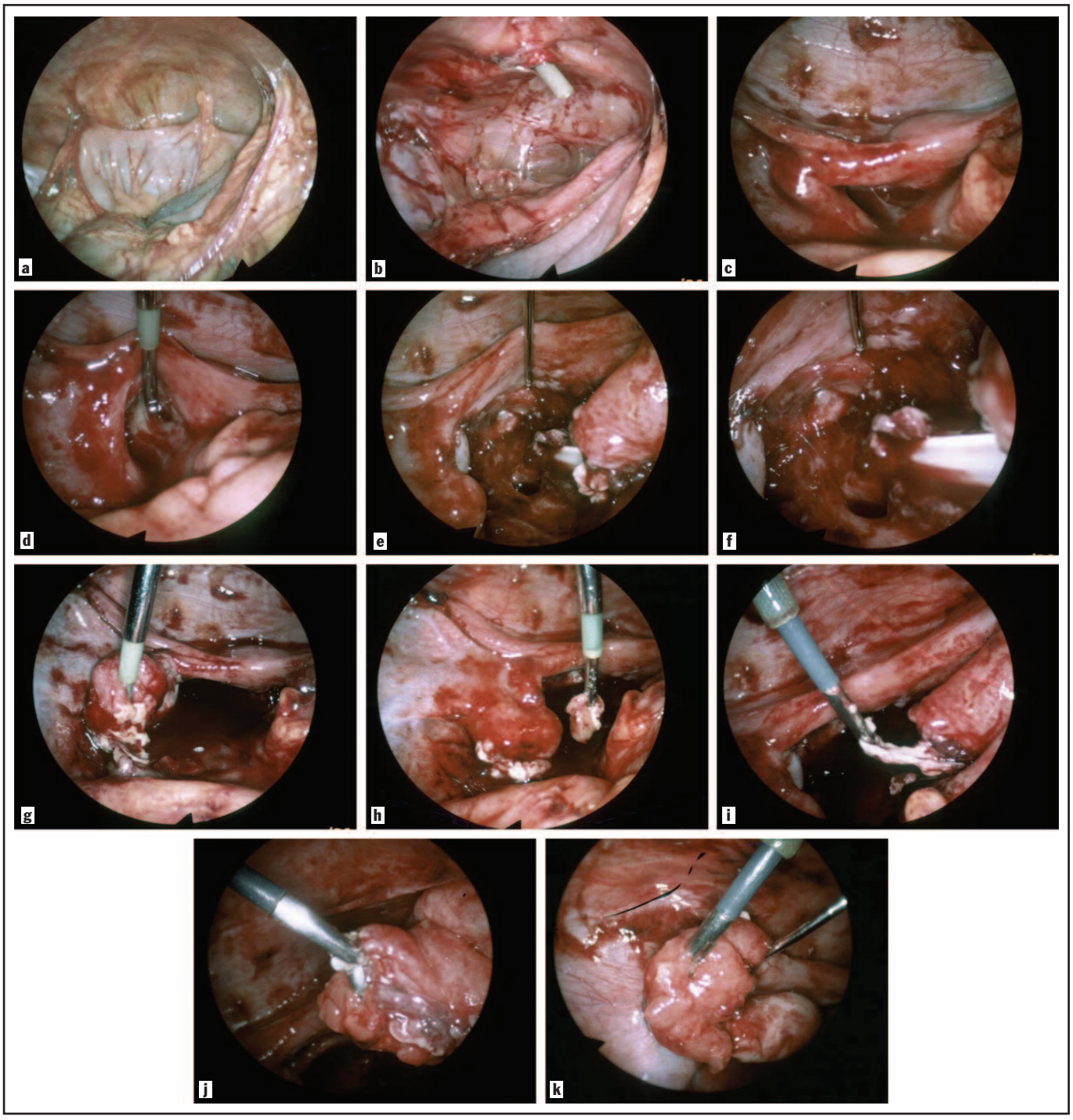

Figure 1 A-K. Laparoscopic views in a case from 1985. A 10-year-old girl with a post-appendiceal abscess 21 days after appendectomy and five days after the development of a peritoneal vaginal fistula. The patient had failed to respond to parenteral antibiotics and surgical drainage. Figure 1a. Initial view with pelvic adhesions. Figure 1b. Adhesiolysis was carried out to locate the rudimentary (prepubertal) uterus. Figure 1c. The uterus was located with pelvic abscess noted posteriorly. Figure 1d. Purulent material was evacuated from the cul de sac. Figure 1e. The drain and a peritoneal vaginal fistula were found deep in the cul de sac. Figure 1f. Close up view of the drain and fistula. Figure 1g. Meticulous excision of fibrous exudate from the left tube osteum. Figure 1h. Chunks of fibrous exudate were removed from the left tube osteum. Figure 1i. Exudate was excised from the right tube. Figure 1j. The right tubal osteum was dilated. Figure 1k. The left tubal osteum was dilated. The patient was discharged on post-operative day three, afebrile and pain-free. Many years after the surgery, she reports she had no gynecological issues and was able to conceive with no problems twice.

tomies in the time that Dr. Griesmer took to complete just one, or that he performed laparoscopic sterilizations, which the senior attending physician opposed on ethical grounds. Only later would the young Dr. Reich realize the depth of Dr. Griesmer's cupidity when he discovered that the senior physician had kept a dossier on the neophyte's professional activities from the time of his arrival in Wilkes-Barre.

Meanwhile, Mercy and Wilkes-Barre General Hospitals furnished the eager, young physician with a large volume of patients requiring vaginal surgery. Additionally, the midwife program also provided more than 100 patients who had undergone only the most cursory of infertility evaluations. Another cohort of Wilkes-Barre women sought permanent sterilization, which until then had been

difficult to access. The availability of an infertility population as well as a separate group of patients requesting sterilization offered the young attending physician an opportunity for refining and developing his laparoscopic skills. The combination of empathy and improved optics contributed to a deep and abiding interest in pushing the boundaries of what could be accomplished with this minimally invasive technique.

One of his special areas of interest, the management of tubo-ovarian and pelvic abscesses, was rekindled during his first few years in practice (Fig. 1,a-k) Harry explained that *"I had an abiding interest in the management of tubo-ovarian abscesses, and I thought that doing extirpative surgery was not necessary."* (Personal Interview with Dr. Reich) He was one of a very small group of gynecologists at the time who believed that *"in an effort to avoid this problem ….I advocated the use of laparoscopy with early lysis of acute adhesions as an alternative."* (Personal Interview with Dr. Reich) Years later, Dr. Reich would often repeat his agnostic approach: *"the rule of common sense should prevail…everything I thought (of) was common sense."* To that end, he *"always believed that PID could be much better treated laparoscopically."* In a dramatic departure from conventional practice, which dated to the early part of the 20th century, [14] Harry was able to perform delicate laparoscopic adhesiolysis and salpingostomies, often restoring and preserving structures that his contemporaries would otherwise remove.

During his first year in practice, Dr. Reich also performed what would become a pioneering technique: a laparoscopic salpingo-oophorectomy using Kleppinger bipolar forceps. Though an unplanned procedure—which was performed to control a bleeding complication arising from a sterilization operation—this would prove to be an important turning point for the young physician and for the future of laparoscopic surgery. Until then, electrosurgical control of the major blood vessels within the infundibulopelvic and utero-ovarian ligaments had never been demonstrated. The successful management of this case would inspire not only greater confidence in laparoscopy's potential role in minimally invasive surgery, but also controversy. In the next few years, Dr. Reich, equipped with little more than Kleppinger bipolar forceps and a unipolar knife electrode (activated with undamped current only without any coagulation current), began the treatment of both acute pelvic abscesses, chronic tubo-ovarian adhesions, and the dissection and excision of endometriomas and other areas of deep fibrotic endometriosis (DFE). Harry soon discovered that with the use of bipolar desiccation of the infundibulopelvic ligament at the time of vaginal hysterectomy, he could safely remove adnexal structures and eliminate the need for an abdominal approach. In 1978, Dr. Reich moved his surgical practice to the 150-bed Nesbitt Memorial Hospital in Kingston, Pennsylvania, whose chairman Dr. William Hazlett, provided a less adversarial environment for Dr. Reich's practice.

To appreciate the courage required for such innovations, one must comprehend how revolutionary Dr. Reich's ideas were in the late 1970s. Not only were his practices a departure from the prevailing practice in Wilkes-Barre, they also represented a radical departure from national standards of care. As late as 1992, Dr. Roy Pitkin, Editor-In-Chief of *Obstetrics and Gynecology* wrote an editorial entitled *"Operative Laparoscopy: Surgical Advance or Technical Gimmick?",* [15] in which he still questioned the validity of laparoscopic surgery and asked, *"when the procedure is not part of established clinical care, is it ethical to charge for professional services?"* Yet, despite his pedestrian environs, Dr. Reich was an industrious innovator. Between 1976 and 1980, Harry introduced the use of bipolar electro-desiccation of large vessels, and aquadissection (the use of pressurized fluid to aid in the performance of surgical procedures), which acted as a substitute for the surgeon's fingers in performing blunt dissection. During this period, Dr. Reich became the first gynecologist to use laparoscopy for the diagnosis and excision of endometriosis and endometriomas, using both unipolar electrosurgery and a carbon-dioxide laser. Dr. Reich introduced the incorporation of a rectal probe for the safer dissection of endometriosis in the obliterated cul-de-sac.

Another important innovation was "underwater laparoscopy", which was performed at the close of each case to allow for removal of the CO_2 pneumoperitoneum and replacement with 1-2 liters of lactated Ringers solution under *low* pressure to permit the "*discover(y of) persistent bleeding*" that might otherwise go undetected and untreated. From his success treating pelvic abscesses, he felt that the fluid diluted the bacterial load, and would be quickly absorbed by the sub diaphragmatic lymphatics. (Until 1986, these operations were performed with the surgeon's eye on the scope and not on a video screen. Thus, they could be considered quasi-sterile.) These innovations—further adding to his armamentarium of laparoscopic techniques—would lay the foundation for his professional career and the future of gynecologic surgery. Dr. Reich would soon demonstrate that, in addition to superior visualization of the pelvic anatomy, laparoscopic techniques offered unparalleled treatment, shorter hospitalizations and decreased recoveries compared to conventional "open surgery."

By 1980, Dr. Reich had largely eliminated the use of large abdominal incisions and was performing operative laparoscopies employing these innovative techniques (Figs. 2,3). He was blindsided when, in February 1980, 2 years after he had relocated most of his practice to Nesbitt Memorial Hospital, he was informed that Dr. David Grow, president of the medical staff at Wilkes-Barre General Hospital (WBGH), would call for a *special ad hoc* investigatory committee to address various charges leveled at Dr. Reich's **disruptive behavior** (*"judgement, maturity, quality of work, abuse of privileges, abuse of procedures, personnel and patients."*). [16] More was at stake than Dr. Reich's reappointment to the medical staff of WBGH: such an action could initiate a cascade of events that could threaten his privileges at other hospitals and even jeopardize his medical licensure. Why Dr. Griesmer would launch such provocation under these circumstances is open to speculation, but a careful review of the trial's transcripts makes it difficult to simply dismiss the notion that these actions were motivated by personal animus, jealousy and even political ideology. Only by reading the trial record can one appreciate the malignant atmosphere in which Dr. Reich worked. For instance, Dr. Griesmer presented 20 cases of women with endometriosis who, in his opinion, should have undergone hysterectomy rather than minimally invasive excision. In a separate set of charges, Dr. Reich was castigated for performing routine dilation and curettages prior to diagnostic laparoscopies for the diagnosis of pelvic pain or infertility. In his testimony, Dr. Griesmer noted that, *"It was pointed out to Dr. Reich that what this really amounted to, was the performance of a procedure (D and C at the time of laparoscopic sterilization) with the intent to*

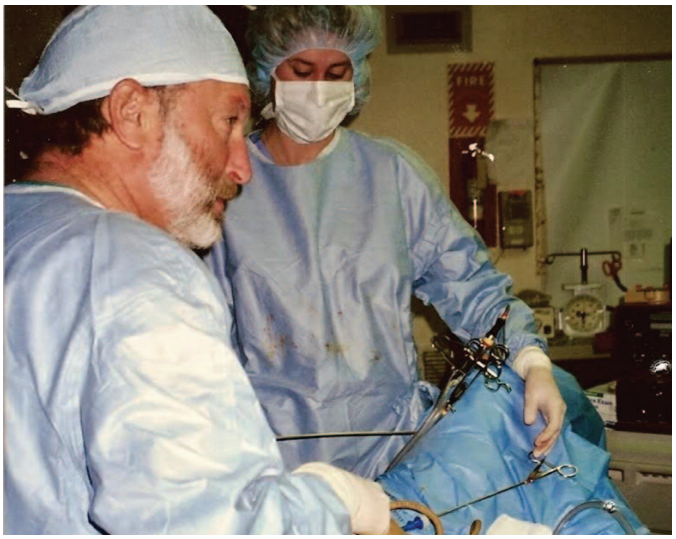

Figure 2. Dr. Harry Reich and Lisa Sekel, his scrub nurse for 20 years.

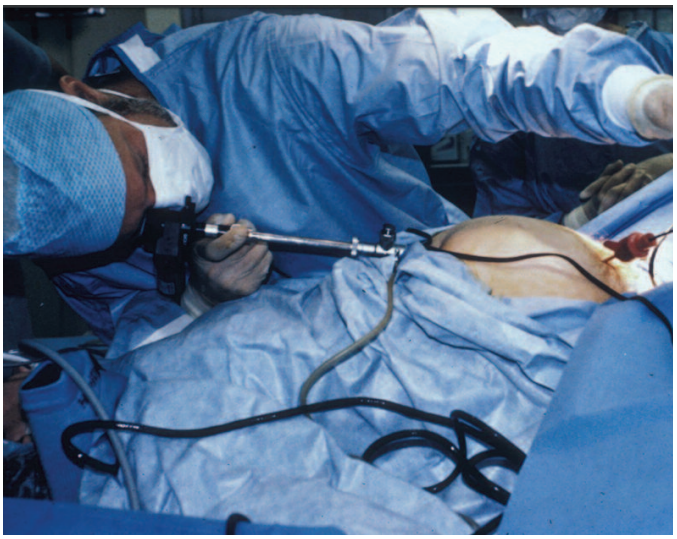

Figure 3. Laparoscopy before video.

abort the patient if she was indeed pregnant." [16] In another instance, Dr. Griesmer enlisted the help of a general surgeon to defame Dr. Reich:[16]

> *"In attempting to further evaluate Dr. Harry Reich, (to date), I contacted Dr. George Moses, Chief of Surgery at Mercy Hospital in Wilkes-Barre. Dr. Reich had been previously on the staff and had worked at Mercy Hospital from the time he arrived in Wyoming Valley. Dr. Moses related (a) considerable amount of information about Dr. Reich and gave approval for me to relay this information to all parties concerned. Dr. Moses stated that in his opinion Dr. Reich was a (charlatan)." (A large portion of Dr. Moses's general surgical practice was abdominal hysterectomies.)*

Although no specific examples were cited, Dr. Griesmer's testimony offers many examples of *ad hominem* attacks without substance. The February 1980 proceedings revealed that members of the operating room and labor floor staff as well as hospital admission officers were cautioned against writing letters of support for Dr. Reich:*"they really do feel that if letters were written that they could get fired....or that life could be made very miserable for them."* Simultaneously, Dr. Reich notes that "*my wife is battling these rumors about me getting kicked off the staff of this hospital*." One can hardly imagine the determination required to overcome the onslaught on Dr. Reich's professionalism, judgement and character, and how, despite this opposition, he was able to practice under such hostile conditions. Though he successfully defended himself, it doubtlessly came at a great financial and emotional cost to him, his wife Liz, and their young family. Despite the legal turmoil of 1980, Dr. Reich's innovative and pioneering work continued.

The ordeal of the February trial required an outlet from the miasma of hospital politics. Harry, a self-described "jogger" discovered his own untapped athletic ability and, with 3 weeks of training, ran in his first marathon (the New York City Marathon of 1980). Harry's determination to run a marathon was entirely consistent with his character. In his book, Marathon Training, Joe Henderson writes that in marathon running " *you can never be sure. That's what makes the marathon both fearsome and fascinating. The deeper you go into the unknown, the more uncertain you become. But then you finish. And you wonder later, 'How did I do that?' This question compels you to keep making the journey from the usual to the magical."*[17] Apart from a much-needed outlet, the marathon would doubtlessly provide Harry with an opportunity for reflection, self-actualization and opportunities.

In spite of the stresses of the 1980 trial, Dr. Reich continued to develop important laparoscopic techniques. Over the next few years, he developed skills for the treatment of partial and complete cul-de-sac obliteration (1981) and ectopic pregnancies (1983), and he even performed the first laparoscopic-assisted vaginal hysterectomy (1983). The pressure of the February trial only strengthened his resolve for his meticulous and time-consuming approach; eventually earning these procedures the moniker proposed by Dr. Ray Garry: "Foreveroscopy".[18]

The novice jogger of 1980 soon became a respectable runner. In 1983, after completing his third Boston Marathon in a very competitive time (3 hours, 7 minutes), Harry visited a former teacher, Dr. Robert Hunt, who had been performing what Harry would deferentially refer to as "*laparoscopies with radical picture-taking*." Although very few operative procedures were performed in Boston at the time, Dr. Hunt introduced Harry to the Olympus CLEF photo system, which enabled 35 mm laparoscopic photo-documentation. Although this system was cumbersome and primitive, and required exposure "*bracketing*" to obtain journal- and lecture-quality material, the ability to document and archive irrefutable "evidence" of intraoperative findings would represent a key turning point –what Harry described as "The Big Leap" —in his career. By October 1983, Harry *"took photos of every case I did, and I didn't do any more laparotomies."* Harry recalls that the capability to take pictures is "*what got me in*, referring to the ability to share dramatic before-and-after intraoperative photographs, which led to professional recognition from important peers.

In 1984, Dr. Reich considered expanding his nascent infertility practice to include a relatively new laparoscopic procedure—*gamete intrafallopian transfer* (GIFT)— which seemed to be a natural "fit" with his practice. While attending a course given by the well-known reproductive biologist Dr. Barry Bavister at the University of Wisconsin, Harry was able to present some of his own laparoscopic experience to other attendees, who encouraged him to present his advanced

techniques at scientific meetings. Since Harry's experience—which by then had included thousands of laparoscopies—was cloistered from a mainstream academic setting, he might not have fully grasped the uniqueness of his work. Operating reclusively in Wilkes-Barre, Dr. Reich would later remark *"I didn't know that I was doing something special"* and was told by his new-found colleagues *"you're crazy not to present this stuff at meetings."*

An important turning point for Dr. Reich was in 1985, as he began his transition from a relatively unknown small-town gynecologist to an important character on the world stage. In March 1985, he presented a paper at the Second World Conference on Infectious Diseases and Human Infertility (Lenox Hill Hospital in New York) entitled "*Laparoscopic Salpingotomy and Salpingectomy for the Definite Treatment of Tubal Ectopic Pregnancy".* [19] His series of 50 cases was well received and this buoyed his confidence before his first appearance at the Thirty-Third Annual Meeting of the American College of Obstetrics and Gynecology (ACOG) in May of 1985 (Washington, DC).[20] There he gave what he later described as a "nerve wracking" 10-minute, 80-slide presentation during which he presented "before-and-after" photos of 20 cases involving laparoscopically-treated tubo-ovarian abscesses in a manner that would preserve these important structures. In each of these cases, Dr. Reich performed a "second-look" laparoscopy 6 months postoperatively and found markedly improved, if not normal, anatomy.[20] Harry recalls being *"raked over the coals"* and *"demolished"* by the program's moderator, Dr. James B. Kitchen III, Chairman of Obstetrics and Gynecology of the University of Virginia, who characterized his work as *"substandard"* and *"dangerous".* Despite the indignity of these remarks, Dr. Reich's presentation occasioned some positive feedback and a serendipitous meeting with Dr. Ron Levine. Dr. Levine, Professor of Obstetrics and Gynecology at the University of Louisville, was an early enthusiast of laparoscopic surgery and had traveled to Kiel, West Germany in 1983 to study under Dr. Kurt Semm. Although a scheduling conflict prevented Dr. Levine from attending Dr. Reich's lecture, the two of them soon discovered their shared passion for laparoscopy and became fast friends. Harry quickly produced a well-received private presentation for his senior colleague. Dr. Levine would later play a key role in Dr. Reich's early career and facilitated the acceptance and expansion of this important minimally invasive approach throughout the United States and the rest of the world.

In July, 1985, Harry and his family spent a month vacationing in France and met another innovator, Parisian gynecologist Dr. Jeanine Henry-Suchet, who had previously reported a series of 37 women undergoing the laparoscopic treatment of tuboovarian abscesses.[21] In Clermont Ferrand ,he visited Professor Maurice Bruhat, one of the earliest pioneers of advanced laparoscopic surgery. Professor Bruhat was widely respected as one of the great visionaries and proponents of laparoscopic surgery. His team included such greats as Dr. Hubert Manhes, who was the first to describe the laparoscopic management of ectopic pregnancy (1973)—an idea considered "crazy" at that time.[22] Although the month in France may not have taught young Dr. Reich new techniques, the friendships and associations made there doubtlessly raised his profile on the world stage and produced a band of brothers that would alter the course of surgical history.

The annual meeting of the American Association of Gynecologic Laparoscopists (AAGL) on November 21, 1985 (Anaheim, CA) would prove to be another turning point for AAGL and for Dr. Reich. At this meeting Dr. Al Yuzpe, in his Presidential address, described signs of a bleak future for the nascent organization: membership was at an all-time low and attendance at meetings was declining. It was even necessary to cancel some regional courses and the organization was considering holding its annual meeting every *other* year. Less than a decade earlier, Dr. Yuzpe, in an editorial comment in *Laparoscopy*, opined that *"Laparoscopic removal of tubal pregnancies should be considered in the same category as uterine suspension—i.e., surgical gymnastics."*[23] However, at the 1985 meeting, the AAGL's nadir, Dr. Reich presented the gathering's first paper on advanced laparoscopic surgery, entitled *"The Treatment of Ovarian Endometrioma using Laparoscopic Surgical Techniques*", which summarized the results achieved in a series of 50 patients. The presentation attracted the attention of other enthusiasts and leaders in the minimally invasive community, including such luminaries as Drs. Jaroslav Hulka and Dan Martin. Speaking invitations soon began pouring in. In fact, by 1989, only 4 years after Dr. Reich's debut at AAGL, President Dr. John Esposito, reflecting on the previous 4 years, reported that *"the organization has found new and interesting reasons for physicians to attend our meetings and to join our association. This year we have reached a new high in membership. The association will soon break the 5,000 barrier."*[24] Dr. Espositio acknowledged that *"an innovation that helped to make the annual meeting a success was the addition of a postgraduate course in operative laparoscopy."*[24]

By 1986, Dr. Levine had invited Dr. Reich to lead the very first U. S. "Workshop Course in Advanced Laparoscopic Surgery" (University of Louisville, April 10-12, 1986) with Dr. Kurt Semm, the famed "pelviscopic" surgeon from Kiel, W. Germany. Harry would go on to Chair the AAGL course for the next 15 years! Among the attendees were Drs. Jaroslav ("Jerry") Hulka and Harry Hasson. Another attendee, Dr. C.Y. Liu, would go on to be a world-renowned figure for laparoscopic correction of pelvic organ prolapse. Later that year, Dr. Reich was given his first carbon-dioxide laser, and subsequently helped develop it: the Coherent Ultrapulse 5000L (Coherent, Saxonburg, PA), which he promptly incorporated into his surgical armamentarium.[25,26]

By 1987, Dr. Reich had a large following, and stated that "*almost all gynecological and general surgical procedures for benign disease can be performed using laparoscopic surgical techniques."*[27] Harry noted that, at the time, such procedures were performed by *"a small cadre of advanced laparoscopic surgeons (today) using instrumentation not far removed from that utilized for laparoscopic sterilization, the exception being the ability to suture and to use a CO_2 laser beam through the operating laparoscope."* Dr. Reich went on to predict that *"the next few years should see many advances in this instrumentation conceived by entrepreneurial surgeons and instrument makers."* In addition, he envisioned *"the expansion of laparoscopic surgery from gynecology to general abdominal surgical procedures."*[27]

Although Dr. Reich was performing cutting-edge surgery, he encountered substantial resistance in having his work published in mainstream journals. By 1987, he had amassed a series of 100 women with cul-de-sac obliteration secondary to retrocervical deep fibrotic endometriosis who were treated largely for infertility and pelvic pain. Despite achieving excellent results during these carefully executed procedures, his sub-

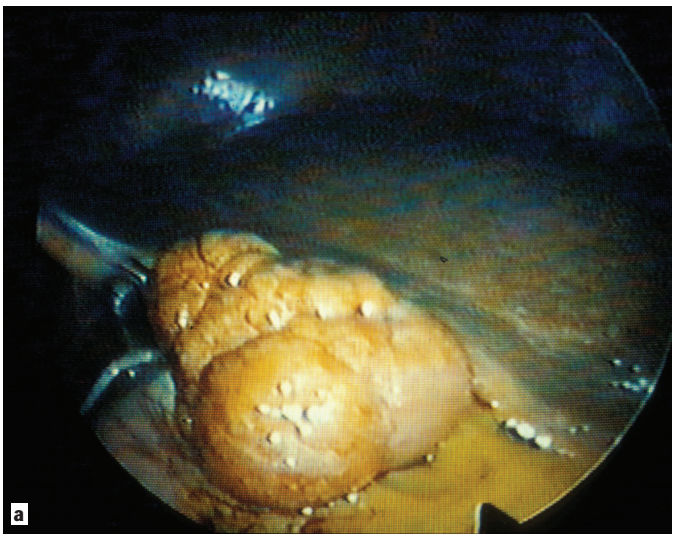

Figure 4a. Liver lesion.

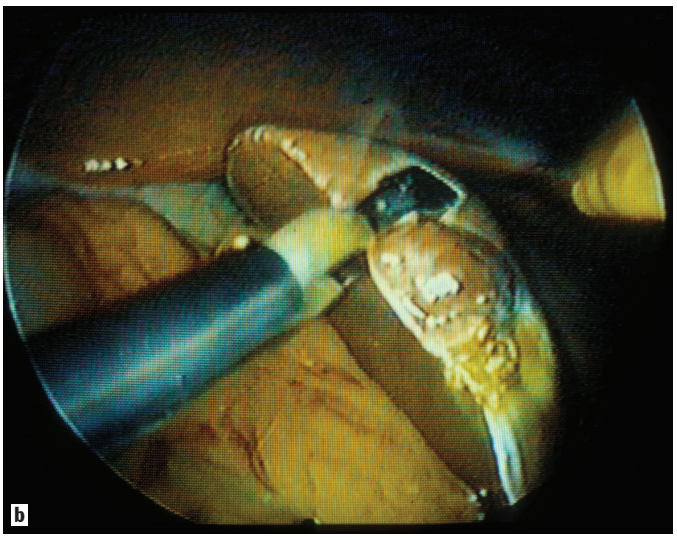

Figure 4b. Liver hemangioma.

missions to the leading journals of the day (*Obstetrics and Gynecology, The American Journal of Obstetrics and Gynecology and Fertility and Sterility*) were all rejected. One reviewer stated that "*One cannot argue with the author's good results or his low complication rate. I feel that there are patients who have a degree of cul-de-sac disease that can be managed through the laparoscope and that the skilled endoscopist should be able to manage these patients. I believe that the direct laparotomy approach will continue to be the accepted approach to significant cul-de-sac and bowel endometriosis. I feel that the experience of the author in dealing with severe endometriosis involving the cul-de-sac is certainly extensive. Additionally, his aggressive approach is certainly noteworthy, although it is unlikely many laparoscopists could perform these procedures. Despite the extensive and noteworthy experience, I feel that the article should not be published.*" Only with a great deal of persistence was this report finally accepted in 1991.[28,29]

The year 1988 marked an important milestone in the history of gynecologic surgery. Dr. Reich had been receiving regular visits from Dr. Percy Wadman, President of the Massachusetts Medical Association and a member of the faculty of Tufts Bay State Medical Center (Springfield, MA). *"Percy would come with two residents and an O.R. tech…every month."* In January of that *year, "they came down for their monthly sojourn. I had (scheduled) 3 cases for them to watch and 2 of them cancelled."* This lighter-than-expected schedule may have spurred Dr. Reich to decide that *"I'd do the whole thing laparoscopically. The only big thing I did that day that was new (was that) I coagulated the uterine vessels which was a 'no-no' in those days."* After isolating the uterine vessels and the ureter, he used Kleppinger bipolar forceps to desiccate them. Harry recalls *"I was slow to publish it."* His paper was rejected by the leading journals including *Obstetrics and Gynecology* and the *Journal of Reproductive Medicine*, but eventually appeared in the Journal of Gynecologic Surgery in 1989.[30] The impact of the first laparoscopically assisted vaginal hysterectomy was described by Dr. Dan Martin, a world-renowned specialist in endometriosis and infertility. Dr. Martin recalls that while he and Dr. Reich were working on a monograph, Harry "*was getting ready to do a hysterectomy.*" Dr. Martin privately thought, *"that was (going to be) another firestorm (in the making)"* and recalls how *"a whole bunch of us were waiting for (Harry to perform) a hysterectomy, and then when he, Harry, does it, it unleashes all of this other stuff."*(Personal Interview with Dr. Dan C. Martin) Professor Ray Garry would later comment that *"the successful demonstration of this procedure transformed overnight our perceptions of what was surgically possible without the need for large abdominal wall incisions."*[18] The potential to convert a large number of abdominal hysterectomies to a laparoscopically assisted vaginal approach was considerable given that some 70% of the 600,000 hysterectomies performed each year in the U. S. were performed with a laparotomy incision.[31] The boundaries of laparoscopic surgery were expanded again when later that year Dr. Reich was presented with a patient—the wife of his pathologist at Nesbitt Memorial Hospital—with Stage I ovarian cancer (both ovaries) who refused traditional treatment and requested that she be managed laparoscopically. The patient underwent bilateral oophorectomies, a vaginal hysterectomy, omentectomy and laparoscopic lymphadenectomy.[32,33] She refused radiotherapy and chemotherapy. Thirty-five years later, this patient is still alive and cancer-free.

The 1990s were a decade of continued advances and achievements in advanced laparoscopic surgery. In 1991, still expanding the role of laparoscopic surgery, Dr. Reich published the first case report of a laparoscopic excision of a benign liver lesion (Fig. 4a, 4b). [34] Working with the acclaimed fetal surgeon Dr. Ruben Quintero, Dr. Reich published the fetoscopic ligation of an acardiac twin (Fig. 5) [35] and the first endoscopic devascularization of a large chorioangioma.[36] For most of the 90's, Reich was consumed with bowel surgery for the excision of endometriosis (development of the EEA (end-to-end anastomosis) circular stapler for disk excision) and extensive postoperative adhesions.[37,38]

One of the many obstacles to surgical

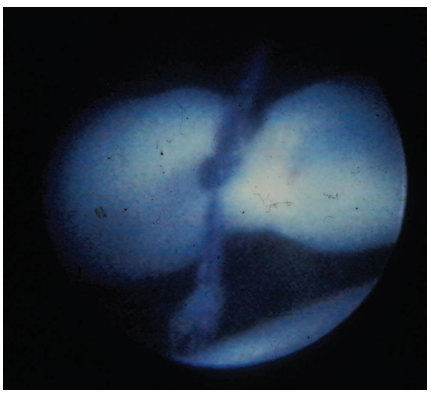

Figure 5. Fetoscopic ligation of the umbilical cord of an acardiac twin.

Figure 6. Dr. Reich teaching a laparoscopy course in Russia.

Figure 7. Dr. Reich operating with Dr. Mario Malzoni in Russia.

innovation is the inherent financial challenge. Medical insurers at the time refused to reimburse for minimally invasive, tedious and time-consuming laparoscopic surgery on the basis that they considered it to be either "*experimental*" or "*investigational*." The insurance challenges eventually compelled Dr. Reich to expand his practice, eventually landing him at New York's Columbia Presbyterian Medical Center where he served as Director of Advanced Laparoscopic Surgery (1995-2000).

Dr. Reich's impact on this prestigious and internationally acclaimed medical center is well described by Dr. Melanie Marin, who served as a resident from 1993-1997. Dr. Marin noted that, during her 4-year stay, she witnessed a rapid transition during Dr. Reich's tenure. *"The residents two years above me didn't do any (operative) laparoscopy…they (performed) tubal ligations or (removal of) ovarian cysts. (By the time) I graduated in 1997 (those in) my year (and) those that graduated after me (performed) almost everything laparoscopically."*(Personal Interview with Dr. Melanie Marin) Many years later, Dr. Marin reflected on Dr. Reich's willingness to teach, remarking that *"he took anyone who would come under his wing. If we wanted to learn from him, he would take us. Harry would literally sit on the stool and watch me learn to manipulate an intraabdominal needle for 20 minutes in order to throw a stitch…with patience that was beyond remarkable."* Although Dr. Reich, and his teachings, were welcomed by resident trainees there was considerable resistance to the introduction of advanced laparoscopic surgery. Despite the warm reception by trainees, Dr. Reich noted that most of the attending physicians at Columbia were far more skeptical and significantly less supportive. "*Before me, nobody at Columbia had advertised the conservative treatment of endometriosis.*" The atmosphere—one of intense scrutiny—might have been reminiscent of what Dr. Reich faced 15 years earlier in Wilkes-Barre. The sentiment toward advanced laparoscopic surgery during the mid-1990s is summarized in a 1996 editorial in the New England Journal of Medicine [41] in which the authors note that *"Except for abortion, laparoscopically assisted vaginal hysterectomy has generated more controversy and discussion than any other type of gynecologic surgery in recent times."* One can only imagine the stress that accompanied advanced surgical techniques involving bladder, ureter, and rectosigmoid in an atmosphere where a complication might threaten one's hospital privileges.

THE LEGACY OF DR. HARRY REICH

In time, operative laparoscopy would become the mainstay of approaches not only to gynecologic surgery but also to general surgery. Dr. Pitkin, a critic of operative laparoscopy in 1992, wrote an editorial in *Obstetrics and Gynecology*—18 years later—in which he states, *"a substantial body of evidence has accumulated in recent*

Figure 8. Drs. Harry Reich, Assia Stepanian and Franklin Loffer awarded honorary professorship in Russia.

Figure 9. Professor Ray Garry with Harry and Elizabeth Reich after Dr. Reich was appointed a Fellow of the Royal College of Obstetricians and Gynecologists.

years to support the laparoscopic approach to various gynecologic operations… From this extensive literature it is now clear that many, if not most, gynecologic operations traditionally done by laparotomy are amenable to a laparoscopic approach. Further studies are consistent and indicating that operative laparoscopy confirms unequivocal advantages over older surgical approaches to various operations… The benefits of the laparoscopic approach include less pain and shorter postoperative convalescence, both in hospital and after discharge."[42]

It is difficult to overstate Dr. Reich's impact on gynecologic and general surgery around the world. In 1990, he conducted the First Advanced Laparoscopic Surgery Workshop in Melbourne. In 1991, following the fall of the Berlin Wall, Harry, along with Drs. Thierry Vancaillie and Jordan Phillips, Founder of the American Association of Gynecologic Laparoscopists (AAGL), were invited to Moscow by Dr. Leila Adamyan to conduct their first demonstration and a course on advanced laparoscopic surgery (Figs. 6, 7). Harry notes that *"I had no idea what they had for equipment."* He quickly learned that *"they had no bipolar or unipolar"* electrosurgical generators. *"If I didn't know how to suture, I wouldn't have been able to do it."* The courses were well attended with up to 500 participants. The annual meeting on advanced laparoscopy continues to this day (Fig. 8). Dr. Reich's travels have taken him to every continent and over 60 countries including the U. K., France, Germany, Italy, Turkey, Singapore, Egypt, South Africa and Ukraine. In 2002, he performed the first laparoscopic hysterectomy in Beijing. In 1997, he became the first non-European to become a member of the European Society for Gynaecological Endoscopy.[43]

In 2012, Dr. Reich was appointed a Fellow (*ad eundem*) of the Royal College of Obstetricians and Gynaecologists in honor of his pioneering work in the field of endoscopy (Fig. 9). Dr. Ray Garry, Professor of Obstetrics and Gynecology at the University of Western Australia, stated *"Today, Dr Reich's skill and courage to persevere benefits women worldwide. His commitment to develop – and teach – radical excisional laparoscopic techniques for the removal of extensive and deep endometriosis has spared thousands of women from having big, scarring, painful incisions. These techniques are now recognized as a "gold standard method" and are imitated in most specialist endometriosis centers worldwide, making Dr. Reich one of the most influential gynaecological surgeons of the late 20th century."*[18] STI

ACKNOWLEDGEMENTS

Dr. Harry Reich contributed photographs for this paper just prior to publication.

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