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Dear Dr. Hughes:

I write to congratulate you and your colleagues on the remarkable essay on Arthur Barsky.

This essay captures a great deal of history as well as an outstanding figure in international relations on medicine.

Please give my specific compliments to Dr. Emily Barsky and Dr. Arthur J. Barsky for contributing their specific insights to the essay.

Sincerely,

William C. Lineaweaver, M.D., F.A.C.S.

WCL/ar

Better to Light a Candle

Arthur Barsky and Global Plastic Surgery

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Abstract: Plastic and reconstructive surgery has had a long history with international humanitarian efforts. As the field of global surgery continues to gain momentum in academic centers throughout the world, the role of the surgical subspecialist in the public health infrastructure of low-resource communities has also begun to gain a new sense of wonder and importance. Arthur Barsky, Jr. was arguably one of the most influential forefathers of global plastic surgery. Throughout his notable career spanning most of the 20th century, Barsky remained dedicated to delivering plastic and reconstructive surgical care to the disadvantaged worldwide, as well as educating others to do the same. Although he was not the first surgeon with an interest in global health, Barsky's work was unique and influential in its originality, magnitude, and scope. An appreciation and understanding of Barsky's groundbreaking work will help inform the future development of sustainable surgical systems in resource-poor settings.

Key Words: Arthur Barsky, global surgery, international plastic surgery (Ann Plast Surg 2013;71: 131-134)

We will cling to our art of healing if only because it can prove that we are not beasts. We need to be reminded that man has also studied the art of life.

-Edward K. Barsky1

The study of surgery in resource-poor settings around the world has recently gained momentum. Surgically treatable diseases cause substantial death and disability globally.2-6 This burden is heaviest in the poorest regions of the world. As interest in global surgery grows, so too does the attention paid to subspecialists, including plastic surgery. Surgical conditions effectively treated by plastic and reconstructive surgical procedures comprise a large component of this worldwide burden, and plastic surgeons stand uniquely positioned to provide a desperately needed and essential service.7-11

Plastic and reconstructive surgical care has increasingly been shown not only to be cost effective but also to have an immense potential impact on the economy of a region, delivering a substantial return on investment. 12,13 In many ways, the specialty of plastic surgery has been a leader in global surgery development in low- and middleincome countries.

As the next generation of plastic surgeons embarks on their careers, many have an interest in global health. They should know the role that plastic surgery has played in the development of what many now call "global surgery." One of the most significant figures in this seldom-reviewed history is the New York-based plastic surgeon Arthur Barsky, Jr. From his early experiences with the Hiroshima Maidens after World War II to his development and operation of a dedicated reconstructive surgical unit in the midst of war-ravaged Saigon during the war in Vietnam, Barsky was an iconoclast. His efforts in global surgery were built on the principles of sustainability, collaborative partnerships, and equitable care for the poor. He is largely remembered for his academic contributions to plastic surgery, and there are many. However, Barsky's efforts in global surgery provide a model for building sustainable surgical systems in resource-poor settings.

PERSONAL HISTORY

If medicine was Chekhov's lawful wife, 14 it too was a prominent figure to most in the Barsky family. Arthur Barsky, Jr, was born January 7, 1899, in New York City to a family already well versed in the lexicon of the medical world. His father was a prominent cardiologist, instrumental in the founding of Beth Israel Hospital in New York. 15,16 Growing up, Arthur would often accompany his father on house calls, and these early experiences likely influenced his later career choices. "I must say at this time," Barsky wrote in a 1978 memoir, "that my father's intense interest and devotion to his profession was, I believe, one of the main reasons why I went into medicine."15

Of Arthur's 3 brothers, 2 were also physicians. Arthur's older brother, Edward K. Barsky, was a surgeon who became intimately involved in establishing field hospitals for the wounded during the Spanish Civil War in 1936.1,17 Together with a group of physicians, Edward established the American Medical Bureau to Aid Spanish Democracy that helped deliver emergency medical services and essential surgical care to the frontlines of the Spanish war. 17

Barsky's passion for plastic and reconstructive surgery was well established even before medical school. 15 In line with his career ambitions, he attended the University of Pennsylvania School of Dentistry before medical school, where he met and befriended Dr George M. Dorrance and Robert Ivy, 2 prominent figures in maxillofacial surgery. Through Dorrance, Barsky also met Harold Gillies, with whom he would later study in England, and Barsky's passion for reconstructive surgery (or, the "surgery of repair") began to mature during this time. 15,16

After graduating from medical school at New York Medical College in 1926, Barsky went on to work with some of New York's finest surgeons of the day: he trained in the New York

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MD, respectively.

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Postgraduate Medical School and Hospital under J Eastman Sheehan from 1927 to 1934, conducted a fellowship under Sir Harold Gilles (where he became close friends with Pomfret Kilner), and rotated at several notable clinics from 1934 to 1939, including those of Sheehan in New York, Blair in St Louis, and Kazanjian in Boston. 15 He developed an interest and a passion for surgical education, authoring a textbook on plastic surgery and developing plans for a plastic surgery journal.15

After the American engagement in World War II in December 1941, Barsky enlisted for military service. He was assigned to the Center for Plastic and Hand Surgery for the Fourth Service Command, Northington General Hospital, in Tuscaloosa, AL, where his medical knowledge, surgical skill, and constant professionalism gained him respect and a reputation as one of the finest surgeons of his time. 16 In the early 1950s, Barsky moved to Mount Sinai to build a plastic surgery training program. From there, he conducted the first of his international surgical efforts, which would continue to impact and define his career for years to come.

WORLD WAR II AND THE HIROSHIMA MAIDENS PROJECT OF 1955-1956

In the aftermath of the atomic bombing of Hiroshima and Nagasaki, there was a growing concern for civilian injury because of the blast and the radiation. A group of young women particularly disabled and disfigured by burns and scar contractures were dubbed "keloid girls" because of the obvious extent of their deformities. 18 Norman Cousins of the Saturday Review was involved in the early stages of helping these women, and he formulated a plan to bring the victims to the United States for reconstructive surgical treatment. Through connections at Mt. Sinai Hospital in New York City, Cousins approached Barsky to volunteer in the project, and in 1955, Barsky accompanied Dr William Hitzig to Japan to evaluate the bombing victims. Barsky subsequently developed a plan to bring 25 of the most severely deformed women back to Mt. Sinai for reconstructive surgical treatment. Together with Drs Sidney Kahn and Bernard Simon, Barsky became the head surgeon for what would become known as the Hiroshima Maidens Project.

During the course of 18 months, Barsky's team performed nearly 140 separate operations to address the incapacitating deformities of these afflicted women. 15,18,19 During the Project, Barsky insisted on the collaborative involvement of Japanese surgeons in an effort to improve international education on new and novel reconstructive surgical techniques. Those who participated in the project later returned to Japan with a new skill set and an appreciation for academic plastic surgery. They soon formed the Japanese Plastic Surgical Society (of which Barsky was the first honorary member), authored textbooks and journals, and developed the field of plastic surgery in their home country.

Throughout the Hiroshima Maiden's Project, Barsky's insistence on collaborative education helped introduce the idea of humanitarian surgery to the American public. Its success was soon evident in the rapid development of plastic surgery as a new surgical specialty in Japan. In the atmosphere of mistrust and skepticism that seemed to permeate American society in the 1950s, Barsky's efforts to foster international goodwill through global surgery could scarcely have been more important. His approach was both unique at the time and an indication of what was to come in his future global surgical pursuits.

THE VIETNAM WAR AND THE BARSKY UNIT

The end of the 1960s saw the United States' war effort in Vietnam becoming both more complicated and more unsettling for people around the world. With increasing reports of civilian death and injury, and alarming numbers of pediatric war injuries, Barsky, then at the Albert Einstein College of Medicine in New York, felt compelled to use his experience in global surgery to help the Vietnamese care for their injured children. Together with Thomas Miller, a lawyer, Barsky formed Children's Medical Relief International (CMRI) in 1966, which would become the organization through which Barsky would launch a unique and wide-reaching project for global plastic surgery.15

Under the auspices of CMRI, Barsky conducted a needs assessment for reconstructive surgical care in February 1967, touring district hospitals and health facilities from Hue southward to Saigon. In addition to the war injured, he also discovered a significant burden of congenital and acquired anomalies including cleft lip and palate, noma deformities, and scar contractures.20 The immense need for essential reconstructive surgical services among children in Vietnam was evident. There were no advanced hospitals to care for the sick, nor were there any plastic surgeons in the country 15,21: indeed, there were only 1350 physicians in total to care for over 16 million civilians in the entire conflict-embroiled nation.22

After his experience with the Hiroshima Maidens Project, Barsky understood the primary importance of multilateral partnerships in building sustainable surgical efforts. Soon after their survey, Barsky and Miller collaborated with the South Vietnamese Ministry of Health and USAID to develop a reconstructive surgical plan for Vietnam. The enormity of need in the country during 1967 precluded transportation of patients to the United States, and a program like the Maidens Project would fail to provide the sustainable training so desperately needed in Vietnam at the time.²⁰ Therefore, Barsky and Miller developed a 3-fold mission: to establish a plastic surgery treatment program for the children of Vietnam; to develop a rigorous training program for Vietnamese surgeons, nurses, and paramedical personnel; and to build a modern hospital facility in Saigon. This state-of-the-art hospital, which would be held to the same level of quality and standards that was expected in the United States, was designed "for the teaching and training of Vietnamese surgeons, anesthetists, pediatricians, nurses, ancillary personnel, etc" from its inception. 15 Barsky welcomed multinational and interdisciplinary partnerships, with a regular rotation of international surgeons and medical personnel. The ultimate goal, though, was the eventual complete transfer of the facility to the Vietnamese whom they had trained.23

Construction of the Unit on the grounds of Cho Ray Hospital began in 1967 with a goal for completion in 1968, but the Tet Offensive delayed the project until 1969.20 In the interim, Barsky established a temporary unit to treat the underserved until the permanent structure was completed. With the approval of the South Vietnamese government, Barsky and Miller used several floors of an existing apartment building originally designed to house USAID workers to provide surgical care. The lower floors were converted to operating theaters, the visiting and local staff lived on the upper floors, and they constructed a 28-bed inpatient beds to house patients.23 The temporary Unit had a staff of 17 surgeons, anesthesiologists, pediatricians, and paramedical personnel from over 17 countries.²³

Barsky also enlisted the help of the International Rescue Committee to establish a separate facility for preoperative and postoperative triage. Staffed by a pediatrics team, the center provided preoperative nutritional and medical support for children, as well as postoperative physical rehabilitation and social work for patients. Once the permanent center was constructed, this independently run perioperative unit played a key role in assuring the efficiency of the permanent center. By the time the construction on the permanent Unit was completed in 1969, the temporary facility had been in operation about a year, and had 542 admissions with 682 operations.22

A PERMANENT CENTER

The CMRI Plastic and Reconstructive Surgical Center was opened in July 1969. It became the first permanent structure

dedicated to the reconstructive surgical care for the Vietnamese people and the only modern plastic surgical unit in the entire country. Dubbed the "Barsky Unit" by the South Vietnamese Ministry of Health, the complex housed 3 operating rooms, a recovery room, x-ray and pharmacy departments, and 54 dedicated surgical beds. 15 Combined with the convalescent center run by the IRC, the entire 164 surgical bed complex constituted what was perhaps the largest dedicated plastic surgical unit in the world at the time.²²

Commensurate with Barsky's mandate that the Unit becomes integrated into a locally run and staffed health network, he established a system of referrals that addressed the reconstructive surgical needs of children in both Saigon and in the remote countryside. Surgical cases were captured by a number of district screening clinics in over 29 provinces.²² Other locally run and internationally staffed hospitals in and around Saigon also referred patients for reconstructive surgery to the Barsky Unit.

As he had done with the temporary unit, Barsky maintained an insistence on running the unit and its collaborative educational campaign with an eye to eventual self-sustainability. Under his direction, the international surgeons and nurses were consistently reminded that quality should always supersede quantity, and that it was often better to do fewer operations to spend more time on teaching and on the transfer of surgical skill to the Vietnamese physicians.²³ To accomplish this task, Barsky recruited a rotating network of international consultants from over 17 countries to serve in the Unit for a period of 3 to 18 months.²⁴ Salary, accommodations, and travel expenses were largely covered by CMRI, with additional support from USAID and private philanthropy. 20,22,23 With the growing unpopularity of the war at home during 1968 to 1969, the US Government itself help fund humanitarian efforts like Barsky's as well, perhaps in an effort to put a more human face on the American war effort.

By December 1969, the clinical success of the new Unit was apparent. Collaboratively, the international and Vietnamese surgeons were performing over 50 surgical procedures for children each week. 15,20,23,25 Interestingly, most of the patients were not victims of the ongoing conflict, but rather presented with congenital anomalies and non-conflict-related acquired deformities that required reconstructive care. Some estimates suggest that close to 50% of all operations were provided for cleft disease, burns, and noma deformities.²² From 1969 to 1972, the Unit treated over 4000 children.26

Saigon fell to the advancing North Vietnamese forces on April 30, 1975. In the days that preceded the surrender, the city was attacked with heavy artillery and gunfire, and all nonessential personnel hurriedly evacuated or attempted to flee. Faced with fear of imprisonment and death, most foreign and Vietnamese employees in the Unit fled as well.27 The flight created a vacuum of trained surgeons and nurses at a time when volume was at its pinnacle. By April 1975, over 1200 children were being treated annually, there was a waiting list of over 400, and plans were being made to add a separate burn care unit. 15,27

With the general confusion of the war and the limitations in the accessibility of information in 1975, little was immediately known about the Unit's fate after the fall of Saigon. Barsky himself tried incessantly for years to get updates on the status of his facility and, more importantly, of the patients that remained under the Unit's care. He was largely unsuccessful. However, although all of the original Vietnamese surgeons were gone, many of the Vietnamese nursing and paramedical staff remained through the late 1970s and early 1980s. With assistance from Australian, Japanese, and Dutch surgeons, Vietnamese surgeons ultimately took over and ran the Unit's reconstructive services. By 1978, the Unit continued to serve the surgical needs of the country, with nearly 950 plastic surgical admissions.28

Today, in 2011, where the Barsky Unit once stood, a new building is currently being constructed that will house a separate operative and clinical facility for the treatment of children with cleft deformities. The original Barsky Unit building has been demolished, but Cho Ray Hospital remains the main plastic surgical referral center for all of Southern Vietnam. The facility has its own Vietnamese-staffed Department of Plastic Surgery, as well as a unit dedicated to the reconstructive care of burn patients.

LATER LIFE

After the fall of Saigon, Barsky continued to explore and develop his passion for addressing the plastic surgical needs for underserved children around the world. An aging surgeon in his 70s, Barsky conducted surveys in resource-poor areas from Africa to the Caribbean. In his own words, he remained "indelibly impressed by the enormous need for children's reconstructive surgery throughout the developing world."15

Dr Barsky died in Hospital de la Seyne-sur-Mer in southern France in 1982, and his work remains influential today for the field of global plastic surgery. In the late 1960s and early 1970s, projects on the scale of the Barsky Unit were unknown, and his Unit served as a true model during its years of operation. The lessons of its history continue to serve as a witness to the importance of Barsky's work.

IMPORTANCE AND IMPLICATIONS

Plastic and reconstructive surgeons had a significant history with international care and development before Barsky's work, but most of what was described in the early part of the twentieth century was individual experiences and case reports.29 There have been valuable efforts in delivering needed care to the world's underserved by many individuals and organizations over the last 50 years, and there were even other visiting plastic surgeons in Saigon during the 1960s in South Vietnam. ^{22,23,30} But Barsky remains particularly significant in the field of global plastic surgery because of the magnitude and scope of his projects.

Even in the early days of the Hiroshima Maidens project, Barsky focused on sustainability in his international efforts. In the 1950s, his insistence on creating collaborative partnerships with his Japanese colleagues not only fostered international goodwill during a time when doing so was particularly unpopular, but it also created an educational platform from which the Japanese could improve plastic surgical care in their own country. Likewise in Vietnam, Barsky's focus on sustainability was clearly evident in his educational approach. As he had with the Hiroshima Maidens project, Barsky wanted his Vietnamese colleagues to be "integrated as closely in the scheme as possible, so that [Vietnamese] counterparts will be able to take over the project completely when their training is completed."20

Vietnamese surgeons and nurses were placed at the Unit by the Ministry of Health for a period of 3 years, and through intensive educational efforts, they developed the knowledge and skill set necessary to deliver quality reconstructive surgical care themselves. 23 Part of that was because of Barsky's insistence on participation with all levels of the Vietnamese health care team, from students to nurses, to surgeons. Even in the temporary Unit, the project's main ethos was that of increasing self-reliance: Barsky clearly envisioned a day when international surgeons would no longer be needed to treat the reconstructive surgical needs of Vietnam's children. Indeed, the Unit began with a Western staff of 38, and there were just 4 remaining in the largely Vietnamese-run Unit by 1975. 15 A similar "lead from behind" mentality that focuses on eventual self-reliance has become increasingly dominant in global health efforts over the last decade, and it now is the barometric test for efforts in sustainable health systems strengthening.

CONCLUSIONS

As we continue to provide global surgical care in an evershrinking world, we are tasked to discover ways to integrate vertically based surgical programs into more horizontal health systems strengthening. In synchrony with a growing foundation of research-based knowledge, improved education and training of in-country personnel will continue to be the key to assuring a sustainable reduction in the burden of plastic surgical disease. Barsky understood this as early as the 1950s, and his efforts in global health reflected this appreciation. The ancient Chinese proverb by which he lived his life was inscribed, in English and Vietnamese, on the dedicatory plaque for the Barsky Unit in 1969: "It is better to light a candle than curse the darkness." In his biography of Pierre Franco, Barsky himself noted that "no century is self-contained,"31 and as we move forward in the development of global plastic surgery in this century, we would do well to remain mindful of the path that Arthur Barsky's candle lit.

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