

## PLASTIC AND RECONSTRUCTIVE SURGERY

### AT THE MGH

By Bradford Cannon, M.D.

Plastic surgery as we now picture it is not new in New England. In the late 19<sup>th</sup> century, Dr. Jonathan M. Warren wrote on cleft palate. In the early part of the 20<sup>th</sup> century, Dr. George Monks described a pedicle flap, Dr. William Ladd dealt with a host of congenital anomalies including facial clefts, and Dr. Ernest Daland used plastic and reconstructive methods after major cancer surgery. But it wasn't until 1922 when Dr. V.H. Kazanjian was given a joint appointment at the MGH and the Mass Eye & Ear, and the joint outpatient clinic was established that it became possible to recognize plastic surgery as an independent surgical specialty. Kazanjian limited his practice to deformities and trauma to the face and neck with an occasional release of joint contractures following deep burns.

Kazanjian had graduated from the Harvard Dental School in 1905. He remained with the School to care for the facial fractures referred to the School for treatment. He was thus well prepared to serve with the British Forces in Europe during WWI where he earned the accolade "The Miracle Worker on the Western Front" and was decorated by King George V. Trained as a dentist Kazanjian returned to Harvard to earn his MD degree in 1921. He was then appointed as noted above in 1922.

My first exposure to Plastic Surgery was at the MGH when, as a medical student, I watched Dr. Kazanjian reconstruct a nose with a forehead flap (the Indian method). Little did I anticipate my future relation with the MGH and my close association with Dr. Kazanjian as his successor.

Having spent my childhood in Cambridge and eight years at Harvard as an undergraduate and as a medical student, an experience elsewhere seemed appropriate. When I learned about an opening at Barnes Hospital in St. Louis, I submitted my application and was admitted as an intern. The training program at Barnes differed from that at the MGH. The intern moved through six special programs of two months each. My first was at the Shriner's Hospital for Crippled Children. There were many victims of poliomyelitis and patients with recent and late burns requiring skin grafting. It was here that I met my lifelong mentor and close friend, Dr. James Barrett Brown, who demonstrated skin grafting for burns in a most skilled fashion. Throughout the years of our association he was, as a teacher, willing to delegate a wide variety of responsibilities to trainees inspiring each trainee to outperform the teacher. He had the ability to get the best from younger men under his tutelage. These same characteristics were seen repeatedly during the four years we spent together during WWII.

After four years in the several specialties and serving one year as chief resident, I found that plastic and reconstructive surgery interested me the most. A position with the renowned St. Louis group headed by Dr. Vilray Blair was given to me. Eighteen months later, after an extraordinary learning experience, I realized that my future lay elsewhere. I returned to Boston in January 1940. Dr. Churchill appointed me Assistant in Surgery at the MGH, and I was also appointed at the Huntington Cancer Hospital near the Medical School.

Shortly after my return, Dr. Kazanjian under whom I worked at the MGH, and I were approached by Dr. Huber, head of the State Crippled Children, to learn whether we could help with the backlog of children under his program. I realized that the MGH was ill

prepared to accept a host of children with facial clefts, burn contractures, and assorted congenital deformities. We agreed that a Clinic started at the Mt. Auburn Hospital would be ideal. There was clinic outpatient space, a highly skilled pediatric ward.

The opportunity to have total care of these children, preoperative planning, the operation itself, and the immediate and late follow-up for me and my associates was a challenging opportunity which we accepted with eager anticipation. The program continued busy until I was drafted in 1943 and resumed for several years after my discharge from army service.

At the MGH I discovered that individual members of the surgical staff were assigned to be responsible for supervising certain areas or procedures; for example, Dr. Allen, the stomach and Dr. Linton, the vascular problems. I, therefore, applied for the assignment on burns. I found that burns were treated by the topical application of tannic acid powder with an atomizer. Tannic acid powder and triple dye (methylene blue, gentian violet, and brilliant green) were in common use in Boston hospitals.

Oliver Cope suggested that I investigate the healing benefits of these recommended applications. A skin graft donor surface was used for the test. The graft was cut with a mechanical dermatome to insure uniform depth of cut. The raw donor area was divided into three sections with the central third covered with fine meshed gauze impregnated with a bland ointment. The two test agents were applied at the end thirds. It was obvious that the topical agents were injurious if they came in contact with the unprotected dermis and its intact epithelial cells. Healing took from three to four weeks. Interesting was the observation that if the blood was allowed to clot and was not sponged away, the healing took place as with the control since the cells in the dermis were protected by the blood clot.

It was rumored that as a result of our findings the armed forces disposed of a considerable amount of tannic acid collected in anticipation of burns in modern warfare. During my four Army years I encountered no instance of tannic acid use for burns.

Only a few months after our study was completed the Coconut Grove fire (Thanksgiving 1942) occurred and there was no mention of tannic acid. The night of the fire, I reported to the higher ups that there were a significant number of victims with deep burns that would require care for several weeks or more and that preparations should be made for their care. I was told that there were no deep burns. The reason for the confusion was that carbon monoxide combines with hemoglobin creating a bright red color. The victims of carbon monoxide poisoning are the picture of health but the color is fixed in the burned skin and fails to blanch on pressure.

After any pulmonary injury had been evaluated and fluid needs stabilized, the survivors were in need of surface care, debridement and repair with skin grafts. I was the only member of the staff with considerable experience in the treatment of deep surface burns and the preparation for skin grafting. Dr. Churchill recognized this and promptly gave me the assignment. The sunroom on White 6 was converted to a dressing room with all necessary supplies, light anesthesia if needed, and photographic recording. I was eager to take the opportunity to prove my worth.

At the same time the military draft board was after me but my induction was postponed until early April 1943 when I was ordered to Valley Forge General Hospital in Pennsylvania. By that time the fire victims were healed with successful split skin grafts.

I returned to the MGH in 1947 after four extraordinary years at (PLASTIC SURG continued on page 16)

**(PLASTIC SURG** continued from page 5)

Valley Forge General Hospital, the Army's east coast major Plastic Center. Many opportunities to apply that experience in civilian practice developed. For example, by attending Fracture Rounds weekly, it became apparent that the importance of the skin closure held secondary place to the accuracy of the fracture reduction. By applying plastic techniques to compound extremity wounds in conjunction with fracture reduction, solid healing with good blood supply for the healing process was assured. Delayed primary closure as well as local and remote flaps were chosen in both early and late compound injuries with singular success. The "fracture group" was soon convinced.

The principle involved here is that deep healing of both bone and soft tissue can be no better than the skin cover with its adequate blood supply.

The plastic clinic for crippled children was reactivated only to be transferred to the New England Medical Center a few years later where it was managed by Michael Lewis, a member of our team at the MGH. Later our residents were afforded opportunities in Lewis' program.

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(PLASTIC SURG continued from page 16)

In the early 1950s Dr. Joseph Murray, who had been with us in the Army and had just fulfilled the Board requirements, joined me in my Back Bay office. We both had dreams of a joint Brigham/MGH Plastic Program. Dr. Murray was active at the Brigham/Children's earning recognition for plastic surgery and continuing his laboratory and clinical studies on tissue transplantation for which he was awarded the Nobel Prize in 1990. We remained together until I moved to the Warren Building and he to the Brigham Hospital office.

There were frequent calls from physicians and surgeons in suburban hospitals for help in dealing with acute injuries, burns, facial lacerations and fractures, and compound extremity fractures. The consultations involved travel but it was essential that they responded to them.

Not until July 1960 was there recognition of the special features of plastic surgery. At that time John D. Constable, a skilled and imaginative surgeon, who had served as the general surgical resident (1959), was appointed as my associate, and two surgical residents were assigned to the Plastic Clinic to work on the wards and with private patients for a two-month period. During the next 15 years, 23 of these surgical residents chose to specialize in plastic surgery but had to go elsewhere to obtain formal training before being certified by the American Board of Plastic Surgery. Others continuing in general surgery or other surgical specialties have reported that the exposure to plastic surgical principles and methods has proven useful in their later practice.

Obviously the only way to avoid this loss of talent was to establish a residency at the MGH. This program was finally realized in 1970 and the first resident in plastic surgery served from July 1971 to June 1972.

In 1973 I reached the retirement age, and I was succeeded by John Remensnyder who carried on most admirably directing the plastic service and acting as an able leader in his selection of outstanding residents for the program.

Remensnyder's tenure continued until 1982 when James May, one of our early residents, succeeded him. May has proved a most capable "chief" with his sound general thinking. His contributions in hand surgery, microsurgery and replantation of amputated parts have been recognized as outstanding.

On looking through the list of over 28 past MGH plastic residents in the first two decades of the program, one cannot fail to be impressed with the positions each has assumed in his or her respective communities. Some have stayed in the New England communities where Boston consultants are no longer called. Others have moved far away reporting their successes by correspondence or at annual meetings. All, we can report proudly, have demonstrated the quality of their training as the evidence of the respect in which they are held.

In the late 80s and early 90s informal temporary exchanges were arranged between the MGH and the Brigham/Children's plastic programs to fill in gaps that may exist in either program. These exchanges led to discussions of a joint permanent program with both institutions, a program that was established in 1994 and has continued most successfully ever since. Rounds have been scheduled mid-week at the Shriner's Auditorium for discussion of various subjects and presentation of cases. Two lectureships honor two of our distinguished predecessors: Dr. George Monks at the Brigham and Dr. V.H. Kazanjian at the MGH.

The program that Dr. Murray and I envisioned years before has become a reality, and today the Brigham/Children's/MGH training program is considered one of the best.

Currently the active staff at the MGH consists of the following:

"Chief, James W. May Jr.*	W. Gerald Austen Jr.*
John Constable*	Mathias Donelan*
Gregory Gallico*	Michael Lewis
Jonathan Winograd*	Michael Yaremchuk

\*Alumni of the MGH Program

## CONCLUSION

Plastic surgery has no anatomical area to which it can lay claim. To have played a part in the acceptance at the MGH of this bizarre specialty has been most gratifying. It is a specialty of principles and techniques evolved and perfected by plastic surgeons and then returned to the mainstream of surgery. Examples include the use of the skin flaps and skin grafts to close open wounds assuring protection and adequate blood supply to the healing structures beneath, the accurate and refined closure of acute lacerations to minimize conspicuous scars and stitch marks, and ubiquitous use of free skin grafts for the prompt closure of wound with skin loss.

To both lay and professional persons the term "plastic surgery" implies "interfering with nature". Yet, such surgery in proper hands can give great satisfaction. For example: lop ears, sagging face, large prominent nose, or massive breast development. This is why I prefer to combine "Plastic and Reconstructive" as a title in publications and programs.

*(Editor's note: Bradford Cannon graduated from HMS in 1933. His father was the famous physiology professor there. Because he had always been in the Boston area Brad took his surgical training at Barnes Hospital in St. Louis. There he served under James Barrett Brown and Vilray Blair, two outstanding plastic surgeons who were largely responsible for his decision to become a plastic surgeon.*

*Brad returned to Boston in 1940. He assisted V.H. Kazanjian in the Plastic Clinic and then became the Chief in 1941. Because of his experience with plastic techniques he played a critical role in the care of the patients in the Coconut Grove Fire in 1942.*

*He was drafted in the Army in 1943 and served four years at Valley Forge General Hospital, the major east coast Army center for plastic and reconstructive surgery. Brad was the chief of the plastic services there for his last two years and received the Legion of Merit decoration for his military service.*

*When Brad returned to the MGH from the Army there was no plastic service. He built up a plastic and reconstructive practice. Joe Murray joined him in the 50s and a plastic fellowship was begun at the MGH in 1960. This evolved into an approved residency in 1970, and Brad was made chief of the plastic unit then. He reached retirement age in 1973 Brad is very proud of the residency which became a joint program with the Brigham and Children's in 1994.*

*Two of his many awards are the presidency of the American Association of Plastic Surgeons and a founding member of the American Society for Surgery of the Hand. One of his personal favorites is his 60 year MGH pin which he received in 2000. We believe he's good for another 60.) ♦*

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