Robert J. Gorlin, 1923–2006: Evolution of His Phenotype

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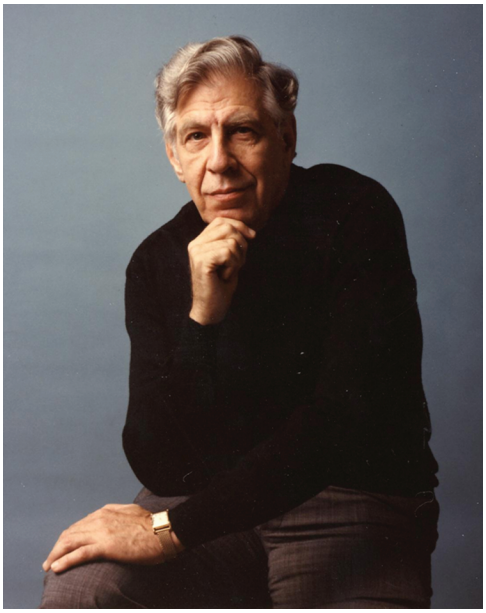

Bob Gorlin as he appeared in 1993[3]

Previously, I published an extensive remembrance of Robert J. Gorlin,[1] in which I discussed not only his many accomplishments and his awards, but also his engaging way with people, his warm approach to patients, and his modesty. This article has a different focus, although a few portions from my other remembrance[1] are repeated here. With Bob, an obvious question from those who didn't know him is, "How did a trained dentist become the second most cited clinical geneticist in the entire world?" How did his "phenotype" evolve? Only Victor McKusick has more citations than Bob Gorlin.[2]

After receiving his A.B. degree in 1943 from Columbia University in three years, he volunteered for the Army, since he would most certainly have been drafted during the Second World War. Basic training took place at the Army Specialized Training Program at Texas A & M. There, the sergeant in charge asked inductees who had taken zoology; he indicated that so many men had been drafted that schools of medicine, dentistry, and veterinary medicine needed applicants. Bob was given a form to fill out for Washington Dental School in St. Louis. He was graduated in 1947.[3]

At dental school, Bob was mentored by Dr. Barnet Levy, who directed Bob's attention to fellowship programs for graduate education in pathology. Bob was accepted to both available fellowship programs and chose the one at Columbia Presbyterian Medical Center. Dr. Daniel Ziskin, another mentor, convinced him that he could help develop the budding field of oral pathology. Under various auspices, Bob stayed on at Columbia Presbyterian from 1947–1951. For a year, he split his time as an Instructor in Medical Pathology there and also as an Oral Pathologist at the Bronx VA Hospital. He viewed his future with a jaundiced eye because he had not seen a single advertisement for a permanent oral pathology job.[3]

The Dean of Columbia Dental School then directed Bob's attention to a dental service job at some undesignated overseas site. It turned out to be Operation Blue Jay, whose mission was to create the DEW line, a circumpolar group of radar bases that would give early warning to the United States and Canada in case Russian planes were to attack over the North Pole.[3]

Bob then spent time in Rosemount, Minnesota, based on aid provided by Dean William Crawford of the University of Minnesota Dental School. Together with a group of young dental faculty members, they put 10,000 construction workers in reasonable dental shape for their stay in Greenland. Bob then worked as a dentist in Thule,

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Greenland beginning in 1951. Eventually he developed type A hepatitis and was sent back to the Bronx VA hospital for three months of hospitalization because of stubbornly lagged liver functions.[3]

Following Bob's discharge from the hospital, he was married, poor, and without a job. His dental school mentor Dr. Barnet Levy suggested he contact Dr. Alton Fisher at the University of Iowa. He was hired on the spot for $5,000 at Iowa. While Bob was teaching, he also enrolled for an M.S. degree in physical organic chemistry.[3] Many years later, he joked that his degree in physical organic kinetics was of great relevance to his career as a syndromologist!

Just before he received his M.S. degree, Bob was drafted back into the service because previously he had served *one month less* than the required two years in the Army during World War II. He was posted to the Great Lakes Naval Training Station as a dentist. There, he was looked at askance because of his *un-Naval-like behavior as a Dental Officer*. He practiced dentistry in his stocking feet and developed his own nomenclature for dental instruments. For example, to a dental assistant, he said, "Pookie, would you hand me a double bombo for this single frackle?" Clearly, a typical Naval Dental Officer he wasn't, so Bob wound up in the Navy court system prosecuting, defending, and judging "crimes" such as "being AWOL, bringing 3.2 beer aboard base, being caught in the sack with a WAVE, and failing to obey the order of a noncom." Since Bob set the docket, he attended court every other day and spent the rest of his time making furniture in the hobby shop.[3]

Bob had started to look for jobs earlier while he was completing his M.S. degree. He had several possibilities. At a southern dental school, which in this article will remain unnamed, the Dental Dean offered him a job, saying, "You'll be our token Jew, Gorlin." "No sir," Bob replied, "I'll be your token ex-candidate" and he left.[3] In 1956, he accepted an offer at the University of Minnesota Dental School for an $8,800 salary and an appointment as Associate Professor and Chairman of Oral Pathology.[3]

While Bob was assuming his oral pathology duties at Minnesota, the role he eventually played as a syndromologist evolved gradually over time. He made friends easily in pathology, dermatology, and pediatrics. Bob's extensive training in pathology eventually led to many publications in that field. His interest in oral pathology and his knowledge of mucocutanous disorders led to many publications in dermatology as well.[1] Finally, he delineated numerous, newly recognized malformation syndromes in pediatric patients.

Bob was often asked if he had any difficulty storming a traditionally medical bastion. Elsewhere,[3] he indicated that he was able to accomplish more because he was not a physician and never threatened anyone's turf. That commonly involved economic wherewithal, and Bob earned his living as an oral pathologist; he never received remuneration for the many patients he diagnosed with multiple abnormalies.

Bob became a Regents' Professor at the University of Minnesota in 1978. He was one of 15 to be so honored among 1,500 university professors. He held multiple appointments there as Professor of Oral Pathology, Pediatrics, Dermatology, Pathology, Obstetrics and Gynecology, and Otolaryngology.[1] He was a very prolific writer. By 2004, he had amassed over 600 articles, 60 book chapters, and had coauthored or edited 20 books, some of which have been translated into Spanish, Russian, and Japanese.[4] *Syndromes of the Head and Neck* was also translated into Chinese.

Bob's name has become inseparably linked to the nevoid basal cell carcinoma syndrome. The condition first became known throughout Europe as Gorlin syndrome and later the eponym spread worldwide because of Bob's original delineation of the syndrome and his many contributions to its understanding.[1] One young man was working in a pet store and was bitten by a cobra. He was rushed on a motorbike that crashed into a truck on the way to the city hospital emergency room and suffered a broken femoral neck.[3] To make a long story short, he was the first patient with Gorlin syndrome to present at a hospital ER with the "cobra/femoral neck syndrome."

Gorlin syndrome is caused by *PTCH* mutations (*PTCH* maps to 9p22.3). More than 50 different findings of variable frequencies have been reported in Gorlin syndrome. About 25% of patients have ovarian fibromas, most commonly bilateral.[1] In a review of Gorlin syndrome, Sydney Gellis, the Dean of Academic Pediatrics and Editor of the Yearbook of Pediatrics in an earlier era, noting the presence of ovarian fibromas in the syndrome observed:

> We cannot pass up the opportunity to express our admiration for Dr. Gorlin. A dentist by training, he roams freely and scientifically through the fields of medicine and genetics, as well as dentistry. When he gets down to the ovaries, he's gone about as far as he can go.[5]

My other remembrance of Bob's accomplishments includes a table with a list of 46 syndromes that he first recognized.[1,6,7] To date, 14 of these have a known molecular basis and 4 others have been mapped to specific chromosomal regions.[1]

In addition to Gorlin syndrome, Bob was also the first to describe otopalatodigital syndrome I, otopalatodigital syndrome II, frontometaphyseal dysplasia, and male Melnick-Needles syndrome.[3] Later, he noted some similarities between them, such as supraorbital ridging and other features. Today, all four disorders are known to be caused by *FLNA* mutations (*FLNA* maps to Xp28).[1]

Robert J. Gorlin was truly a man for all seasons. No doubt, Bob's academic legacy will be carried on by the many clinicians and scientists around the world who were influenced by him. The memories and stories about him

will persist for generations. He will be greatly missed by all those whose lives he touched.[1]

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