

# The Origin of the 42-Year Stonewall of Vitamin C

Robert Landwehr<sup>1</sup>

In the late spring of 1949 the United States was in the grip of its worst poliomyelitis epidemic ever. On June 10 a paper on ways to save the lives of bulbar polio victims was read at the Annual Session of the American Medical Association (subsequently printed in its journal, *JAMA*, September 3, 1949, pages 1-8, volume 141, no. 1). Following the talk members of the audience were invited to comment. The first speaker, a leading authority from Pasadena, focused on details of tracheotomy techniques caused when paralyzed breathing, swallowing and coughing muscles of victims threatened their lives. Why the next person was recognized is puzzling. The only national recognition he had received — and it was obviously very limited — was that his picture appeared in *Ebony* in 1947 for having delivered of a deaf-mute black woman the first known surviving, identical quadruplets in the country. Here is the abstract of his remarks as recorded in *JAMA*:

"Dr. F. R. Klenner, Reidsville, N.C.: It might be interesting to learn how poliomyelitis was treated in Reidsville, N.C., during the 1948 epidemic. In the past seven years, virus infections have been treated and cured in a period of seventy-two hours by the employment of massive frequent injections of ascorbic acid, or vitamin C. I believe that if vitamin C in these massive doses — 6,000 to 20,000 mg in a twenty-four hour period — is given to these patients with poliomyelitis none will be paralyzed and there will be no further maiming or epidemics of poliomyelitis."

The discussion period was, of course, to be devoted to hearing relevant comments of the world's leading authorities on the treatment of bulbar polio symptoms, not

to airing another claim of a cure. One can imagine the silence that must have greeted this sweeping, out-of-place declaration by a small-town general practitioner. Four other speakers, three more bulbar experts and an anesthesiologist, followed. None referred to Dr. Klenner's remarks.

The empirical, clinical basis for Klenner's statement is found in his paper "The Treatment of Poliomyelitis and Other Virus Diseases with Vitamin C", published in the July 1949 issue of the *Journal of Southern Medicine and Surgery*. On pages 211-212 he writes:

"In the poliomyelitis epidemic in North Carolina in 1948, 60 cases of this disease came under our care. These patients presented all or almost all of these signs and symptoms: Fever of 101 to 104.6°, headache, pain at the back of the eyes, conjunctivitis, scarlet throat; pain between the shoulders, the back of the neck, one or more extremity, the lumbar back; nausea, vomiting and constipation. In 15 of these cases the diagnosis was confirmed by lumbar puncture; the cell count ranging from 33 to 125. Eight had been in contact with a proven case; two of this group received spinal taps. Examination of the spinal fluid was not carried out in others for the reasons: (1) Flexner and Amoss had warned that 'simple lumbar puncture attended with even very slight hemorrhage opens the way for the passage of the virus from the blood into the central nervous system and thus promotes infection.' (2) A patient presenting all or almost all of the above signs and symptoms during an epidemic of poliomyelitis must be considered infected with this virus. (3) Routine lumbar puncture would have made it obligatory to report each case as diagnosed to the health authorities. This would have deprived myself of valuable clinical material and the patients of most valuable therapy, since they would have been removed to a

1. 1250 Grizzly Peak, Berkeley, CA 94708.

receiving center in a nearby town.

The treatment employed was vitamin C in massive doses. It was given like any other antibiotic every two to four hours. The initial dose was 1,000 to 2,000 mg, depending on age. Children up to four years received the injections intramuscularly. Since laboratory facilities for whole blood and urine determinations of the concentration of vitamin C were not available, the temperature curve was adopted as the guide for additional medication. The rectal temperature was recorded every two hours. No temperature response after the second hour was taken to indicate the second 1,000 or 2,000 mg. If there was a drop in fever after two hours, two more hours was allowed before the second dose. This schedule was followed for 24 hours. After this time the fever was consistently down, so the drug was given 1,000 to 2,000 mg every six hours for the next 48 hours. All patients were clinically well after 72 hours. After three patients had a relapse the drug was continued for at least 48 hours longer — 1,000 to 2,000 mg every eight to 12 hours. Where spinal taps were performed, it was the rule to find a reversion of the fluid to normal after the second day of treatment.

For patients treated in the home the dose schedule was 2,000 mg by needle every six hours, supplemented by 1,000 to 2,000 mg every two hours by mouth. The tablet was crushed and dissolved in fruit juice. All of the natural "C" in fruit juice is taken up by the body; this made us expect catalytic action from this medium. Rutin, 20 mg, was used with vitamin C by mouth in a few cases, instead of the fruit juice. Hawley and others have shown that vitamin C taken by mouth will show its peak of excretion in the urine in from four to six hours. Intravenous administration produces this peak in from one to three hours. By this route, however, the concentration in the blood is raised so suddenly that a transitory overflow into the urine results before the tissues are saturated. Some authorities suggest that the subcutaneous method is the most conservative in terms of vitamin C loss, but this factor is overwhelmingly neutralized by the factor of pain inflicted.

Two patients in this series of 60 regurgi-

tated fluid through the nose. This was interpreted as representing the dangerous bulbar type. For a patient in this category postural drainage, oxygen administration, in some cases tracheotomy, needs to be instituted, until the vitamin C has had sufficient time to work — in our experience 36 hours. Failure to recognize this factor might sacrifice the chance of recovery. With these precautions taken, every patient of the series recovered uneventfully within three to five days."

This paper is quoted at length to allow readers to judge for themselves whether or not Dr. Klenner made up all these details. In subsequent publications he gave details about curing life-threatening polio cases, and described his general procedures in his paper "The Vitamin and Massage Treatment for Acute Poliomyelitis", appearing in the *Journal of Southern Medicine and Surgery* in August, 1952.

One of the reasons why Klenner's declaration at the AMA annual session was undoubtedly met with silence was that since 1939 polio experts were quite certain that vitamin C was not effective against polio. There seemed little doubt that Dr. Albert B. Sabin, a highly respected figure in medical research even before he developed his successful vaccines, had demonstrated that vitamin C had no value in combatting polio viruses. In 1939 he published a paper showing that vitamin C had no effect in preventing paralysis in rhesus monkeys experimentally infected with a strain of polio virus. He had tried to corroborate the work of Dr. Claus W. Jungeblut, another highly respected medical researcher, who had published in 1935 and 1937 papers indicating that vitamin C might be of benefit. Sabin could not reproduce Jungeblut's results even though he consulted Jungeblut during the course of the experiments. It seemed to be a fair trial, and Sabin's negative results virtually ended experiments with vitamin C and polio.

How then could a Dr. Fred R. Klenner, a virtually unknown general practitioner specializing in diseases of the chest, from a town no one ever heard of, with no national credentials, no research grants and no experimental laboratory, have the nerve to make his sweeping claim in front of that

prestigious body of polio authorities?

Around 1942 Klenner's wife suffered bleeding gums and her dentist recommended pulling out all her teeth. Dr. Klenner thought that solution too Draconian and remembered reading about research using vitamin C to cure chimpanzees with a similar problem. He gave her several injections of the vitamin and the bleeding stopped. Soon after, this dramatic result encouraged him to try vitamin C on an obstinate man who was near death from viral pneumonia. Klenner described this seminal experience in a 1953 paper "The Use of Vitamin C as an Antibiotic":

"Our interest with vitamin C against the virus organism began ten years ago in a modest rural home. Here a patient who was receiving symptomatic treatment for virus pneumonia had suddenly developed cyanosis. He refused hospitalization for supportive oxygen therapy. X-Ray had not been considered because of its dubious value and because the nearest department equipped to give such treatment was 69 miles distant. Two grams of vitamin C was given intramuscularly with the hope that the anaerobic condition existing in the tissues would be relieved by the catalytic action of vitamin C acting as a gas transport aiding cellular respiration. This was an old idea; the important factor being that it worked. Within 30 minutes after giving the drug (which was carried in my medical bag for the treatment of diarrhea in children) the characteristic breathing and slate-like color had cleared. Returning six hours later, at eight in the evening, the patient was found sitting over the edge of his bed enjoying a late dinner. Strangely enough his fever was three degrees less than it was at 2 p.m. that same afternoon. This sudden change in the condition of the patient led us to suspect that vitamin C was playing a role of far greater significance than that of a simple respiratory catalyst. A second injection of one gram of vitamin C was administered, by the same route, on this visit and then subsequently at six hour intervals for the next three days. This patient was clinically well after 36 hours of chemotherapy. From this casual observation we have been able to assemble sufficient clinical evidence to

prove unequivocally that vitamin C is the antibiotic of choice in the handling of all types of virus diseases. Furthermore it is a major adjuvant in the treatment of all other infectious diseases."

Again this paper is quoted at length to allow readers to judge for themselves whether or not the author made this up or deluded himself in some way. From 1943 through 1947 Dr. Klenner reported successful treatment of 41 more cases of viral pneumonia using massive doses of vitamin C. From these cases he learned what dosage and route of administration — intravenously, intramuscularly, or orally — was best for each patient. Dr. Klenner gave these details in a February 1948 paper published in the *Journal of Southern Medicine and Surgery* entitled "Virus Pneumonia and Its Treatment with Vitamin C". This article was the first of Dr. Klenner's twenty-eight (through 1974) scientific publications.

Klenner realized, of course, that vitamin C's effectiveness with viral pneumonia opened up the possibility of curing other viral diseases. "With a great deal of enthusiasm," in Klenner's phrase, he tried its effectiveness with all of the childhood diseases, particularly measles. By the spring of 1948, when a measles epidemic came to Reidsville, Klenner was so confident of vitamin C's efficacy with these diseases that he devised what would ordinarily be an outrageous experiment with his two little daughters. He had them play with children known to be in the contagious phase of measles. When the usual syndrome of measles had developed and his daughters were obviously sick, vitamin C was started. Again Klenner's words from his 1953 paper:

"In this experiment it was found that 1,000 mg every four hours, by mouth, would modify the attack. Smaller doses allowed the disease to progress. When 1,000 mg was given every 2 hours all evidence of the infection cleared in 48 hours. If the drug was then discontinued for a similar period (48 hours) the above syndrome returned. We observed this off and on picture for thirty days at which time the drug (vitamin C) was given 1,000 mg every 2 hours around the clock for four days. This time the picture cleared and did

not return."

With this background of experiences — with human beings, not experimental animals — Klenner gained confidence in and control over his vitamin C treatment. One reason he turned his attention early to treating measles was that he knew that measles viruses were about as small as polio viruses and he hoped massive doses of vitamin C would be effective against the dreaded Crippler. By 1948 he was ready to treat polio with vitamin C, and in that year North Carolina suffered its worst epidemic ever — 2,518 new cases. Dr. Klenner's hopes were realized when, as has been related above, he cured sixty patients with massive frequent injections of vitamin C.

With seven years of experience behind him one can understand not only why Dr. Klenner had the nerve to speak up on June 10, 1949 but why he undoubtedly felt morally obligated to do so.

After 1949 polio epidemics continued to take their terrible toll. The peak year for The Crippler in the U.S. was 1952 — 57,628 cases. During the 1950s isolated doctors around the world tried Klenner's cure. Those who used vitamin C at doses below those recommended by Klenner reported no benefit; those who followed his dosages reported good results. Dr. H. Bauer of the University of Switzerland Clinic, Basel in 1952 reported benefits to his polio patients with 10 to 20 grams of vitamin C per day. Dr. Edward Greer, using doses in Klenner's recommended range of 50 to 80 grams per day, recorded in 1955 good clinical results with five serious cases of polio. Dr. Abram Hoffer recalls that a controlled study, conducted in Great Britain in the late 50s with 70 young polio victims, confirmed Klenner's cure. All those given vitamin C recovered completely, while a significant number of those not given vitamin C suffered some permanent damage. (This study was not published because of the success of the polio vaccines.) Dr. Klenner himself reported that he received scores of letters from doctors in the U.S. and Canada corroborating his striking results. Some of the letters described how they cured their own children, others, how the doctors had cured themselves.

What kind of reception did Dr. Klenner's discoveries receive from the medical establishment? There are two references to Klenner's 1949 paper in national, mainstream publications. The title of that paper was included in the October 7, 1949 issue of the *Current List of Medical Literature*, published by the U.S. Army Medical Library. The paper was also included in the second edition of *A Bibliography of Infantile Paralysis — 1789-1949*, published in 1951 and prepared under the direction of the National Foundation for Infantile Paralysis. Instead of abstracting the paper in the usual manner, it printed only Dr. Klenner's last paragraph, which was not a summary but an obvious rhetorical statement Klenner felt necessary to counter the skepticism he knew would greet his quick, inexpensive cures. Other than these two references, mainstream medical publications made no mention of Klenner and his work. One of *JAMA's* regular departments was Current Medical Literature, in which its editors abstracted papers they considered of special note. Many polio papers were abstracted in 1949, but not Klenner's.

The National Foundation for Infantile Paralysis was founded in 1938 by polio's most famous victim, President Franklin Roosevelt, to raise money through the March of Dimes to combat the disease. Most polio research was funded by the National Foundation. There is no mention of Dr. Klenner's work or of vitamin C's possible benefits to polio victims in any of the Foundation's annual reports. Not one dime was spent to prove or disprove Klenner's claim. Before 1949 a claim of a cure was promptly looked into and money spent until it was proved false. But with Klenner's claim nothing happened.

It was certainly not for lack of research funds that nothing happened. John M. Russell, in the 1960 book *The Crisis in American Medicine*, edited by Marion K. Sanders, described the glut and waste of money for medical research in the 1950s. Russell points out that the public clamor for a cure for polio was so great that in 1954 Congress appropriated \$1,000,000 specifically earmarked for polio research. It turned out that there was so much polio money floating around that the recipient of this largess, the U.S. Public Health

Service, classified such unlikely diseases as hepatitis as "poliolike" so that none of this money would have to be returned to the U.S. taxpayer.

Five International Poliomyelitis Conferences were convened every three years from 1948 to 1960 to deal with the polio epidemics around the world. In all of the voluminous reports of these conferences there is no reference to Klenner or to vitamin C. Only the first congress dealt briefly with the possible effect of nutrition, and this was dismissed by the statement of an expert "that no clinical evidence is known to me which justifies an increase in intake of vitamins beyond usual recommended allowances".

Thus in 1949 the polio experts at the Annual Session of the AMA knew of Klenner's claim, as did the many readers of *JAMA's* lead article of its September 3 issue, the many researchers who used the National Foundation's *Bibliography*, those that kept up with the titles in the *Current List of Medical Literature*, and the relatively few readers of the *Journal of Southern Medicine and Surgery*. All this exposure led to no official inquiry or follow-up of Dr. Klenner's work by U.S. government health authorities or the National Foundation. No one in authority anywhere stepped forward to insist that it be checked out. The strategy of medical leaders — conscious or unconscious, planned or unplanned — was clearly to ignore Dr. Klenner and hope his claims would be forgotten.

It worked. Klenner's cure never became well known and today has sunk almost into oblivion. A synopsis of polio infection and research by Ernest Kovacs entitled "The Biochemistry of Poliomyelitis Viruses", published in 1964, makes no reference to Klenner. In 1985 Friedrich Koch and Gebhard Kock published *The Molecular Biology of Poliovirus*. It contains in its opening chapter a history of the disease, but it says nothing about Klenner, or even about the extensive vitamin C research done by Drs. Jungeblut and Sabin with monkeys in the 30s. It's as though polio-vitamin C research never happened.

To this day it is mainstream medicine's position that there is no cure for polio. The Encyclopedia American quotes

Richard W. Price of Memorial Sloan-Kettering Cancer Center of New York City: "No specific treatment is effective once neurological involvement becomes manifest." A thoroughly exasperated Klenner concluded a February 1959 paper in the *Tri-State Medical Journal* with these words:

"Should the disease be present in the acute form, ascorbic acid given in proper amounts around the clock, both by mouth and needle, will bring about a rapid recovery. We believe that ascorbic acid must be given by needle in amounts from 250 mg to 400 mg per kg body weight every 4 to 6 hours for 48 hours and then every 8 to 12 hours. The dose by mouth is the dose that can be tolerated. To those who say that Polio is without cure, I say that they lie. Polio in the acute form can be cured in 96 hours or less. I beg of someone in authority to try it."

Today there are areas of the world where polio vaccine is still not used and where the incidence of polio is increasing. Polio remains The Crippler, and the only effort of the World Health Organization is to increase vaccination. The leading medical authorities — the editors of the leading journals, the heads of the AMA and the National Foundation, U.S. Surgeons-General and the heads of other U.S. governmental health agencies — were, and are, responsible for stonewalling for 42 years Dr. Klenner's simple, inexpensive cure for many viral diseases, including the dreaded polio.

1949 — a year in medicine which will live in infamy.