

Biography and bibliography



Professor IGNASI PONSETI I VIVES (1914–2009)*

Ignasi Ponseti i Vives, pioneer in pediatric orthopedics and the inventor of the Ponseti Method for the treatment of clubfeet, was born on 3 June 1914, in Ciutadella, Minorca, one of the Balearic Islands. His father, a watchmaker by trade, was from Palma de Mallorca but his mother's family had lived in Minorca for generations. When he was three his father's jewelry business was not doing well and the family decided to move to Mallorca. One of Dr Ponseti's earliest recollections was the panic caused by the flu epidemic of 1918–1919 and the little bonfires built on the streets to purify the atmosphere. He was sent to primary school at six. It was a traumatic experience. Classes were in Spanish, a language he did not understand, yet he spoke a language—Catalan—he did not read or write. What a paradox! He overcame this linguistic confusion by devoting his efforts to the universal language of mathematics.

When he was eight, the family moved again, this time to Barcelona. They rented an apartment on Llibreteria street, near St. Jaume square and what was at that time the center of a thriving city, both economically and intellectually. At eleven he began his secondary studies—a seven-year program in those days—at one of the best public high schools in the city, the *Institut Balmes*. One of his classmates was Ernesto Corominas, who was to become a professor of mathematics of international renown at the University of Lyon in France. Dr. Ponseti would spend the summers working at his father's shop repairing watches, where he learned to handle the file and the lathe

with great precision, a skill that would later contribute to his abilities as a surgeon. He finished top in his class, and as a result the first year entrance fee at the School of Medicine (University of Barcelona) was remitted. The following year he received a scholarship from the city, which also came in handy.

His favorite subject was biology. He especially enjoyed dissecting animal and vegetable tissues, making histological cuts of frog brains, dyeing them and analyzing them under the microscope. These studies were basic later for his biological focus in medicine and his many contributions to the pathology of skeletal growth disorders in children, in particular, the biomechanics of the clubfoot deformity.

On 17 July 1936, at the age of twenty-two, Ignasi Ponseti took his final exams. The next day the Spanish Civil War broke out and within a week he found himself mobilized and assigned to the team working under Dr. Jimeno Vidal at the Pedro Mata Hospital in Reus (province of Tarragona). Vidal had studied under the Austrian surgeon Lorenz Böhler—creator of modern accident surgery—in Vienna and had ample experience. Vidal also practiced a technique to treat wounds developed by the American orthopedic surgeon Winnett Orr during World War I, and improved further by Josep Trueta in Barcelona. The technique consisted of a thorough cleansing of the wound rather than the use of antiseptics. Instead of suturing wounds, fractures were set and immobilized with plaster-soaked bandages that would harden quickly. This was revolutionary. Although penicillin had been discovered, it was not administered to humans until 1941 and infection and gangrene were the most dreaded consequences of a broken limb. It is calculated that between 1936 and 1939 Vidal's

* Frances Luttikhuisen. Independent scholar. E-mail: fluttikhuisen@telefonica.net

team treated some 4000 wounds and fractures with hardly any failures or amputations.

In 1938, after the Battle of the Ebro, the longest and bloodiest battle of the Spanish Civil War, Ponseti was transferred to Barcelona to work with Adolfo Ley Garcia, a neurosurgeon who had just recently returned from the United States where he had studied under Percival Bailey at Chicago and Harvey Cushing at Boston. Under professor Ley, Ponseti learned to perform nerve sutures as well as tendon transfers, but soon a promising career in neurosurgery was cut short. Franco's troops were advancing and the wounded had to be evacuated. Ponseti—along with Dr. Josep Trueta and others—took an active part in this. He was assigned a large ambulance and a driver to transport men from the military hospital at Olot (some 10 miles from the French border) to Prats de Molló, on the French side of the Pyrenees. They drove all night and arrived in Olot shortly after dawn. There was a nice fire burning in the fireplace in the front hall of the hospital and Ponseti decided they should rest a while before continuing. He was so exhausted that he fell asleep. When he awoke an hour later to his great surprise both the driver and the ambulance had vanished. Left without transportation, he had to resort to private cars and drivers who were willing to take them part way up the mountains. From there, with the help of local smugglers Ponseti managed to take the injured—some on mules and some on makeshift crutches—over the Pyrenees into France. It took him three days to get all his men safely there.

At Prats de Molló they were first accommodated in City Hall under the vigilance of a young French doctor from Montpellier. One night Ponseti, not pleased with the medical treatment his men were getting, secretly drained an abscess. The following day the young French doctor found out and in retaliation sent him to the nearby concentration camp. Two days later the French doctor was dismissed and Ponseti was called back and put in charge of his wounded men. Shortly after that they were moved into another building and a month later into an old barracks near Béziers rehabilitated to hold some 300 beds to meet the needs of the many refugees in the nearby concentration camps. There, along with other exiled doctors, Ponseti performed all sorts of operations during the day and at night joined the group that gathered around professor Soler Vicens, who instructed them in internal medicine.

When the French authorities became aware that war with Germany was inevitable, they began recruiting doctors. The Catalan exiles were invited to enlist in the French army with the same rank they had had in Spain. This was a tempting offer, especially because as exiles they had no valid passports, which left them in a very precarious situation. If they appealed for political asylum they would probably be drafted anyhow. To make sure there would be no misunderstandings, Ponseti asked point blank if after the war those who enlisted would be granted French citizenship. The answer was 'No.' Faced with this alternative, Ponseti decided to take advantage of Mexican president Lázaro Cárdenas's generous offer to grant citizenship to all Spanish refugees willing to come to Mexico, and on 14 July 1939, along with many other Republican exiles he boarded the *Mexique* in Bordeaux bound for Veracruz.

It was impossible to find work in Veracruz, or Mexico City either for that matter, and he had to accept a job as rural family doctor in Juchitepec, a small town at the foot of the beautiful Popocatepetl volcano, some 100 miles south of Mexico City. While he was in Mexico City, however, he met two men who would be decisive in his life. One was Wenceslao Dutrem, an exiled Catalan pharmacist who had arrived two years earlier and was the manager of a large pharmaceutical company, the Farbar Laboratories. The other was Juan Faril, head of the children's orthopedic hospital. Since there was no pharmacy in Juchitepec once a month Ponseti would go back up to Mexico City for medicines that Dutrem would supply him with. On one of these occasions, precisely 21 August 1940, Dutrem, who knew of Ponseti's experience with head injuries and his work with Adolfo Ley in Barcelona, rushed him to the hospital where Leon Trotsky lay dying as the result of a head injury received in an attempt to assassinate him with an ice axe. When they arrived, however, Trotsky was already dead.

Ponseti's monthly visits also included spending time with Juan Faril, who had begun a program of rehabilitation for children with restricted mobility and bone problems. They also talked about Ponseti's future. Faril had studied orthopedic surgery in Iowa City and knew Arthur Steindler, head of the Orthopaedic Department at the University of Iowa. Faril encouraged Ponseti to spend time in Iowa, but entry into the United States after 1940 was not easy. The Alien Registration Act required all aliens to either have a sponsor (which he didn't have) or to deposit the required 1000 US\$ entrance fee. By May 1941 he had saved up enough money for the fee so he left Juchitepec on an old *guagua* bound for the USA. During the two days it took to get to Laredo, he never took his eyes off his suitcase and was a bit wary when at the border the Greyhound bus driver took it and put it in the luggage compartment, fearing he might never see it again. As he neared Iowa City Ponseti was impressed with the tidy white farmhouses, the green lawns and the straight rows of budding corn. But what most impressed him was to find his suitcase in a corner of the station, unattended, waiting for him. It was 1 June, classes were not in session, but professor Steindler was expecting him.

Dr. Steindler was Austrian. He had studied orthopedics under Adolfo Lorenz before going to the USA in 1907. His clinical interests spanned the entire range of musculoskeletal disorders including developmental, genetic, infectious, neo-plastic and neuromuscular diseases, and their surgical and non-surgical treatment. As a conservative surgeon, Steindler's pioneering application of biomechanics to the evaluation and treatment of musculoskeletal disorders was to play a pivotal role in Ponseti's later approach. The University of Iowa offered a three-year residency-training program, but Steindler required one year of post-graduate studies before students were allowed to apply for the program. This requisite posed a real problem for Ponseti. He had no credentials. The Civil War had broken out the day after he finished his last exam and there had been no time to issue diplomas. The admissions department was at a loss about what to do and called in the Dean of the School of Medicine, who, after only a few minutes was totally aware of Ponseti's capabilities to pursue post-graduate stud-

ies. They took him on his word and by 1944 he had completed his residency and had become a member of the orthopedic faculty. Two years later, thanks to the mediation of the Spanish Consulate in Chicago, he received his official diploma and his position was legalized, which made him eligible to apply for American citizenship, which he attained in 1948.

When the Dean of the Faculty found out that Ponseti was taking private English lessons to improve his linguistic skills, he demanded that he stop the classes then and there. His reasoning was as follows: "When Steindler retires, which will be soon, we're going to need another professor with a strong foreign accent to keep up our prestige in the academic world."

Ponseti arrived in Iowa City in the summer of 1941. Soon word reached Winnet Orr, the surgeon who had invented the 'plaster cast' method for the treatment of broken bones and was now head of the Children's Hospital in Lincoln, Nebraska, that an exiled Catalan doctor was in Iowa City. He invited Ponseti to spend the summer of 1942 with him in order to hear a first-hand report of the application and results of his method. He knew that Josep Trueta had improved the method for he himself had written the preface to Trueta's *Treatment of War Wounds and Fractures* (London, 1940). Now, about ready to retire, Orr was anxious to know what other improvements were possible. That year the USA had officially entered World War II and any innovations regarding war-wound management, based on the Spanish experience, were critical to American doctors. Literature on the topic was scarce. Orr published his findings in five articles between 1919 and 1928; Trueta published his major work confirming Orr's method in 1940. On his return to Iowa City, Ponseti and José Puig-Guri, who had worked with him during the Spanish Civil War and had followed him to Iowa, published several articles based on their front-line experience: "General Principles in the Treatment of Wounds and Fractures in the Spanish War" in *The Military Surgeon* 91:39 (1942), and "Treatment of War Wounds and Fractures" in *Northwest Medicine* 42:73 (1943). Ponseti's experience was extremely valuable and he was invited to give training courses to army surgeons at Fort Leonard Wood in Missouri. For several years, he divided his time between those courses and his activities in the Department of Orthopaedic Surgery at the University of Iowa under the mentorship of Dr. Steindler.

Ponseti's first research assignment was to study the incidence of intervertebral disk protrusions in 32 cadavers. Steindler suspected that too many operations were being performed to correct disk herniation. His second research project involved a follow-up study of the results of surgical interventions for infant clubfoot that had been performed twenty years earlier. The findings fell far short of satisfaction: patients could walk, but only with difficulty. They experienced stiffness, pain, arthritis, and lack of mobility. Some even required further surgery. Ponseti's friend, Faril, was a victim of clubfoot, and after several surgeries still experienced pain and was forced to walk with a cane. Clearly, a better treatment was needed and Ponseti, who favored nonsurgical solutions, set out to find one. He began by studying the complex mechanics of the human ankle and foot. He next focused on the fact that the thickened ligaments in a child's clubfoot contain a type of collagen that allows them to

be stretched. This led him to the idea that the bones of the infant clubfoot could be manually manipulated into their normal alignments, with each new positioning held in place by carefully molded plaster casts. The procedure would spare the child the pain of surgery and it would allow the bones to align themselves in their normal weight-bearing positions. It was not only much cheaper than surgery, but it was simple enough to be done by a well-trained technician. Moreover, its 'low tech' nature would allow for the treatment in places where other treatments were almost impossible. This was significant, considering that nearly 80% of children born with clubfoot live in poor, nonindustrial nations.

Meanwhile, however, there were other disorders that interested him. The Department of Orthopedics had a well-supplied bone pathology laboratory established by Ernest Freund, who had studied in Vienna under the eminent bone pathologist, Jakob Erdheim. Ponseti starting working nights in the lab. His previous training in pathology with Ricardo Roca de Vinyals in Barcelona had prepared him well for this sort of work. In the summer of 1943 he went to the University of Chicago to further his studies in bone pathology. When the war ended in 1945 many medical officers, who had had experience in wound treatment, came to Iowa City for formal training in orthopedic surgery. Ponseti took an active part in their instruction.

In the 1920s the state of Iowa had had frequent outbreaks of osteoarticular tuberculosis produced by infected domestic livestock. The number of cases decreased sharply after the slaughter of hundreds of cows in the 1930s, nevertheless, Ponseti still treated patients that required surgical solutions, which led him to do an exhaustive study of tuberculosis of the hip. By the time his research paper finally appeared in 1948 his conclusions had already become obsolete because streptomycin and vaccines had been discovered, which soon eradicated the disease.

The 1940s were very productive years for Ponseti. He also carried out clinical studies regarding dislocation of the hip and curvature of the spine. His nonsurgical approach was not always well accepted by American surgeons who favored spinal fusions. In England, however, where the deformity was more common, his procedure received a better press. As a result, he decided to spend the spring of 1953 in the UK working with J.I.P. James of Edinburgh, professor of orthopedic surgery. On his way back to Iowa, Ponseti stopped at Barcelona to see his family. It was the first time he was back since he had left in 1939. Friends and classmates of his who had stayed in Spain after the war were eager to talk with him and to hear his story. His detailed reports of medical studies and research in American universities prompted many to ask him to find them visiting fellowships. Of the many scholarships and short-term fellowships he was able to arrange, the case of his cousin, Fernando Aleu, deserves mention.

Aleu arrived in Iowa City in 1955 to train in orthopedics, but he soon found that his real interests lie in neuropathology. From 1955 to 1964 he was associate professor in the Department of Pathology, where research led him to begin work on the biology of *elastin*, the key protein responsible for the maintenance of skin tone by allowing tissues in the body to resume their shape

after stretching or contracting. Later Aleu returned to Catalonia and founded the Aleu-Winkler Labs, in Molins de Rey, dedicated to the development of anti-aging products based primarily on the curative properties of olive-leaf extracts and peas.

Ponseti continued his studies of scoliosis and the pathogenesis of spinal deformities in Iowa. The Department of Orthopedics was gaining international prestige. Ponseti's discoveries in the area of the biochemistry of connective tissue were being widely accepted and in the fifties he began receiving invitations to lecture around the country and abroad. He spent less time in Iowa now. However, back for Christmas holidays, in 1960, he met the woman who was to be his life's companion. Helena Percas was the ideal match for him. She was a scholar herself, professor of Spanish literature at Grinnell College, some 50 miles from Iowa City. Helena was also an exile, though her story was not as dramatic as his. Her parents had first gone to Venezuela, but seeing that limited opportunities of a university education, she had decided to go to the US to study at Barnard College, in New York, and later to do post graduate work at Columbia University. Meanwhile her father, a prestigious linguist, was offered a position to teach Greek, Latin and comparative literature at Grinnell College. Helena, being an only child and very attached to her parents, followed them to Iowa after receiving her Ph.D. at Columbia. The two had many things in common. They even came to find out that this was not their first encounter. As young teenagers they had shared the same beach in Cala Molins, Mallorca, while on summer holidays! But above all, they shared a boundless admiration and gratitude for the country that had given them the opportunity and the freedom to pursue their goals.

Research, lectures and involvement in many learned societies occupied most of Ponseti's time now. His first lecture tour after they were married took them to Guatemala, where he delivered a series of lectures on children's orthopedic surgery. He never renounced his early interest in clubfeet. In 1948, he had begun applying his method to the treatment of infant clubfoot. Each cast remained in place for four or five days, followed by the fitting of a Foot Abduction Brace, consisting of a bar with high-top shoes attached at each end, which was to be worn for three months and thereafter each night until the patient was four years old. From the beginning, Ponseti kept records of the long-term development of his patients. He practiced his method 'quietly' until he had enough data to describe his technique in medical journals. Finally, in 1963, he published his ten-year follow up: "Congenital Clubfoot: The Results of Treatment," in the *Journal of Bone and Joint Surgery* 45 (1963). The article drew little attention from the orthopedic community and was considered controversial by others who preferred the traditional method of aggressive surgical intervention. Some doctors even went so far as to say that the method might be acceptable for Iowa farmers, who wore big boots, but not for urbanites. This, though insulting, did not deter him. On the other hand, it must be remembered that in the fifties and sixties surgery became increasingly more aggressive and 'heroic.' Surgeons lived by the principle "when in doubt, cut it out." It seemed that almost every patient needed a major operation to remove an organ or part of a limb. For example, surgeons advised all women with breast cancer to have a

radical mastectomy, that is, removal of the whole breast, the muscle of the chest, and several blood vessels and lymph nodes. Some surgeons even amputated the arm as well. The era of minimally invasive therapy only began in the early 1980s. If before people judged a surgeon's skill by how deep he/she could cut and how much he/she could remove. Today, a surgeon is judged not by what is removed, but by what is left intact.

In the spring of 1966, Ponseti was granted a scholarship by the Commonwealth Fund to visit the main research centers in Europe to study growth disorders and to exchange information with leading scholars in musculoskeletal research. It was an enriching experience to meet scholars, as well as old friends and acquaintances who had in the past spent time in Iowa City as visiting professors. In France, the Ponsetis were surprised to still find so many cases of polio, a disease that had been very prevalent in Iowa in the early 1950s, but was practically eradicated thanks to the Salk vaccine. In Germany, they witnessed first-hand the tragic effects caused by thalidomide. The United States had been spared this drama thanks to a biologist from the University of Chicago, Frances O. Kelsey, who had joined the FDA early in 1961. At that time, federal law required that a proof of safety be sent to the FDA before a medication could be approved for sale in the USA. Kelsey had strong reserves concerning the effects of thalidomide on human embryos and repeatedly refused to grant approval.

Back in Iowa again, Ponseti continued practicing his non-surgical methods on patients with clubfeet, curvature of the spine and congenial hip dysplasia. More awards and honors and speaking engagements followed: Mexico, Puerto Rico, Madrid, Rome, Naples, Paris, Toulouse, Montpellier, Quebec, Exeter, etc. But, in 1984, at seventy came mandatory retirement. In his honor, the University of Iowa organized an International Symposium; the 'Ignacio V. Ponseti Professorship' was established in recognition for his outstanding work; the University of Barcelona named him *Doctor Honoris Causa*; Ciutadella—the city where he was born—honored him with its Gold Medal for Honorable Citizens.

The following lists are of honors and awards that Ponseti received throughout his life, and the numerous organizations he belonged to:

Honors and Awards

- 1955 – Kappa Delta Award for outstanding orthopedic research
- 1960 – Katoen Gold Medal, American Medical Association
- 1966 – Commonwealth Fellowship
- 1966 – Lawrence Pool Price, University of Edinburgh, Scotland
- 1975 – Shands Award Lecture, Orthopaedic Research Society
- 1983 – Ignacio V. Ponseti International Symposium
- 1984 – *Doctor Honoris Causa*, University of Barcelona, Barcelona, Spain
- 1984 – Honorary member, Spanish Society of Orthopaedics and Trauma
- 1985 – Gold Medal, City of Ciutadella, Minorca, Spain
- 1988 – Honorary member, Pediatric Orthopedic Society
- 1989 – Honorary member, Official College of Physicians of the Balearic Islands

1989 – Honorary member, Balearic Association of Orthopedic Surgery and Traumatology

Organizations

- 1950 – American Medical Association
- 1948 – Iowa State Medical Society
- 1954 – Sigma XI (past president of Iowa Chapter)
- 1950 – American Academy of Orthopaedic Surgeons
- 1950 – American College of Surgeons
- 1954 – American Academy for Cerebral Palsy
- 1954 – Orthopaedic Research Society (past president)
- 1955 – Society for Experimental Biology and Medicine
- 1956 – International College of Surgeons
- 1956 – New York Academy of Science
- 1956 – Mexican Society of Orthopaedics (honorary)
- 1957 – International Society of Orthopaedic Surgery and Trauma
- 1957 – Argentine Association for Surgery (honorary)
- 1957 – Chilean Surgical Society (honorary)
- 1957 – Chilean Society of Orthopaedics and Traumatology (honorary)
- 1963 – Brazilian Society of Orthopaedics (honorary)
- 1970 – Midwest Connective Tissue Club
- 1970 – Scoliosis Research Society
- 1988 – Pediatric Orthopedic Society (honorary)

As professor Emeritus, now he had more free time to spend on his somewhat neglected hobby, the history of art. Vacations were also longer and farther away. To get away from the cold Iowa winters, at least one month was spent at Cala Molins, near Pollença, where Helena still had property. On their way back to Iowa they would stop off at Barcelona to see Ponseti's younger brother Miguel, a city architect and professor of resistance material at the School of Architecture.

But retirement did not mean abandoning his life's work. He kept his office and his biochemistry lab at the university, where, with the purpose of finding possible anomalies in idiopathic scoliosis, he returned to the study of elastin—the protein that allows tissues in the body to resume their shape—in the spinal ligaments. He also continued to publish his findings. Indeed, his research articles—some 150—show that his work in the field of orthopedics was well received, nevertheless, few surgeons approached him with the desire to learn how to put his method into practice. This, after fifty years of application and thirty of follow-up, was a great frustration for him. In the early 1990s, one orthopedic surgeon who did believe in him—Stuart Weinstein, who specialized in spinal deformity in children, children's hip and foot problems, and the natural history and long-term outcome of pediatric musculoskeletal conditions, and the first to occupy the Ignacio V. Ponseti Chair at the University of Iowa—, asked him to return to the department to show how to correct clubfeet properly. This was a significant breakthrough.

Ponseti had written articles and given lectures on the subject for years, now people were actually interested in putting his method into practice. One day, his wife told him point blank that it wasn't enough to write articles and give workshops, he

had to write a book and she would help him do it. They bought a computer and she typed while he dictated the content to her. By 1995 the manuscript was ready but they couldn't find a publisher. Publishers were more interested in putting out books on the latest kinds of aggressive surgery. Finally, on the recommendation of two of Ponseti's colleagues—Stuart Weinstein and Jody Buckwalter—Oxford University Press accepted the manuscript and the following year *Congenital Clubfoot: Fundamentals of Treatment* (Oxford University Press, 1996) was out. Rapidly his nonsurgical technique began to gather interest and respect as more and more orthopedists began to adopt it. It seemed that people were hearing about it for the first time. His 1963 article was being cited for the first time. Contemporary proponents reprimanded him for not having promoted his technique more aggressively earlier on. Surgeons began flocking to Iowa City to learn the technique first hand. Then Charles Saltzman, one of Ponseti's colleagues, suggested he should describe the treatment on the Internet.

In 1997, he was invited to lecture at *Sant Joan de Déu*, a large children's hospital in Barcelona. A newly appointed assistant, Anna Ey, enthusiastically embraced the method and became the first to apply the Ponseti Method in the Iberian Peninsula and to promote it through workshops and conferences. Today there are two specialists in Spain that apply the Ponseti Method: Dr. Anna Ey in Barcelona and Dr. Rafael Casielles at the Hospital Materno-Infantil in Malaga.

Coinciding with all this euphoria in the medical world, and as a result of it, Martin Egbert, a wealthy developer from Las Vegas, was told to take his three-month old son to Iowa City if he wanted his clubfeet corrected safely. Egbert was so delighted with the outcome that he and his wife created a nation-wide support group: 'The Ponseti International Association - Promoting the Ponseti Method and other best practices for Clubfoot Treatment (PIA).' What had not been accomplished in fifty years was accomplished in five thanks to the Internet and to parents who began alerting other parents of the risks involved in surgical solutions for clubfeet.

Not only was it impossible to treat all the patients that requested attention at Iowa, but it was vital to train medical personnel. The first step was to help doctors understand the biomechanics of the joints for the correction of the deformity. In order to illustrate how to bring the bones back to their normal position a model was necessary. For this Ponseti resorted to a gifted craftsman, John Mitchell, who made plastic skeletons for anatomy professors. The clubfoot model, made of plastic bones and elastic bands as ligaments, became a very useful tool to teach proper manipulation of the foot. Most of the early training courses were hands-on workshops put on by Ponseti himself, but after 2001 he turned them over to his colleague, José Morcuende, a young Spanish doctor and faculty member at the University of Iowa. It is estimated that some 200,000 infants are born with clubfeet each year. Thanks to hundreds of enthusiastic practitioners—many who have been to Iowa to learn the procedure first-hand—, the non-surgical Ponseti Method is now being implemented in more than 50 countries around the world. At the 2007 International Clubfoot Symposium attended by 200 doctors from 44 countries, papers were

presented regarding an estimated 10,000 children successfully treated with the technique around the world in the past few years.

As training courses, conferences and websites multiplied, and the Ponseti Method was becoming a standard procedure all over the world. Ignasi Ponseti—now in his mid-nineties—was finally reaping the fruit of his labors when, on 15 October 2009, as he was walking into his office at the University, just three days before he was to give the inaugural address at the annual Ponseti Training Symposium, he had a stroke. He was rushed to the emergency ward. Again, Helena Percas-Ponseti, his inseparable companion of nearly 50 years, rose to the occasion. She mounted the platform, excused the absence of her husband and before a deeply moved audience proceeded to read the lecture he had prepared for the event. The following day he was gone. He will be remembered by all those who knew him as a cultured, soft-spoken, visionary doctor and a man of deep tenderness, curiosity and dedication.

Acknowledgements

I would especially like to thank Professor Helena Percas-Ponseti (unexpectedly deceased 01/01/11) for facilitating much of the information that appears in this article both in personal communication and in her book *Homage to Iowa. The Inside Story of Ignacio V. Ponseti* (University of Iowa, 2007). I would also like to thank Timothy Barrett, of the University of Iowa Center for the Book, as well as Dr. Stuart L. Weinstein and Linda O'Connor of the Department of Orthopedics of the University of Iowa, for their support.

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