

## DeTar Medical Legacy

**Father John DeTar, 86, Urologist,  
Reno, died 20 November 2011**

I knew Dr. John (Jake) DeTar from afar during my 20 years as Dean. For several years, he would write me a very respectful letter strongly suggesting that as Dean of the medical school I should not be on the Board of Planned Parenthood because he believed they were performing abortions. As I learned over the years, Jake had a fervent belief against abortions. The more I learned about his activities & beliefs, I realized that he and I did not agree; however, I certainly admired and respected his passion for his beliefs. And despite his passion, I appreciated the respectful way he disagreed.

I also knew that two of his children became physicians, Jo (1987) and Michael (1989), who attended the University of Nevada School of Medicine during my tenure as dean. I did not know that two additional children, Edward (MSU 1998) and Tom (USC 1986), also became physicians. Twelve siblings and four physicians! To have a third of one's children become physicians led me to

Bob Daugherty, M.D.

seek out these four siblings and ask what influence their father had on their choices. Below are their responses.

**Son Tom, Otolaryngologist, Coeur  
d Alene, Idaho**

Although I am #8 of 12, I was the first of the kids to pursue medicine. Both my father and physician grandfather inspired me, but I also have an uncle and cousins who are physicians.

My father kept an extra phone in our house linked to his office, so patients were surprised to hear his voice when they called his office in the evening or weekends. His personal attention to his patients served as a wonderful example to me, as I now call my patients at home after their operations.

I attended UNR with a major in premed studies and a minor in German. Dad encouraged me to keep my education as broad as possible, as professional school tends to narrow a mind's perspective. I thank him to this day for such wonderful advice. Reading Virgil, Goethe, and the classics was possible then, but it would be

## 18th History of Medicine Banquet

The annual history of medicine dinner and lecture will be held this April 3, 6:30 PM, at the Eldorado Hotel and Casino. Former Washoe County District Attorney Cal Dunlap will discuss the "History of the Fallon Cancer Cluster." The public is invited. The dinner is \$35 and reservations can be made with Lynda McLellan at the Department of Pathology, 784- 4068.

## Greasewood Electronic Mailing List

We have created an electronic mailing list if you wish to receive *Greasewood Tablettes* on line rather than in the U.S. mail. Please send your email address to [tgarrison@medicine.nevada.edu](mailto:tgarrison@medicine.nevada.edu)

difficult now.

I have always felt it was a privilege to take care of patients, enjoying the challenge of diagnosis, and improving my surgical skills. Perhaps, my enthusiasm for medicine is why my son, Will, is a junior at UNR and planning to apply for medical school this coming year. I have never regretted my decision, and remain indebted to my father and grandfather for showing me the way.

## **Daughter Jo, Anesthesiologist, Elmira, New York**

I went to college, intending on teaching physical education as a career. Of course, along the way, I changed my mind and decided to put my love of physical education and sciences together to become a doctor.

Would I do it again? Most definitely. I have always felt that I had been given a great privilege to be accepted into the medical profession and to receive the mantle of a physician. There have been several times when I know that my involvement in a patient's care has made the difference between living and dying. And I say that those few instances are why I travelled the road I did—just to be there, at that time—and made a difference.

I am also blessed to be able to say I still love my work. I'm not just "working for the weekend." So I thank my following mentors, over the years, for making it possible for me to do what I do:

- My father for teaching me how to ski, sail, ride bicycles, for his foresight in our home—"no TV"—just books from ceiling to floor in every room where a wall was available; for English grammar lessons at the dinner table; for taking us to Mass every Sunday; teaching us about ethics and logic; and handily having a lot of interesting literature lying about the house.

- My teachers: Mr. Riordan, at Bishop Manogue High School; my first grade teacher, Sister Maryanna, my sixth grade teacher, Sister Boniface; my chemistry teacher at UNR, Mr. Chuck Rose; and Mr. Loper in the physical education department. I also must add Dr. Sohn to my list, because he let me come to the coroner's office to watch autopsies, which helped me get into medical school.

- So that's where my path came from and where it led.

## **Son Mike, Pathologist, Coeur d'Alene, Idaho**

Our family has a number of physicians, including my father and his father before him, and they certainly played a large role in my decision to pursue medicine.

I recall as a boy attending a ranch style picnic with my father at the home

of a long time country doctor, Dr. Mary Fulstone, in Yerington, where I met Dr. Salvadorini, a Reno doctor. When I later asked my father what kind of doctor he was, he told me he was a pathologist. I didn't know what a pathologist was and queried about that as well. My father responded by describing a pathologist as a "Doctor's doctor who has to know everything." That seemed like a pretty daunting area of medicine to me, and I didn't really think about pathology again until my second year of medical school, when I studied under Doctors Sohn, Ritzlin and Malin at UNSOM.

I have encountered many in medicine who have lost the joy of "Practicing the Art." The administrative burden is huge and the "compliance" requirements have made the practice of medicine unwieldy and hazardous. Despite these challenges, I consider my choice of specialty to have been a wise and personally rewarding one. When people ask me if I would go through medical school, "If I had to do it all over again," I tell them, Yes, it was a challenge, but when young, fearless, and foolish, and when 'securing the prize' seems attainable, the sacrifices are well worth the effort, and I would do it again."

## **Son Edward, Surgeon, Coeur d'Alene, Idaho**

I am the youngest of the 12 John DeTar children and have always felt that my family was very unique and wonderful. I have been blessed to have such a one-of-a-kind father and have so many great older siblings. In fact, I think the uniqueness of my family is perhaps why I am a doctor today.

As a child I always felt drawn to medicine and from my earliest days I recall wanting to be a doctor. I admired what my grandfather, father, and older siblings did, and I felt it was the noblest of professions.

I applied to medical school and was granted two interviews. I did

well on one and totally bombed the other. Someone from admissions called me a week later and told me that they would like to grant me a third interview since my first two were so polarizing. My third interview started off benign, then the interviewer asked me about my family. This led to a one-plus hour discussion about my family. In the end, she found me, by virtue of my unique family, to be a good candidate and I was accepted. To this day, I am convinced I was accepted to medical school partially because of my achievements, but mostly because of my unique large family with my one-of-a-kind dad.

I now practice general surgery and vascular surgery with five partners. I thoroughly enjoy my practice and cannot imagine doing anything else. I am in my 9th year since finishing residency and feel today as I did at age 13, that medicine is a noble profession, every day is fascinating, and there is nothing I would rather be doing.

**Dr. Bob Daugherty**, "Dr. Jake DeTar very much influenced four of his twelve children to enter the profession of Medicine, not only as a caring father, but in many ways as their physician role model. **A true family legacy for medicine.**"

## **Macabre Medicine: The Changing Yet Pervasive Role of *Hirudo medicinalis***

Kristin Sohn

*Hirudo medicinalis*, the medicinal leech, has been used for centuries to treat human ailments. Enthusiasm for the practice reached its peak in the early half of the nineteenth century, at which time *Hirudo medicinalis* had been harvested nearly to extinction. Western medicine abandoned the practice by the middle of the twentieth century, as many practitioners and patients regarded the practice as archaic and macabre. Remaining open to new interpretations of old therapies can

sometimes be as important for the advancement of medicine as new discoveries, and leeches have recently been reintroduced into the clinical practice of medicine. They currently occupy their very own, unique niche in modern reconstructive microsurgery.

The earliest documentation of leeching appeared in an Egyptian tomb painting, dated around 1500 BC; however, the first written description did not occur until 200 BC, when Nicander, a Greek physician and poet, wrote of applying leeches to extract poisoned blood from animal bite wounds. Leeching was popular throughout the Middle Ages in Europe, when blood-letting was performed to remove the excess fluid (plethora) thought to cause disease. Similarly, in India, Ayurvedic practitioners believed imbalances of three primary humors – wind, bile, and phlegm – created predisposition to disease. Leeching was often the preferred method of blood-letting, as leeches can be applied anywhere, even small, hard-to-reach areas, they can draw blood from deep tissues, and they can produce visible results. Leeching was also preferable for children, who were believed to be too weak for more vigorous methods.

Medieval British physicians used leeches so extensively that the word leech was also used to refer to the physician, and leechcraft became synonymous with medicine. Leeches were applied to relieve the congestion of bruises, black eyes, and hemorrhoids. They were used as treatment for headaches, fevers, epilepsy, ulcers, obesity, gout, and tuberculosis. Leeches were applied to swollen testicles to treat gonorrhea and to the anus to treat hemorrhoids, bowel disturbances, and bladder inflammation. They were used in the mouth to treat tooth abscesses, and they were placed in the back of the throat to treat bronchitis and laryngitis. They were even placed in the vaginal canal to treat uterine disorders. When used internally, methods were devised to prevent the leech from wandering; one such method was to pass thread through the tail of the leech and loop it around the patient's finger.

The popularity of leeching peaked in the first half of the nineteenth century. During this time, Francois Joseph Broussais, a French military surgeon, was the most prominent proponent of leeching. He advocated the use of thirty to fifty leeches at a time, and he once treated his own indigestion with fifteen applications of fifty to sixty leeches over eighteen days. At the peak of his prominence, 41.5 million medicinal leeches were used in France during 1833. Leeching became so fashionable that it inspired a line of clothing

with embroidered leeches. Physicians throughout Europe and America employed the practice, and even traditional healers in Japan borrowed leeching techniques.

As a result of the huge insurgence in popularity, leeches were harvested to near extinction in Europe. Leech gatherers simply waded through ponds and lakes, allowing the leeches to attach themselves to the gatherers' bare legs. During plentiful times, a single gatherer could harvest twenty-five hundred leeches per day. When leeches were no longer found in the wild in England, they had also severely declined in France, Germany, and the United States, and they had to be imported from Hungary and the Balkan Islands. Some tried leech farming in France and Germany, and formulas were written for the amount of optimal elderly horses per unit of land for the leeches to feed upon.

Around this time, horror stories began to circulate, and some publicized deaths were attributed to leeching. Most, if not all, of these patients were already suffering from terminal illnesses, yet the negative publicity took a toll. Only small pockets of physicians and healers remained attached to leeching. Pharmacists in immigrant sections of large American cities continued to provide leeches for common maladies, and physicians in Australia and France continued to use leeches to treat glaucoma. Physicians in Europe and America periodically used leeches for postoperative treatments, pericarditis, thrombophlebitis, and hypertension into the 1940s, but by the middle of the twentieth century, leeching was completely abandoned in the United States and England.

Early healers had little understanding and didn't realize the leech is much more than a mere lancet. The effectiveness of therapy with *Hirudo medicinalis* is now known to be attributed to both mechanical and biological effects. Mechanically, its mouth contains three cutting plates, each equipped with up to one hundred teeth. These plates are like circular saws arranged radially, and they open the wound in three directions. The leech's puncture bite is relatively painless, comparable to a mosquito

bite. There is debate about the existence of local anesthetic in leech saliva; to date none has been isolated.

The saliva of the medicinal leech contains many factors and enzymes which contribute to its effectiveness. In 1884 a British scientist discovered that leech saliva contains an anticoagulant, which actually became the first known anticoagulant. He named it hirudin, after the genus name *Hirudo*, but he wasn't able to isolate the active substance. In 1955, this substance was elucidated as a highly specific inhibitor of thrombin. It functions to keep the blood meal liquid during digestion. The leech's saliva also contains several anticoagulation substances: factor Xa inhibitor; bdellin, a plasmin inhibitor; and apyrase, a platelet aggregation inhibitor. Histamine is also injected, causing vasodilation and increased venous flow. Collagenase and hyaluronidase are released, which enable infiltration of antithrombotic substances into congested tissue and dissolve bacterial capsules. Unfortunately, the leech can also be a source of infection, as *Aeromonas hydrophila* resides in its gut and can be transferred to its host. The leech relies on these gram-negative bacteria to digest ingested erythrocytes and kill other bacteria.

On average, leeches attach to human hosts for twenty minutes, ingesting 5-15mL of blood, approximately ten times their body weight. They fall off when satiated, but blood continues to ooze for up to 72 hours, which can add an additional 20-50mL of blood loss. The unique combination of enzymes and clotting inhibitors make leeches well suited for relieving venous congestion often associated with reconstructive microvascular surgery. This was first realized in 1960, when two Yugoslavian surgeons published an article describing the use of leeches to relieve venous congestion of skin transplants. The article was initially greeted with silence and skepticism, but by the 1980s the practice of leeching had reemerged into clinical medicine.

Tissue viability is threatened by venous congestion in about 10% of microvascular free-tissue transfers. Even when arterial flow is sufficient, venous congestion causes thrombosis, trapping of platelets, and stasis in the microcirculation. Leeching can relieve this congestion, through a combination of bleeding, which alleviates obstruction and

raises capillary pressure, and vasoactive and enzymatic secretions. This allows time for the body to revascularize and repair the tissue. Leeches are currently utilized for the salvage of compromised microvascular circulation in free-tissue transfers and replanted digits, ears, lips, scalps, and nasal tips. They are bred in dark temperature-controlled rooms, purchased on the internet, and shipped worldwide, at an approximate cost of eight dollars per leech.

Leeching is not without complications. Nearly all patients require repeated blood transfusions, placing the patient at risk for blood-borne illness and transfusion related reactions and placing a burden on blood banks. Due to the large fluid shifts, volume management is challenging, and up to 50% of patients may

develop prerenal azotemia. Acute or delayed *Aeromonas hydrophila* infections, ranging from minor wound drainage to myonecrosis and septic shock, occur in up to 20% of patients, and for this reason concurrent prophylaxis with third-generation cephalosporins, fluoroquinolones, or tetracyclines is recommended. Not surprisingly, psychosis is commonly observed. Allergic reactions and anaphylaxis have also been reported.

There are very few natural medical remedies that have endured for centuries, and it is surprising that treatment with a parasitic annelid worm would survive into the twenty-first century. Research has exposed the exact nature of many of the leech's abilities, and the mechanisms responsible for its healing powers are

remarkable. Despite the associated risks, there continues to be areas of medicine, most notably microvascular surgery, in which the benefits outweigh the risks. There is also ongoing scientific research involving medicinal leeches. Biotechnologists have genetically engineered a recombinant hirudin, which may prove useful in many areas of medicine. Platelet inhibitors have been isolated from leech saliva, and these may be promising in vascular surgery. With limited success, companies have even created artificial leeches. To date, these artificial substances and mechanisms have not been able to replace the healing powers of *Hirudo medicinalis*, and it seems likely that leeching will survive into the next century.