



Dr. Paul Kelly Honored for his Blood Salvage Work

DR. PAUL B. KELLY RECEIVED the 2008 Dale A. Smith Memorial Award in October at the AABB annual meeting in Montreal, the very city where he received his medical degree from McGill Faculty of Medicine in 1961. AABB (formerly the American Association of Blood Banks) is an international blood banking association representing individuals and institutions involved in activities related to transfusion and cellular therapies, including transplantation medicine.

Dr. Kelly shares this prestigious award with Keith Samolyk of Global Blood Resources, LLC, for innovation regarding blood salvage and autologous transfusions. Their contributions help conserve allogeneic blood products, benefiting patients and the community blood supply.

Dr. Kelly is well known to the Sacramento Sierra Valley Medical Society (SSVMS), having received the 2006 Golden Stethoscope Award - the Society's highest honor - for his many contributions to the Sacramento region over the years. In 1971 he joined the cardiovascular program at Sutter Memorial Hospital, where he and his colleagues brought the first heart transplant program to the capital area in 1989.

Less well known is his work in 1974 to help create the Cell Saver, a device that revolutionized perioperative blood management.

Dr. Forest Junod, a former colleague at the Sutter Heart Institute, recalls that in the late 1960s and early 1970s, a surgeon did not perform heart bypass surgery without at least 15 units of blood. Five were for the heart-lung bypass pump, five for the patient, and five in case post-operative transfusions were needed. A heart-lung machine oxygenated the blood while the patient's heart and lungs were bypassed. It required a large volume of saline added to the bag that contained the patient's blood, resulting in a total volume of approximately three liters.

Following surgery, this bag contained two or more units of red cells. Dr. Kelly began to think about how to remove the saline so the red cells could be returned to the patient. He borrowed a cell washer from the Sacramento Blood Bank that was very efficient at concentrating red cells; but it was designed for use in a fixed location and was cumbersome to move. Nonetheless, it worked, so Dr. Kelly's team used it routinely.

In the fall of 1974, Gordon Kingsley from Haemonetics, developer of the cell washer, heard about the new process. He promptly flew north to spend the next two days watching Dr. Kelly use the washer after heart surgeries. It was a "terrific idea," but a more mobile device was needed.

Kingsley sketched out an idea of what would eventually become the Cell Saver and came up with the trademark name; it described perfectly what was being accomplished - saving red cells. He built a model in his basement workshop, and, only three weeks later, a portable unit was delivered to Dr. Kelly. Kingsley comments, "The current version of Cell Saver is, of course, more sophisticated and part of big business today, but the germ of the idea started with Dr. Paul Kelly. No invention gets to the marketplace without that idea being born first."

A whole new perspective about blood transfusions exploded at the time the Cell Saver was coming into common usage. It was a difficult time for blood centers across the nation, as testing technologies were then unable to identify dangerous blood-borne viruses. Transfusion, once

viewed as life-saving, was also viewed as life-threatening. Dr. Kelly's work minimized the need for allogeneic transfusions in the operating room and allayed fears of blood-borne viruses.

Oncologist Dr. Vincent Caggiano says, "As a cardiac surgeon, Paul Kelly was always concerned about excessive blood transfusions during surgery, and the availability of blood needed in emergency situations. During my tenure at the Sacramento Blood Center we were faced with early testing for hepatitis B antigen (known as Australia Antigen initially) and later with the AIDS problem, involving blood centers nationwide. Paul always vigorously supported doing what was right for the patient, and as a result the quality of the blood remained high. This passion for a safe blood supply no doubt led Paul to develop ideas that led to the Cell Saver."

Dr. Gerald Simon who served with Dr. Kelly on the Sacramento Medical Foundation (now BloodSource) notes that "Dr. Kelly showed exceptional vision in stepping outside his role as a cardiac surgeon to learn and integrate medical pathology and medical technology to help patients. His understanding for the need of highly specialized laboratory equipment and testing for cardiac transplant patients - as well as blood services - paved the way for heart transplantation to take place in Sacramento."

Dr. Kelly observes bemusedly, "I know that people today may view my handling regarding the business of the Cell Saver device as somewhat naïve, but at that time, crossing the line between medicine and financial rewards for the development of something like the Cell Saver was an ethical line that was not generally crossed by physicians. Today's world is much different in that regard. Yet I have no regrets about that part of the process and though very grateful for this award, it is more important that patients were impacted for the good - and continue to be - through the use of the Cell Saver. It is gratifying to now see the Cell Saver as part of the routine for any time blood loss is involved, including emergency and trauma care."

Vicki.wolfe@bloodsource.org

Sierra Sacramento Valley Medical Society
5380 Elvas Avenue #100 • Sacramento, CA 95819
916.452.2671 PH • 916.452.2690 FX • Email: info@ssvms.org

Copyright © 2000-2008 Sierra Sacramento Valley Medical Society - All Right's Reserved