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The Society for Cardiovascular Angiography and Interventions

SCAI President's Page

Tribute to a Legend in Invasive/Interventional Cardiology Melvin P. Judkins, M.D. (1922–85)

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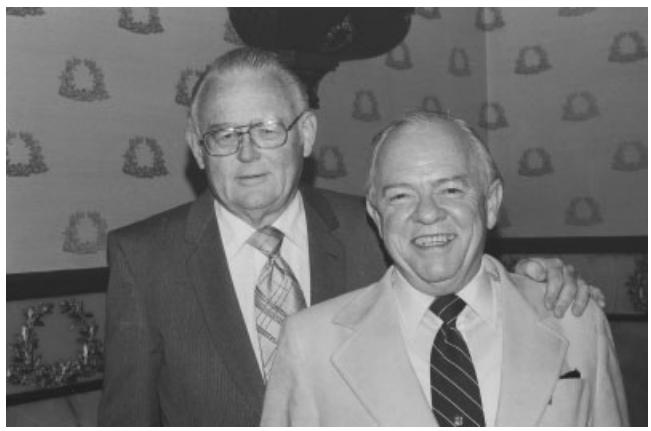
As 2004 drew to a close, your Society unveiled a new section on www.scai.org *for the sole purpose of honoring the ''legends'' in cardiovascular medicine, specifically the pioneers whose genius, creativity, and vision laid the foundation for our specialty of invasive/interventional cardiology. We launched this new feature of scai.org with tributes to SCAI's co-founders, Drs. F. Mason Sones and Melvin P. Judkins, two physicians who had the foresight to start a group dedicated to the unique needs, concerns, and issues that interventionalists confronted a quarter-century ago as well as today.*

This new section of scai.org is still in its infancy, with just a few tributes posted thus far, but we hope to continually expand it, as there are many ''legends'' in invasive/interventional cardiology who should be acknowledged. Please consider this President's Page my personal invitation for you to send your tributes to, and favorite memories of, other physicians whom you consider to be ''legends'' in the field, physicians and scientists who put our specialty on the map or helped it to advance to its current status as one of the most dynamic in all of medicine.



SCAI's founders: Melvin P. Judkins, M.D., and F. Mason Sones, M.D.

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To launch the Web site's new portal, I have excerpted the tribute below on Dr. Judkins. This article is based in large part on an article titled ''Master Angiographer: Melvin P. Judkins '47,'' which was written by his wife, Eileen Judkins, R.N., and published in the School of Medicine of Loma Linda University's Alumni Journal, March–April, 1997. Dr. Judkins developed the preshaped catheters now known as ''Judkins catheters,'' which remain relatively unchanged today. Those catheters formed the basis for the Judkins percutaneous transfemoral technique for selective coronary angiography. Dr. Judkins died in 1985, at age 63.

The twin themes in the life of Dr. Melvin P. Judkins were already apparent in his earliest boyhood. Growing up near Los Angeles, he enjoyed building things, loved shop class, and was fascinated by all things mechanical. His family included two uncles who were physicians, several aunts who were nurses, and his father who was a physical therapist. Young Dr. Judkins's college aptitude scores were equally high in engineering and medicine.

Medicine won. He enrolled in a pre-med program at La Sierra College; the Army paid for his medical education at the College of Medical Evangelists (now known as Loma Linda University) during World War II. He began his career in urology, becoming chief of the Urology Section at the 28th General Hospital in Osaka, Japan, when the Army commissioned him for active duty. He completed his service as a captain and began a one-year general residency back in California.

His goal was a small-town family practice. He and his wife Eileen, the nurse he married in 1946, moved to a small dairy-farming community in Washington. ''[Our] first patient was a dog — examined, x-rayed, and cared for as lovingly as a human at no charge,'' Mrs. Judkins remembers in a tribute to her husband published in the *Alumni Journal* of the School of Medicine of Loma Linda University. Solo practice proved to be too demanding, however, and the couple eventually established a new practice in a small California town that was home to a friendly Seventh-day Adventist church. In addition to Mrs. Judkins, the staff grew to include another family practice physician and sometimes an internist, four nurses, a laboratory and x-ray technician, a part-time physical therapist, a receptionist, and a bookkeeper.

By the late 1950s, burnout threatened and Dr. Judkins looked for new challenges. The solution proved to be radiology. He had looked forward to ''lessons'' in interpreting films during daily consultations with a hospital radiologist. And when he sought advice from a former family-physician-turned-radiologist, the man's enthusiasm was infectious. ''The final decision hinged on finding a resident program that would accept a near 40-year-old,'' writes Mrs. Judkins. ''His rejection letter from the Mayo Clinic indicated he was too old to begin specialty training. To his satisfaction, years later he was invited to Mayo to present a lecture series on the Judkins technique of coronary arteriography!'' Dr. Judkins began his residency at the University of Oregon in 1961.

By then, Dr. Charles T. Dotter, the Radiology Department's chair, was already a well-known angiographer. Angiography and cardiovascular radiology quickly became Dr. Judkins's special interest, too. During a fourth-year fellowship, the two men collaborated on the development and introduction of percutaneous transluminal dilitation of narrowed peripheral arteries. ''Their initial results were published in a landmark 1964 article,'' Mrs. Judkins notes. ''Initially scorned by most U.S. colleagues, this procedure was the forerunner of today's transluminal angioplasty techniques.''

Since coronary arteriography wasn't being done at the University of Oregon, Dr. Judkins went to the Cleveland Clinic to learn the brachial artery cut-down approach developed by Dr. F. Mason Sones. Having set his sights on a career in cardiovascular radiology, he then headed for the University of Lund in 1965. ''Sweden was then the mecca of radiology, particularly selective arteriography,'' remembers Mrs. Judkins. In 1953, radiologist Dr. Sven Seldinger had discovered a safe, simple way of introducing vascular catheters without a cut-down by using percutaneous catheterization via direct arterial puncture — an historic breakthrough.

Upon his return to the University of Oregon in 1966, Dr. Judkins was named associate professor of radiology and director of a new laboratory specially outfitted with the first commercially manufactured imaging equipment designed specifically for angiography. While in Sweden, Dr. Judkins had helped develop a ''hooktail'' catheter for percutaneous selective cardioangiography. Soon he and his colleagues at Oregon were tinkering with guidewires and guidesprings, coming up with several innovations. Then began his quest to create a catheter that could be used for selective coronary catheterization.

Equipped with a plastic-impregnated human heart, a roll of wire, a wire-cutter, and pliers, Dr. Judkins began creating shaping wires. ''When not scrubbed in his cath lab, he concentrated on bending shaping wires, using various pipes and faucets at the scrub sink to mold the wires,'' writes Mrs. Judkins. ''He would scrutinize the shape, place the wire over a chest radiograph on the view box, contemplate, and make changes.'' If a shape seemed workable, he would thread a catheter over the shaping wire, immerse it in boiling water to set the shape, and experiment on the heart specimen.

Soon Dr. Judkins was using his new catheters on living patients, creating preshaped catheters customized to each patient's anatomy. Thus was born the Judkins percutaneous transfemoral technique for selective coronary

arteriography. Details of his new technique and the outstanding radiographic images it produced were published in *Radiology* in 1967. In 1968, commercial manufacture of preshaped Judkins coronary catheters and shaping wire sets began.

By 1969, Dr. Judkins was director of cardiovascular radiology, professor of radiology, and the head of a new research laboratory that was the gift of a grateful patient. Then came an invitation to join the faculty at Loma Linda University. Although the Judkins preferred to stay in Oregon, they put the matter in God's hands and accepted the post once they received God's sign. By 1970, Dr. Judkins was chair of the Department of Radiation Sciences and director of the cardiovascular laboratories at Loma Linda. Once the state-of-the-art laboratory he designed was up and running, physicians from around the world came to learn Dr. Judkins's technique. Dr. Judkins also fostered friendships with engineers at equipment manufacturers, thus influencing the development of the next generation of equipment.

''Although a properly shaped catheter was the key to success, he always emphasized that his technique was not confined to the use of his catheters,'' Mrs. Judkins explains. ''The Judkins technique embraced a combination of professional skill in transfemoral access and manipulation of unique preshaped catheters, proper patient position for filming, and high-quality radiographic hardware to produce and record optimum information while protecting patient and laboratory team from unnecessary radiation exposure.''

The master angiographer's days of performing laboratory studies came to an abrupt end when Dr. Judkins suffered a stroke in 1978. Accepting his limitations gracefully, he and Mrs. Judkins worked as a team to author several scientific publications and continue other nonclinical professional activities. Always a fan of both actual and model trains, the couple also used the extra time to intensify their train-watching activities. Dr. Judkins died in 1985, ending their partnership of 39 years.

''He charted a course followed by radiologists and cardiologists, a tacit tribute to his preeminence in both fields,'' Mrs. Judkins writes. ''He never sought to patent nor did he ever receive any monetary rewards for any of the cardiovascular tools or devices he developed.... When asked once why he did not patent his devices, he replied that he wanted to make safe coronary arteriography available to as many patients as possible. The fact that most catheterization laboratories in the world use the Judkins technique for selective coronary arteriography is evidence that his desire is accomplished.''