The Society for Vascular Surgery: As I remember—An interview with Dr. Michael E. DeBakey

Michael E. DeBakey, MD, and **F. William Blaisdell, MD**

As part of the activities to celebrate the first fifty years of the Society, the Celebration Committee decided to conduct a videotape interview of the two surviving founding members: Drs. Michael E. DeBakey and Harris B. Shumacker, Jr. Part of these two interviews will be shown at the 50th Annual Meeting in Chicago. The following transcript is from the interview with Dr. DeBakey conducted by Dr. F. William Blaisdell, Calvin B. Ernst, and James S. T. Yao.

F. William Blaisdell: We are doing this interview in anticipation of the 50th anniversary of The Society for Vascular Surgery. You are one of the two remaining founding members, and we are interested in your appraisal of how the Society for Vascular Surgery came about.

Michael E. DeBakey: To some extent, it was a result of the war experience. As you know, during World War II the incidence of amputations from major arterial injuries of both the upper and lower extremities was high. Vascular repair was not very successful because it was not attempted often enough. You may recall that Fiorendo Simeone and I analyzed the cases of arterial injuries during World War II, in which we published our experience showing a high incidence of failure to perform vascular surgery. This procedure, however, became important in these vascular injuries, and as a result, we set up what we called vascular centers. Dan Elkin was the head of one in the Green Briar Hotel, and Harry Shumacker was assigned to one in Indiana. We had to set up these centers immediately at the end of the war to take care of the wounded who returned to the States to concentrate the personnel, because of the shortage of highly trained physicians, especially specialists in neurosurgery, orthopedic surgery, and vascular surgery.

Blaisdell: People hadn't really trained in vascular surgery.

DeBakey: That's right.

Blaisdell: So you were involved in encouraging people to study vascular surgery.

DeBakey: Exactly, but we were concentrating on vascular problems in the vascular centers. This concept developed out of the military experience and the establishment of these centers. A large part of the vascular surgery dealt with arteriovenous fistulae. These were the patients who had survived the war but had an arteriovenous aneurysm that had to be repaired. So this was the impetus for the idea that vascular surgery should be a surgical specialty, which it wasn't at that time. Two surgeons who were interested were Ross Veal in Washington and George Lilly in Florida. George Lilly had worked with Dr. Alton Ochsner, and when I was a resident, George was my immediate superior as one of the assistants on the faculty, so I got to know him very well. At an American Medical Association meeting, we met and decided to organize such a society. They asked me if I would prepare a constitution and bylaws, which I did. Over the next few years we met, gradually increased the membership, and the Society took off.

Blaisdell: The meetings were held at the time of the AMA?

DeBakey: Originally.

Blaisdell: What was the reason for that?

DeBakey: Largely because the surgical segment of the AMA was one of the major meeting places for the national meeting for surgeons. At that time the surgery section was very well led. You remember, in those days people like Fred Rankin, Evarts Graham, and Alton Ochsner were chairmen of the surgical sections of the AMA. It was only later that the surgical part of the AMA really lost that kind of prestige, to a large extent because of the American College of Surgeons.

Blaisdell: What do you remember about those initial meetings? Do you remember anything about the programs? How they were organized?

DeBakey: The programs were actually organized by the secretary, who would call upon various people to make presentations. Then the members began some research work, which they would report at the meetings. By 1950, there was a considerable amount of research on arterial prostheses, beginning with homografts. At that time, the interest was focused on how to preserve homografts, and we went to a freezing process for preservation. Arthur Voorhees in New York initiated a concept with the use of

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prostheses by his experimental work on various types of grafts. We would make our presentations and exchange information at the meetings. The discussions became lively because of all these fellows, I would say about 25 or 30 in the field. A surgeon in California, Norman Freeman, was very active. He had a brother in Washington who was a psychiatrist. I think he was one of the first to perform a lobotomy. Norman was responsible for establishing Vascular Surgery at the University of California, San Francisco. I was very fond of Norman. He was full of ideas.

Blaisdell: Now, the Homan's lecture was established in that period also.

DeBakey: That's right, the Homan's lecture, and the Matas medal, and later, the Leriche medal were established. These, too, were a stimulus for vascular surgery. More and more interest began to develop, but from a technical standpoint. Something technical was needed to really take hold. In this respect, we had two surgical procedures, bypass and endarterectomy, but more important was diagnostic arteriography. It was the arteriogram that enabled us to identify the lesion, to actually see the arterial bed, and to determine that there was a good arterial bed beyond the block, which made the bypass applicable.

Blaisdell: René Fontaine was one of your first Homan Lecturers?

DeBakey: René Fontaine was Associate Professor under Leriche in Strasbourg when I was there as a Fellow. When Leriche moved from Strasbourg to the College in Paris, which was one of the great professorships in France, Fontaine became head of that clinic. Fontaine really got into vascular surgery through sympathectomy.

Blaisdell: That was about all you could do at that time.

DeBakey: Yes, that is really why I went to Leriche's Clinic to spend a year with him, because he was the leading proponent of sympathectomy.

Blaisdell: Let's go on regarding your experience with The Society for Vascular Surgery. You were the seventh President of The Society for Vascular Surgery. Were the early papers presented at the Society published?

DeBakey: No, unfortunately, they were not. Only later were the articles presented submitted to *Surgery.* The reason for that was that Drs. Alton Ochsner and Owen Wangensteen, who were the editors of *Surgery,* had started this new journal. In starting a new journal, they were looking for scientific papers because they had to compete with the journals that already existed. So we immediately went to them and said we would submit papers to them. But we did not have a contract with them to publish all of our papers or to publish the transactions. That came later.

Blaisdell: Do you remember what year the journal *Surgery* started?

DeBakey: The first issue was dated January 1937.

Blaisdell: About the time the Society started?

DeBakey: No, the Society was formed about 10 years later. Not having our own journal was one of our weaknesses. We talked about the possibility of starting our own journal. The Europeans had preceded us in developing a journal, but we had this informal agreement with *Surgery,* which put us in an awkward position. That was the reason we were a little reluctant to do anything. Moreover, *Surgery* really did a pretty good job; from 60% to 70% of the articles that were presented at the meetings were published.

Blaisdell: Now, you were involved with starting the *Journal of Vascular Surgery,* but that came many, many years later.

DeBakey: Yes, much later.

Blaisdell: Where do you think the organization is going in the future? Do you think we have solved all of the problems in vascular surgery?

DeBakey: Not by any means. Just think for a moment, Bill, from your own experience. Arterial occlusive disease and arterial aneurysmal disease for the most part are of unknown origin. No matter what the cholesterol proponents say, we still don't know the cause. And until we know the cause, we will not have any effective means of prevention. So the disease will continue to occur. All industrial countries have an increasingly older population, and we know that many of these diseases are also a result of time. To be sure, young people do not have aneurysmal and occlusive arterial diseases, but as you know, they will develop in most of them after the age of 50 years all the way up to 80 years. We are seeing more and more people in their late 60s, 70s, and 80s on whom we are operating for these diseases. We have an expanded market, so vascular surgeons for the future have an expanding role. There is no question that we have to continue innovative developments to advance the field technically.

Blaisdell: What do you think about the interventional radiologists and minimal access surgery? What is their potential?

DeBakey: I think that vascular surgeons should take control of this for a number of reasons. First, vascular surgeons are the best equipped, both conceptually, and most important, Bill, technically. Most physicians who aren't in the field regard surgery as a technical exercise. But as you know, the conceptual aspect of surgery is the driving force for the technical exercise. And if the technical exercise is really going to be effective, successful, and useful, it must be based upon a good concept. The vascular surgeon has that conceptual background to deal with this kind of problem. These kinds of innovations are associated with certain risks which can be successfully handled only by someone who has the conceptual capability of technically dealing with the risks. I therefore think that interventional radiology and minimal access surgery still belong in the field of vascular surgery and that vascular surgeons should maintain control. To do this, they must be in control either of the radiologic equipment or the radiologist. Otherwise, there will be competition between radiologists and surgeons, and if the radiologist controls the equipment, he will be able to keep the surgeon out of it. If they work together, however, using the equipment together, they can be successful. But I do think that the vascular surgeon must be aggressive about it. If the radiologist doesn't cooperate, surgeons must find a way to get their own radiologic equipment just as if they are going to do laparoscopic work,

they must get their own monitoring equipment as well as radiologic equipment and even scanners that they bring right into the operating room. In other words, the surgeon must be in control of what he does. If he needs a heart-lung machine, he brings it right into the operating room. He doesn't have a perfusionist telling him what he can do with it. He must be in control.

Blaisdell: In terms of the development of the Dacron graft, what would be the impact of the present-day Food and Drug Administration when you tried to introduce the prosthesis?

DeBakey: If we now tried to develop the Dacron graft the way we developed it, I am not sure we would have it today with the way they regulate things. I will give you a good illustration. I began to work in the laboratory actually making Dacron out of sheets at that time. When I went down to the department store to get some vinyon "N" cloth, they didn't have any. So I said, "Do you have nylon?" They said, "We are fresh out of nylon, but we do have a new material called Dacron." I felt it, and it looked good to me. So I bought a yard of it. You have to remember that my mother was a kind of sewing instructor. In those days when you were growing up as a boy, girls were supposed to sew. So after school, she would always have about six or seven young girls come to the house, and she would spend about an hour with them teaching them how to sew, and I sat there with them. She saw I was interested, so she taught me how to sew. In fact, I taught my wife how to sew. So I had this sense of what you could do with a sewing machine. I took this yard of Dacron cloth, I cut two sheets in the width I wanted, sewed the edges on each side, and made a tube out of it. Later, we made our own crimping, and Sterling Edwards deserves the credit for that. We put the graft on a stent, wrapped nylon thread around it, pushed it together, and baked it. That would change the "memory" in the fiber, and it would crimp. We did that all ourselves in the laboratory. After about two or three years of laboratory work, on my own, I decided that it was time to put the graft in a human being. We had good patency in the grafts in the dogs. I did not have a committee to approve it. In 1954 I made a bifurcation graft of the size I wanted for a human being and made several different sizes so I had them available. They weren't crimped. In 1954 I put the first one in during an abdominal aortic aneurysm resection. That first patient lived, I think, for 13 years and never had any trouble. I kept in touch with him regularly. He died of a heart attack in Oklahoma.

To show you the difference today, in 1983, I told the people at Bard that I would like for them to make these albumin-coated grafts, because we were doing this in the operating room for patients on whom we would perform aortic resection. We would take a Dacron graft, immerse it in albumin that is used for intravenous infusions, and then bake it a little bit, which would seal it. That is what I asked Bard to do, because they were making my Dacron grafts. They began making the albumin-coated grafts. The first year that they made them, they sealed them in sort of a saline solution. But the manufacturing process was so involved that they said, "Let's stop for a while and see if we can do it some other way." To which I agreed. A year later, I think in 1986 or 1987, we started again. We had to go to the FDA; they insisted on our going through the whole process from the beginning. We had this Dacron graft that had been used successfully for over 30 years, and albumin has been used intravenously for over 40 years. When we put them together, they decided we had to go through the whole process. We even had to do experimental work. We did it in dogs and had to demonstrate what had happened to the albumin. It was absorbed completely in about 6 weeks, and you were left with the graft. It took 10 years to finally get approval from the FDA. In the meantime, it was approved all over the world. It was being used everywhere, except here. So that gives you some idea of what you would have to go through. There is no question that the FDA is holding back technical developments. Many of the pharmaceutical companies go abroad to do their clinical work.

Blaisdell: What about cardiac and vascular surgery? Are they destined to separate completely into separate specialties?

DeBakey: Well, my philosophy has long been that the cardiovascular system is a united system. I think it is a mistake to separate the heart from the rest of the vascular system. If you look at it from a clinical standpoint, cardiovascular work is dependent on the diseases that involve the aorta and the four major arterial beds of the body: the coronary system, the branches of the aortic arch, the abdominal visceral vessels, and the peripheral vascular system of the lower extremity. When a patient comes in with a lesion in any one of these areas, we will study the entire patient. If he comes in with a lesion of the renal artery, we want to know what his cardiac status is. We may not perform coronary arteriography, which may not be necessary, but we will study his physical condition enough to know that he has a good functioning heart. If he doesn't, we may perform coronary arteriography.

Blaisdell: We were on the subject of whether cardiac and vascular are separate specialties. There is a practical problem, Dr. DeBakey, of your concept, and that is that one trains in cardiac surgery or one trains in vascular surgery. And so far we haven't melded that too much. The cardiac surgeons certainly feel comfortable on the basis of their training with thoracic vascular procedures, but there is the issue of the peripheral vascular aspects of the surgery.

DeBakey: Well, there is no question about that, and my concept is not very popular right now. That is evidenced by the fact that you have boards that separate the two. I just happen to think that was a mistake. There was nothing I could do about it at the time, except express my opinion, but the opinion of the majority was that they wanted a board in vascular surgery, and that resulted in the separation. When I was head of the department, I continued to maintain my concept and philosophy of cardiovascular disease even though I established a residency program in vascular surgery in order to meet the needs of the Board. But I still think that from an overall standpoint, if a cardiovascular center is well organized and well directed, the fact that there are

people who are working in the vascular and cardiac fields may not make that great a difference, if they are working together. What I am saying is, again, I am going back to the premise that the conceptual consideration of surgery constitutes a very important basis for the specialty of the technical aspects in taking care of the patient. If you take care of the patient, you want to know all about him. If you were to concentrate on just one aspect and disregard the other aspects, you are not going to give him the best possible care.

Blaisdell: Let's divert here and ask you to comment on the role of the Lifeline Foundation.

DeBakey: The Lifeline Foundation is extremely important because it now has a role in helping to advance and direct research, and it has the money to do this. That is extremely important for several reasons. One is that the National Institutes of Health (NIH), which is a major source of research funding, has gradually reduced support for clinical research. That was almost a natural development because the basic scientists began to develop more and more and control the study sections. At one time we had a surgery study section, and that was virtually eliminated. With the decrease in funding in relation to the number of grant applications, NIH is able to fund only about 13% of the approved grants. Therefore, NIH funding for research in the clinical field, and cardiovascular surgery is a clinical field, has virtually dried up.

Blaisdell: What is your perception of the role of industry support?

DeBakey: Industry should support research, but you must keep in mind that industry also has its own agenda. The pharmaceutical industry, for example, puts quite a bit of money into research. The other particular industry we are dealing with, of course, is the device industry. They certainly have some obligation to support research. But the Lifeline Foundation creates a mechanism by which you can put a little pressure on them and in a sense stimulate them to do so. The Lifeline Foundation was a great idea, and it is extremely important for the future of vascular surgery.

Blaisdell: Where do you think The Society for Vascular Surgery is going to be 100 years from now?

DeBakey: It will depend to a large extent on research in atherosclerosis. If, for example, we find a specific cause of arteriosclerosis and we find a vaccine, you will be able to vaccinate a child against arteriosclerosis. Then, a large part of vascular surgery will disappear. There will be, in my opinion, problems related to trauma and probably some diseases that we will not have completely solved by that time. Because the cardiovascular system is so essential to life, it has to be maintained, and if anything interferes with its proper functioning, we must find a way to correct it. Cardiovascular surgeons in particular, are the ones best capable of doing so. If research itself does not solve the problem, the need for cardiovascular surgery will still be there.

Blaisdell: Just a final question. What would be your advice to young surgeons at this time, who might be thinking about entering the vascular field?

DeBakey: I still think it is one of the most fascinating and challenging fields in surgery. I know neurosurgeons think theirs is, and other surgeons in other fields think theirs is. I may be biased, but, as you know, we have a wide variety of challenges in the cardiovascular field. There is so much from a technical, conceptual, even basic science aspect that the opportunities are so much greater in the cardiovascular field than in other fields. Any youngster who is willing to commit himself to it could not find a more satisfying career. But he must be dedicated. He also must have a great deal of self discipline and be willing to give it all the time that it demands. If he does, he should have an extremely satisfying career.

Blaisdell: Thank you very much, Dr. DeBakey.