Mr. Vivien Thomas Discusses

Dr. Alfred Blalock

PREFACE

Mr. Vivien T. Thomas was born in New Iberia, Louisiana on August 29, 1910. As a child of preschool age, he moved with his family to Nashville, Tennessee where he attended public schools. He graduated from high school in 1929. During high school he worked with his father, a carpenter and contractor, on afternoons and Saturdays. Working independently during the summer of 1929, he was able to save enough money to enter Tennessee A & I College in the fall of 1929 as a premedical student. His savings disappeared in the bank crash of November, 1929 and he had to leave college in the spring of 1930 to find employment. Learning of a position in the surgical laboratories at Vanderbilt University Medical School, Mr. Thomas applied. He began working on February 10, 1930. From this date until June 30, 1964, Mr. Thomas was a laboratory assistant and colleague of Dr. Alfred Blalock.

Because of this intimate working relationship, Mr. Thomas was approached for an interview about Dr. Blalock. In this interview, Mr. Thomas describes his association with Dr. Blalock at Vanderbilt and Johns Hopkins.

Mr. Thomas, who is still the Supervisor of the Surgical Research Laboratory at Johns Hopkins, has been the teacher of laboratory techniques to more than a generation of surgeons.

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This is an interview held with Mr. Vivien Thomas of the Department of Surgery, Johns Hopkins Hospital. The date of the interview is April 20, 1967. The interviewer is Dr. Peter D. Olch of the National Library of Medicine. We are holding this interview in the Surgical Research Laboratories of the Department of Surgery at the Johns Hopkins Hospital. The topic for discussion is Mr. Thomas's association with Dr. Alfred Blalock as his surgical technician.

Dr. O.:

Could you tell me when you first met Dr. Blalock and what the circumstances were that brought the two of you together?

Mr. T.:

That was a long time ago. In fact it was 1930. I had to drop out of school. I had registered in college in 1929 after coming out of high school and had started in, when the banks closed on me that same fall (November). I just dropped right out because I knew that I didn't have any financial backing.

Dr. O.:

Was this in Nashville?

Mr. T.:

Yes, I finished high school there and entered Tennessee State in the fall of the same year the banks closed.

After Christmas, I asked a friend of mine who worked at Vanderbilt if there wasn't something out there that I could do. He said he knew of a job, but wasn't sure I would want to work with this particular doctor. In fact, he wasn't sure I would even want to work out there in the first place, knowing me and knowing him (Dr. Blalock). Well anyway I went out with him and waited for Dr. Blalock in his office that morning. He came in and said he was on his way to the operating room and if I could wait around for about an hour he would be back. So that was when I first met him. It was February 10, 1930.

Dr. O.:

Was Dr. Blalock the Professor of Surgery by 1930?

Mr. T.:

No, he wasn't too long off the housestaff.

He had his own ideas about his lab work, about what he wanted to do. What he told me at that time was that he was getting

more and more tied up with clinical work and some administrative work, and though he had someone working with him part time, a classmate of mine, he wanted somebody to work with him full time, to work in the lab with him and learn to do things inasmuch as he was going to be able to spend less and less time in the lab. He did want all of his work to go on and he wanted somebody to learn how to do the various things and, as a matter of fact, to do some things he couldn't do. So even then he had some idea of what he was after.

Dr. O.:

Were the surgical labs at Vanderbilt very closely under the thumb of Barney Brooks (Professor of Surgery), or did he give the staff pretty much free rein to work on their own projects?

Mr. T.:

Pretty free rein, pretty free rein. Dr. Blalock was actually in charge of the laboratory there. At that time he was in charge of the research facilities, and I worked directly for Dr. Blalock. I wasn't responsible to any of the other people on the floor. As a matter of fact, on several occasions he called my hand for getting involved with someone else, giving them a hand.

Dr. O.:

So you really were strictly his surgical technician from the beginning to the end. One of the things I have wondered--was it Dr. Blalock or someone else who contributed to your early surgical training? It has been obvious to me and others that you are such a supreme surgical technologist, I am wondering who your teachers were?

Mr. T.:

One of the people who was important--he was assistant resident, resident, and I think spent a year as a full time Fellow--was Joe Beard. He spent a lot of time in the lab. As a matter of fact, the operator was always paging him and looking for him and he would hear his page while in the lab and wouldn't answer them. When they found out where he was, the telephone would ring off the wall! He is now down at Duke. He showed an interest in getting me started. I give him a lot of credit for the influence he had on me, because not knowing where I was headed--I originally thought of going into medicine, I liked the field, and when I entered college I had thought of going on through medicine, but economically it was impossible--so after talking with Dr. Beard and working with him I think I felt his influence.

Dr. O.:

So actually Dr. Beard conceivably contributed to your training in surgery, more than Dr. Blalock.

Mr. T.:

During that time with many of the projects, we were doing a fair amount of chemistries in the shock projects that were going on. Dr. Beard had me doing analyses and the various chemistries as well as the surgery. We stayed at it all day long. As a matter of fact, it wasn't anything to work a 16 hour day. When you studied shock, it was one of those things you couldn't do in an 8-hour day. By the time you got started in the morning, it was 9 or 9:30 and you couldn't quit at 5 o'clock, as a matter of fact, you might find the animal just going into shock at that time so you worked on into the night. They never paid overtime so you got some extra time off another time. Certain hours were expected of you. Inasmuch as I enjoyed this work, I liked it, it wasn't a hard chore or a grind; you were doing something you were interested in and enjoyed so that other than my work cutting into my social life at the age I was at the time, it was fine.

Dr. O.:

Was Dr. Leeds or Dr. Levy working on the shock experiments with you and Dr. Beard?

Mr. T.:

No, he came later. He came in as a Fellow later.

Dr. O.:

In Dr. Blalock's book on shock, published in the '40s, in the Forward he gives credit to you, Dr. Leeds, and I thought Beard was in there too.

Mr. T.:

Well, you see, this book covered a period of years. You are talking about a period from around 1930 till near 1940. Cressman was I think the last Fellow he had there at Vanderbilt and he was there around 1936 or 1938, and Levy had been there preceding Cressman, so this is over a period of seven or eight years. Some of the other fellows who worked around there weren't full time Fellows, but were students, Dr. Rollin Daniel who is still around Nashville, a fellow by the name of Upchurch and so on. I can't remember the names of all of them.

Dr. O.:

Vivien, what do you think was the most important work done by your group there, the shock work or the pulmonary hypertension studies?

Mr. T.:

Well, you know the pulmonary hypertension studies, as such, were a flop. We set out to produce pulmonary hypertension, but it did not pan out.

Dr. O.:

The gold mine of those experiments was the technique developed.

Mr. T.:

Yes, the technique, because we set out to produce pulmonary hypertension but when the systemic circulation was dumped into the pulmonary circulation the pressure just banged off to zero. There just wasn't any peripheral resistance there to build up any pressure. There were some pathological changes particularly in the pulmonary artery, but that was just from the rush of the blood.

As a matter of fact, I think we brought some of those animals up here with us (to Hopkins from Vanderbilt). We had some of them for a long period of time; I think there were five of them. I don't think anything was ever published in the way of a long term follow up.

Actually, the work he (Dr. Blalock) was doing at the time I started working with him was on burns. It was one of the most unpleasant things I have ever run into, to walk

into a laboratory when somebody is producing burns. You had to be able to stomach that to start to work. For the first few days around there I wasn't particular about lunch! What I started to say was that the work he was doing on shock at that time, I am not sure that it had been fully accepted. One day I even asked him what he would do if someone proved him to be wrong and he said that you would just keep your mouth shut. You don't say anything! I think at the time that I started working with him, what he actually was trying to do was to build up enough counter results to really get his work accepted as more or less gospel. He came along with this fluid loss business as the cause of shock, following the work of some other outstanding researchers who had different ideas, and it wasn't easy to get it accepted. So he continued to work on it through '37 or '38 in order to firm up the ground under his feet. He and Dr. Tinsley Harrison did quite a bit of work on hypertension around '37 and '38 also.

Dr. O.:

Is this the time you were transplanting kidneys to the necks of dogs?

Mr. T.:

That was part of it. We also studied the Goldblatt hypertension which he was studying. Dr. Harrison, being in medicine, was trying to extract renin from the kidney in order to produce hypertension systemically without any surgical procedures. He and his technician, James Lewis, were working in their laboratory along with us in our lab. They were doing the medical end producing all of these various extracts while we were doing all of the surgery. We were furnishing all of these hypertensive kidneys, the Goldblatt kidneys. They were trying to get out something from these ischemic kidneys that could be injected to cause hypertension. It was then that we got pulled into the study of pulmonary hypertension. I know one thing, Dr. Blalock over the years never put all of his eggs in one basket. He always had several different projects going at the same time.

He had another project on lymphatic blockage, chylothorax. This was quite interesting. He was trying to produce traumatic asphyxia. He said he wanted a white dog, shaved completely from his head down to his diaphragm, front and back, all over. When we got the animal all ready for him, he wanted to go into the right side of the chest. He

ligated the superior (vena) cava. As we stood there watching, he told us what he was trying to do. I guess it was me and Sam Waters, an older technician, an older man, like Claude Brown was around here. He told us that people came in with traumatic asphyxia, with the upper body all dark and discolored and the remainder of the body remained normal in color. He was trying to reproduce this. We watched the animal there and nothing happened after the superior cava was ligated. He closed up and took the animal back upstairs and checked him the next day or two and he still looked pretty normal. We put him back up in the kennel and more or less forgot about him. In about ten days or two weeks, the dog was dead and at autopsy the chest was filled with this milky chylous fluid. He essentially smothered in his own chylous fluid. This led us to a study of lymphatic obstruction.

Dr. O.:

What made you decide to pick up and move from Nashville to Baltimore? Was this a pretty difficult decision to make?

Mr. T.:

It was a difficult decision to make, but there were so many things involved. By this time it was obvious that I was not going back to school. I was married and had two

children. In 1940, it was not a matter of whether we were going to get into the war, but when we were going to get into it. This Hopkins deal came through at Thanksgiving or Christmas time of 1940, and we came up here July 1 of 1941.

Dr. Blalock told me before he came up here for his first interview that he was pretty sure he was going to accept the position, but he wanted me to know and that he wanted me to come with him. I told him I would consider it. I discussed the matter with my wife, but she left the decision strictly up to me. I felt that if I stayed in the field then the risk of my being called into the service was less for one thing. I enjoyed this work. I had been brought up in a different field in that my father was a contractor, a carpenter and contractor and we used to build the detached type of houses we lived in down in central Tennessee. I still have a brother who is in the construction business. The second thing on my mind was that if I stayed there, that is what I would do, but during this period construction had about stopped because of the war effort. I had my own home there and had been married for eight years so the home was a little hard to leave, but one day Dr. Brooks settled it all for us. He came

through the lab and said, "Vivien, you going to Baltimore with Dr. Blalock?" I told him I was thinking about it very seriously. He said, "I just wanted to find out, because you and Mrs. Grebel, neither one of you have a job here!" She wasn't Mrs. Grebel then, she was Miss Wolfe. That kind of settled whether or not I was going to stay around Vanderbilt!

Dr. O.:

That sounds like the Dr. Brooks I have heard about. I gather he could be rather blunt and to the point.

When Dr. Blalock first came to Baltimore, did you see less of him in the laboratory?

Mr. T.:

It took awhile to get things rolling here. We found the facilities far inferior to those at Vanderbilt. I was really quite disappointed when I first arrived here. The equipment, the instruments, the building as such, the availability of supplies all were a problem. Tom Satterfield, who was the chief technician there in the Old Hunterian Laboratory was very helpful and showed me around, but I was surprised at what they didn't have. We had a well stocked lab at Vanderbilt. So we started buying the

things we needed. It took a good six months to gather the material because surgical instruments were so hard to get. The army was taking everything. We had quite a bit of trouble getting anything.

Dr. O.:

Where was the laboratory in which you worked in the Old Hunterian?

Mr. T.:

We had the whole building. We had the middle floor; it was a split-level thing.

Dr. O.:

The classroom was to the right on that middle floor as you walked in and your lab was to the left wasn't it?

Mr. T.:

Yes, we had the lab and offices all the way across the left end of the middle floor.

Dr. O.:

What was on the top floor of the building?

Mr. T.:

On the top floor was an X ray unit and laboratory space. Dr. Firor worked up there for some years, and when I first

came here, Dr. Price and Dr. Austin Lamont, who was interested in anesthesiology, was working up there. Dr. Poth was also working in the Hunterian when I arrived.

Dr. O.:

Yes, He and Dr. Firor were working on intestinal antisepsis with antibiotics.

Mr. T.:

With the start of the war in December, the whole place was stripped down in personnel. At one time there were three people in the lab. By early '42, there was Tom Satterfield, myself, and Pop--we called him--his name was Ludwig Wallopich, who took care of the animals. A little short fellow. The three of us during the war were it. We took care of the lab. There was nobody coming or going. Everybody was off with the units in the service. The housestaff was cut back to such a point that there was nobody free to work in the lab.

Dr. O.:

Was there a course in dog surgery for the medical students then?

Mr. T.:

Yes. The students went year around then. We had the Navy program then. What was it called, V-12 or something like

that? Also the army boys. Everybody was in uniform and school went year around. No break at all; you started right back in June and that would finish in March and start right back in again.

We had classes in dog surgery twice a week, whereas now we only have them once a week for three quarters.

(Discussion of current schedule for dog surgery in medical school curriculum is deleted from transcription.)

Dr. O.:

In Dr. Ravitch's introduction to the Collected Papers of Alfred Blalock, the statement is made that you were standing by at the operating table when Dr. Blalock did the first dozen cases of Tetralogy of Fallot. Asking you to be quite candid, my impression is that you were standing by Dr. Blalock's side for more than just the first twelve procedures.

Mr. T.:

I wouldn't like to try to count the number of them, but I didn't get very far from the operating room for--from the time after he had done the first three patients of course and after they were reported, which took three or four months--well after that for the next six months when

the flood of patients started coming in, I was in that operating room every day for at least six months. In that period of time, I am sure he did over 100 patients, probably 150. And he would not let me get away from that operating room. I don't think he actually wanted anything. It was just moral support after a certain time. He would miss me and say, "Where is Vivien?", and if Vivien wasn't there, "Well find him!" One day they had a hard time finding me because, at the time this thing started, it was purely a lab thing. I mean it was not clinical. The saturation studies on all of these kids, the hematocrits, hemoglobins--a girl named Clara Belle Puryear (now wife of Dr. C. Martin Rhode) was here at the time. She had come in at the tail end of the project in the lab, and she and I were doing all of the lab work on these patients. I was doing the arterial punctures. Those patients were spread between Harriet Lane 4, Harriet Lane 2, Halsted 2, Halsted 7, and Halsted 6. Also Halsted 3. But the problem was they were not all in one place, so I was running all over the place, plus the Cardiac Clinic down in the basement of Harriet Lane, Dr. Taussig's place. I was running between here and there. Now besides doing the pre op. studies, we were doing the post ops. on them. I still have records around here from some of these patients on file cards.

Any patient Dr. Blalock was going to do tomorrow morning had to be done today. That result had to be in the operating room that morning before he started operating. Now it might be 10 o'clock tonight before you got those results, which meant that in the morning you were going to be over here, as I was every morning at 7 o'clock! Clara Belle and I would take a break to go to supper and come right back over there to that lab, because we would do as many as 10 or 12 patients a day. These were pre op. studies. And then the follow-ups on some of them, and a little further along the line those that would come back for a three month checkup would also be in the schedule and I would have to be down in the clinic to catch them. I was doing all of the arterial punctures.

Dr. O.:

This must have been prior to the time that this chap, Bing, came on board.

Mr. T.:

I ended up in the hospital. Bing was there. Dr. Bing had started. As you know, he was a physiologist, and he will verify this. He and I did the first catheterization (cardiac) here in Halsted when the cath lab was first set up. I did the cut down--this was real amusing, amusing in

retrospect--we had never seen any catheterization done and we never had seen any of these defects, so we took the catheter and went down, we could see it pass down through the fluoroscope--it went down through the superior cava into the heart and straight out into the left lung field! Well, we knew that wasn't the direction of the circulation of the blood.

Dr. O.:

That must have been quite a jolt when you saw this.

Mr. T.:

Well, we didn't know how hard we were supposed to be pushing. We jiggled this thing and then pulled back--the kid must have been four or five years old, or six years old--and we asked, "You feel alright?" Then we pulled it back until it was just above the heart on the right side and then we pushed it back down again, back down, taking samples here and there, not knowing where the thing was. Of course, it never dawned on us at the time--to see this thing go out in the lung field--we didn't know if there was too much pressure on the catheter so that we had pushed right straight through the wall of the heart or whether there was a hole there or just what. We just knew that that was not the anatomy of the heart! So in doing the

samples we found out that it was just a big ISD (intra-septal defect). The various blood samples showed us that. Now, we didn't know this while we were doing the procedure and both of us broke out in a cold sweat!

Dr. O.:

It is amazing to contrast this with the present facilities, the Wellcome Cardiac Catheterization Lab.

Mr. T.:

That's right. You know, we ran all these things on the Van Slyke machine, everything in duplicate. All the oxygens were done on the Van Slykes in duplicate. You would do six samples per hour; that's production. You are doing pretty good to run six of those samples an hour. You were calculating all the time. You were pushing, pushing all the time to do six an hour.

Dr. O.:

You certainly were opening up new avenues, there is no question of that.

To get back to your presence in the operating room, I think it is very interesting that Dr. Blalock may have needed moral support, but is there not possibly an element here

of his inexperience at doing vascular surgery? You were doing the majority of the vascular surgery in the laboratory. Here he was in a clinical situation, not having done this procedure in the laboratory.

Mr. T.:

That's exactly it. I mean, I had done all of them. Two days before he was scheduled to do the first one--Eileen Saxon, the very first one--he arranged to come over to the lab and help me do one. He had stood over and watched me from time to time, coming in in the middle of the procedure. I don't think he ever did stand and watch one from start to finish until he actually got ready to do the first patient. He came over and said he would help me do one, which he did. This was two or three days before Eileen was done. He was planning on helping me do one and then doing a couple himself. However, Eileen's condition was such, plus his time being restricted, that he never had time to come back and actually do one of them himself.

Dr. O.:

So he went to the operating room for Number 1 on the basis of having assisted you with one pulmonary--subclavian anastamosis.

Mr. T.:

That's right. Even at Vanderbilt, with the work on pulmonary hypertension he hadn't done any of those at all. Sanford Levy and I did them.

Dr. O.:

This, of course, makes you one of the most unsung heroes in the annals of medicine for quite some time. Certainly the record should show that it is Mr. Vivien Thomas who should get an awful lot of the credit that has gone to Dr. Blalock for this particular procedure.

Mr. T.:

Well, I will let you historians take care of that.

Dr. O.:

Well, this is one of the things this oral history project can do.

Mr. T.:

Well, there are people still living who can verify this. I mean I don't care about this being restricted. I have no qualms about whatever I say because I know it is true and it can't be disputed.

One thing that happened right here, and I am not playing

this as an issue. Have you ever tried to page anyone here that wasn't on the staff? Even try to find a student? That operator down there will give you a hard time. One day they had trouble finding me for that operating room and I was in the main corridor around near the administration building coming back over here. My name comes out over that loudspeaker and I didn't even answer it; I knew where it was coming from! I knew exactly what it was. He probably couldn't find me in the operating room, so he told them to page and they paged!

Dr. O.:

It always used to strike me as an intern, scrubbed on a case with Dr. Blalock, he would continually ask the resident--for instance with Bud Nelson, "Bud, do you think this is long enough? Bud do you think I should suture it here? Bud, this; Bud, that." A number of people have commented upon this--I believe Dr. Ravitch felt this was his way of teaching. I think that this is not being honest with ourselves. I have always had the feeling that Dr. Blalock was perhaps a little insecure and he was the sort of person that literally needed the support of the man with him at the table. He was not what you would consider a great cutting surgeon.

Mr. T.:

I don't think Dr. Blalock, by any stretch of the imagination, was a great technician. I tend to agree with what you are saying.

The Pithotomy Show is always a great mirror. You have a pretty good impression of what people think of you. It gives you a pretty broad outline.

Dr. O.:

Did he ever comment to you about the take-offs on him in the Pithotomy Show?

Mr. T.:

No, he didn't. He never did, but I am sure the reason that he didn't was because that he was guilty!

Dr. O.:

This, of course, is true. He particularly would not admit this weakness to you.

Mr. T.:

They (the Pithotomy Show) pulled that Longmire thing on him, what was it? "Al, aren't you ever going to learn to do anything by yourself?"

Dr. O.:

Certainly, in a sense he was made by the people that went through his residency here. People like Hank Bahnson, Bill Longmire, many of these men were fine technicians and went on to do some rather phenomenal things in their own areas of surgery. Even though he did not train them as surgical technicians, there was something about the man that produced good surgeons.

Mr. T.:

Well, Longmire, I think, was just a natural born surgeon. He was so darn slick. He was a resident at the time of the Tetralogy work. He was Chief Resident. As a matter of fact, very early in this influx of patients, for some reason or other Dr. Blalock had to leave town and was gone for three or four days, and Bill Longmire just went right on through with them, no questions asked. He just went ahead and did them with no problems.

Dr. O.:

You've seen many residents come through this place, working in the lab, etc., who in your mind are some of Dr. Blalock's outstanding men?

Mr. T.:

In recent years I didn't really see that much of them,

from Bahnson's time up until now. But Longmire for one, he was probably the best one, and Denton Cooley I would put as number two--it is hard to categorize them. Except for the fellows who worked in the lab, I didn't really see enough of the rest of them.

I always said that when Longmire was here, that if I had to be cut on, I would feel mighty easy going to sleep if I knew he was the one who was going to do it.

Dr. O.:
I think that is a feeling shared by many people. He is very well thought of.

Mr. T.:
You know some of Ravitch's information, some of the things he said in his biography of Dr. Blalock, I don't exactly agree with. As a matter of fact, I called his hand when he was here and presented the volumes downstairs. (at the meeting of the 1967 Johns Hopkins Medical and Surgical Association) I told him he did not have enough consultation on some of the stuff he had written. I told him he should have gone around and talked to a few more people, that maybe he pushed it too fast. He said that he didn't have long to do it in. Some of it just doesn't ring quite

true. I am afraid that any of his former residents, who try to do a decent biography of him will be so one sided.

Dr. O.:

That's very true. When you are so close to a person and have been trained by him, it is difficult to see the other side, and if you see it, to want to put it down in cold turkey terms. For example, Dr. Ravitch doesn't make any mention of it at all, but I gather things were a little sticky around here shortly after the Blalock-Taussig procedure was developed as far as credit for the procedure and dropping Dr. Taussig's name off the procedure which I'm sure was rather unpleasant for people like yourself, who were intimately involved with the two parties concerned.

Mr. T.:

That was very unfortunate. I think it was smallness on somebody's part. I don't know how the idea started, or why anybody should question the dual credit for it. Which one, or both of them, why there should be any disagreement, because I don't know where the thing was first presented, but one day Dr. Blalock came to me and told me, or called me and told me, that Dr. Taussig had something

that she wanted to talk to us about, and could I be available at such and such a time when she was going to come over and he would meet her. Dr. Taussig had treated these patients over the years and she knew the physiological, the anatomical problems involved. As I said, I don't know where the discussions first started, but she went into minute detail in the dog house over there, drawing sketches of the problem involved in the circulation of these tetralogies, exactly what the physiology was, the anatomical set-up, the circulation, etc. She felt that it was purely a mechanical thing and felt that there should be something that could be done about it surgically to either completely correct, or at least to alleviate it. The problem was to get more blood into those lungs, period! That was the way she presented it.

That is what she presented to Dr. Blalock and me in detail. Really, it may have been the first time she had gone into it with him, or whether she was doing it just for my benefit, I don't know, but that is the way she gave it that day. It was purely a mechanical thing and it seemed to her that there should be some way to alleviate or correct it by some method of getting blood past this constriction in the pulmonary artery, by diverting blood from somewhere

to get more blood to the lungs. That was the problem she left with us. She made no suggestion as to what, or how to do it. It was purely a problem that was presented to you with no suggestions as to how to go about doing it.

I look at it this way. If she suggested it, even though she didn't give the direct method of doing it, if she presented the problem the way she presented it, she is due as much credit for having presented it, as he is or I am, of being able to do anything about it. If you could have heard her tell it; it was something that anyone not familiar with the field never would have thought up. He never would have come up with it; nobody else would have come up with it at that time unless somebody had presented the full blown idea as she presented it that day.

We spent months and months of wasted time. In retrospect it was wasted time, but I learned a heck of a lot from it. We tried to produce some of these lesions. Now all of this stuff is very simple, but looking back on it, everything was quite complicated then. Nobody had fooled around with the heart. We had no idea of what trouble we were going to get into. Now it is very simple to produce pulmonary stenosis. After having read a few journals and what not, it pops in your mind very soon that what happens

is the blood shunts off somewhere because there is an opening there. But we tried to produce pulmonary stenosis without allowing for someplace for the blood to go. We eventually ended up producing everything but the over riding aorta; we had the interventricular defects, interatrial defects and we had a pulmonary stenosis finally produced in combination. At one time we had five animals going with these defects, but originally we had wasted time trying to produce these things in an impossible manner by trying to constrict the pulmonary artery. Everything we would put around it (the pulmonary artery), everything we would do, that ventricle would just hypertrophy and it would cut through or something would always go wrong, because we didn't have anywhere to shunt the blood. We ended up painting the valve with nitric acid, fuming nitric acid. It scarred up the valve but good.

Dr. O.:

Once you had established a method for developing pulmonary stenosis in a number of dogs, then you used them for performing subclavian artery-pulmonary anastamosis, is that correct?

Mr. T.:

Yes, but that was after we had done a couple of hundred

patients. He had gone ahead and started doing this procedure on patients on the basis of the pulmonary hypertension studies.

Dr. O.:

Right. On the basis that you had a technique that could create this shunt.

Mr. T.:

Yes, and on the basis that it was not lethal. You knew that you could tolerate ligation of the subclavian artery or carotid artery. We went back to the literature and checked out some of Dr. Halsted's work on ligation of the carotid artery, the percentages of paraplegias one got from ligating the carotids. Knowing that, we knew that we could take the subclavian with impunity, and so he just went ahead and started doing the anastamosis without ever having shown actually that it would raise the--well, at the time we were making these pulmonary A-V shunts, but even then we were going ahead and doing all the clinical stuff--the dog Anna, for instance, who got all of the publicity was done later. Patients were being done ahead of the experimental work actually, but as long as we knew that it was not lethal, that there were no untoward affects, we decided to go ahead with it. It was not

on the basis of anything cooking in the lab at the time. With the pulmonary A-V shunts and then the subclavian-pulmonary anastamosis, we did get a rise in the (oxygen) saturation, but that was coming along at the same time as the clinical work and was not conclusive enough at the start of the patient work.

Of course, after doing Eileen and seeing the way she came around, it was obvious the procedure worked. That child stood up in bed after one week. You have never seen such a change. She was initially so pale and blue, and to see her after surgery stand up on the side of that bed--it was almost a miracle.

Dr. O.:

In closing, let me ask you for your overall impression of Dr. Blalock as a man, as a teacher. Was he really as fine a teacher as he has been credited as being?

Mr. T.:

That is a difficult question to answer. You have heard that saying, "You can't see the woods for the trees." I think that a good percentage of these comments and credits probably have been because of the fact that you couldn't see the woods for the trees. If you really get realistic

about it and take things apart, then as a teacher, I think anything he had in his mind--he had a way of getting things over to people--yes, but I think that as far as his greatness of ideas, once a fact or idea bugged him, he had a way of getting it across to others. This will refer back to what you said awhile ago, as to whether or not he actually needed the support of someone at the operating table. There are two ways of looking at it. Does he need them as help or is that his way of teaching you, or finding out what your impression is? I think that he took advantage of his association and working with other people to teach himself, to learn himself. He learned as much from other people by working with you and asking you should I do so and so and so and so, to see if you had the same thing in mind as he had in mind. I think I should, but do you think so. Let's see if our minds meet. He would do this; sometimes he would ask me and then go ahead and do what he had in mind to start with.

Dr. O.:

So it was not in your mind just a matter of being indecisive?

Mr. T.:

He was trying to draw you out to see what you were thinking about. I think that, if it happened to you, you may not

decide what you thought was right was wrong, but at least you find out that there is another way of doing this besides what I have in mind, you get that idea. So one way or another he got his ideas over to you.

Dr. O.:

Certainly the whole area of cardiac surgery owes an awful lot to what you all did. It came at the opportune time. It opened the door to what is going on now in many hospitals. It put cardiac surgery on the map.

Mr. T.:

I will tell you one thing. I feel that it put Hopkins on the map at the time. Hopkins was slipping into the background and I think both Dr. Blalock and Dr. Taussig are due a lot of credit for pulling this place up by the bootstraps.

Now somebody has to come along in this generation with something hot.

Dr. O.:

What are your plans now Vivien? Do you plan to stick around here?

Mr. T.:

I have eight years until I am due for retirement. I will be 57 this year.

Dr. O.:

I swear you look the same age as when I was a student in the dog lab in 1953.

Mr. T.:

Your eyes are that many years older; they just can't see quite as well as they did.

I feel sometimes like I have been kicked upstairs, so it makes you feel like you are older than you are, because now you are kept around sort of as a fixture, somebody to talk to. I'm the headache guy around here. Somebody has problems, I get them.

Dr. O.:

You are in charge of the technical staff here in the surgical labs, are you not?

Mr. T.:

Yes, the personnel, equipment, and supplies are my responsibility. It gets to be pretty touch and go sometimes, pretty rough sometimes. With as many people as are working out there on that floor this morning, it can really kind of bug you. Sometimes you run completely out of help and other times you don't know what to do with them. Like the first part of this week, they all went off to this meeting and we

had people just standing around. At times I feel like I would rather just work here. I would like to come in in the morning, I know what my project is that I am going to work on--and I would come in the morning and just work on that and not be bothered with anyone else's headache.

Dr. O.:

Well, I certainly appreciate your willingness to sit down and chat with me. It has been a great pleasure for me, and as I say, I think we have been able to talk about a number of things of interest to people who are interested in Dr. Blalock. Of equal importance is the fact that it gives us a better picture of you, who in a sense are a rather unsung hero. I am delighted at the thought that there will be a record available for people who come along and say, "Now, who is this guy Vivien Thomas? I keep seeing his name wherever I see Dr. Blalock's."

Mr. T.:

I was a little amazed in this two-volume work of Dr. Ravitch, in the letters and correspondence, people looked like they couldn't get around my name in the letters concerning Dr. Blalock. They always got me involved in some way or another.

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