

The Blue Baby Operation

On November 29, 1944, a small, frail child was wheeled into an operating room at the Johns Hopkins Hospital for the first attempt to treat tetralogy of Fallot, a congenital heart malformation that robs the blood of oxygen. This life-threatening condition is often signaled by a bluish or "cyanotic" cast to the skin, hence the term, *blue baby*. The procedure joined an artery leaving the heart to an artery leading to the lungs, in an attempt to give the blood a second chance at oxygenation. It was the first blue baby operation and came to be known as the Blalock-Taussig Shunt.

This exhibit marks the 50th anniversary of the procedure, which was celebrated in 1995.

The Operation

The Surgeon - Alfred Blalock

The Pediatric Cardiologist
Helen B. Taussig

The Surgical Technician
Vivien T. Thomas

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[The Celebration of the 50th Anniversary of the Blalock - Taussig Shunt](#)

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A digital visitor counter display showing the number 11040. The digits are black on a white background, and the entire display is enclosed in a thin black border.

That First Operation

On November 29, 1944, Drs. Blalock and Taussig decided to proceed with the anastomosis, or joining, of the subclavian artery to the pulmonary artery in a cyanotic child.

Dr. Helen Taussig was convinced that the operation would help the patient, and despite the technical problems of operating on a very small and very ill child, Dr. Alfred Blalock's skill was equal to the task. Blalock worked with his surgical team and his invaluable assistant [Vivien T. Thomas](#), who stood behind Blalock and offered a number of helpful suggestions in regard to the technique employed.

The tiny child who had been at such great risk survived the operation and slowly improved. Over the succeeding days she gradually became less blue. By the end of the second postoperative week it was clear she would recover. ([View a copy of Dr. Blalock's surgical record page one, page two](#))

The child's mother later recalled,

*When I saw Eileen for the first time, it was like a miracle...
I was beside myself with happiness.*

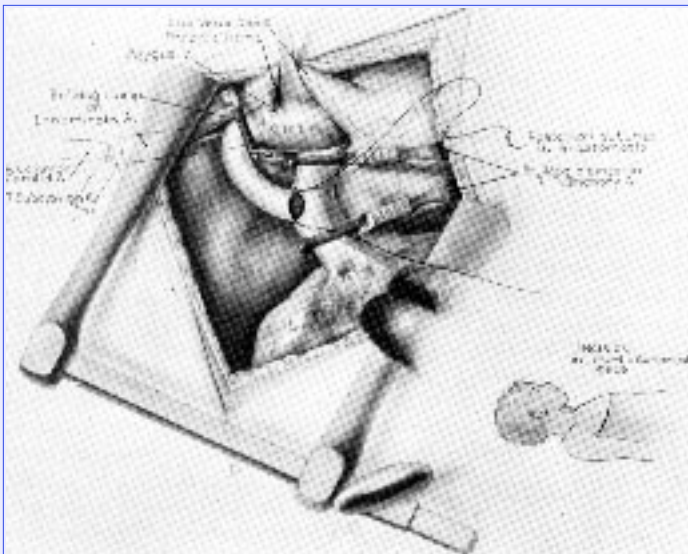
Operations that Followed...



Dr. Blalock and his surgical team, performing one of the first shunts.

By the third time the procedure was performed, the success of the operation had become dramatically apparent. Dr. Taussig described the third patient to receive the landmark operation *"as an utterly miserable, small six-year old boy who was no longer able to walk."* His skin was intensely blue, his lips deep purple. Just after the final stitches were tied and the clamps released, the anesthesiologist called out, "The boy's a lovely color now!" Dr. Taussig remembered the thrill of walking around to the head of the operating table to see those *"lovely normal pink lips."* She reported that after his recovery from the operation he was a happy, active child.

In 1945, the first scientific paper describing the original three operations appeared in the *Journal of the American Medical Association* and had immediate worldwide impact.



*The Journal of the American Medical Association
(128:189, May 19, 1945)*

Copyright 1945 American Medical Association.

In the years that followed thousands of cyanotic children were helped by the operation.



An account of a cyanotic 2-year-old from Washington state, who traveled to Hopkins for treatment

Associated Press, Miami Daily News, December 9, 1945.

Doctors from all over the world traveled to The Johns Hopkins Hospital to learn from Dr. Taussig how to make the diagnosis and from Dr. Blalock how to perform the anastomosis.

The blue-baby operation brought fame to both [Alfred Blalock](#) and [Helen Taussig](#).

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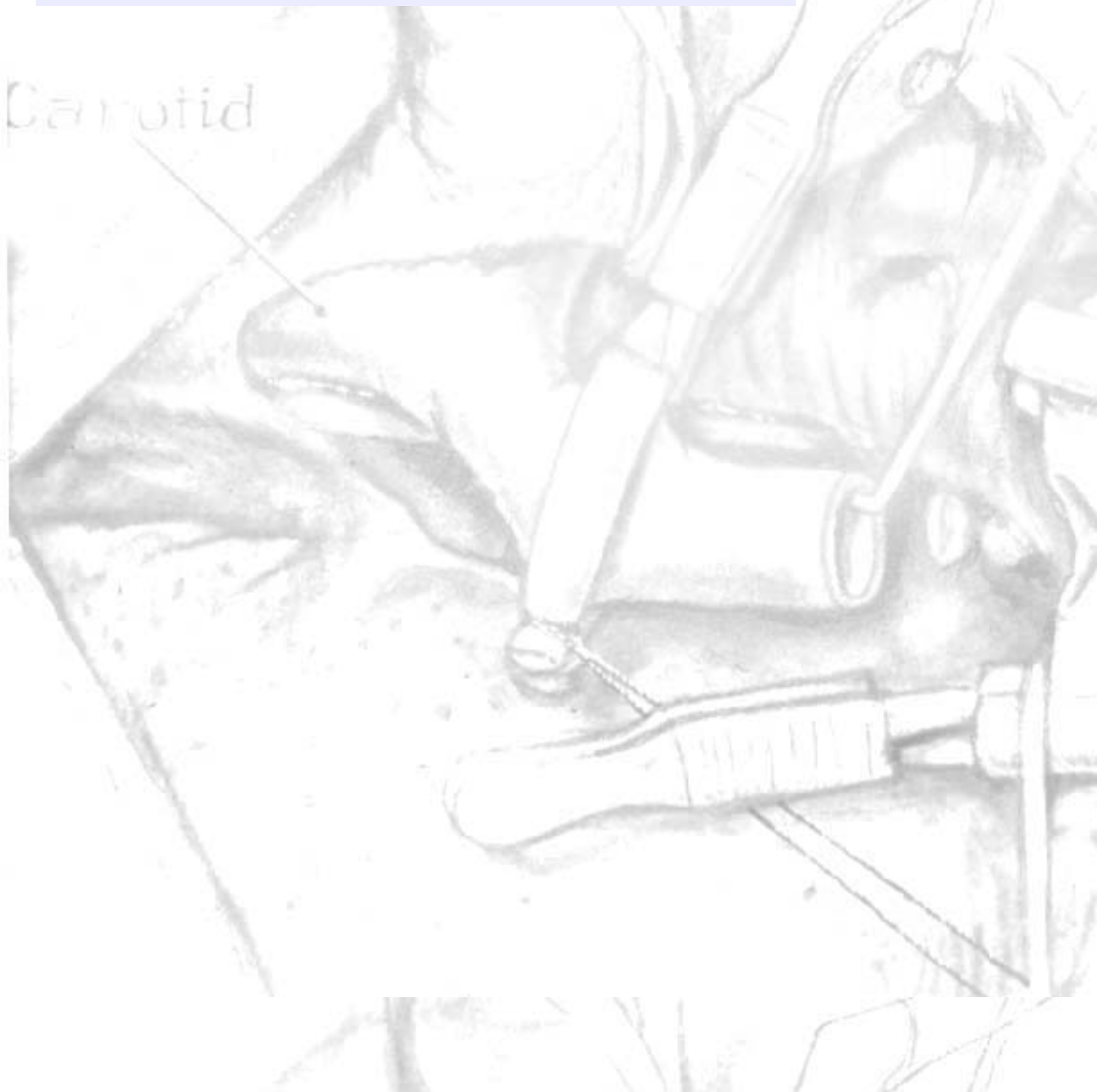
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Carotid



Vivien T. Thomas

**Supervisor of
Surgical Research Laboratories
1910 - 1985**



*Portrait of Vivien T. Thomas
by Bob Gee, Oil on Canvas, 1969*

Vivien T. Thomas was a key player in pioneering the anastomosis of the subclavian artery to the pulmonary artery. The surgical work he performed with Alfred Blalock paved the way for the successful outcome of the Blalock-Taussig shunt.

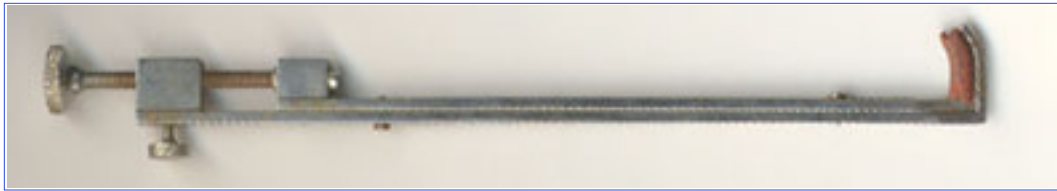
In January 1930, Vivien Thomas, a young African-American who was forced for lack of funds to leave his first year of college, came to work for Blalock in his laboratory. At that point Blalock's increasing obligations were cutting into the time he could spend in the laboratory and he needed a surgical assistant. A more fortunate choice could not have been made. Vivien Thomas learned to perform the surgical operations and chemical determinations needed for their experiments, to calculate the results, and to keep precise records; he

remained an invaluable associate throughout Blalock's career.



Photographer unidentified

Blalock and Thomas worked closely in the surgical laboratories. Thomas was a major contributor in the development of operative techniques. He and Dr. Blalock also collaborated on the design of surgical equipment. Shown here is a clamp for the temporary occlusion of the pulmonary artery, which was devised for Blalock's use by Vivien Thomas and William Longmire, working with the local surgical supply house Murray Baumgartner & Co. It became known as the "Blalock" clamp.



Photograph by M.W. Kehoe

Thomas supervised the surgical laboratories at Hopkins for over 35 years, and in 1976 he was appointed instructor in surgery at the Johns Hopkins University School of Medicine. In 1979, upon his retirement, he became instructor emeritus of surgery. Vivien Thomas's achievements were widely recognized by his colleagues. In 1976, he was awarded the honorary degree Doctor of Laws, by the Johns Hopkins University.



*Thomas with Helen Taussig, and Steven Muller,
President of The Johns Hopkins University at graduation
ceremonies in 1976, during which Thomas was honored.*

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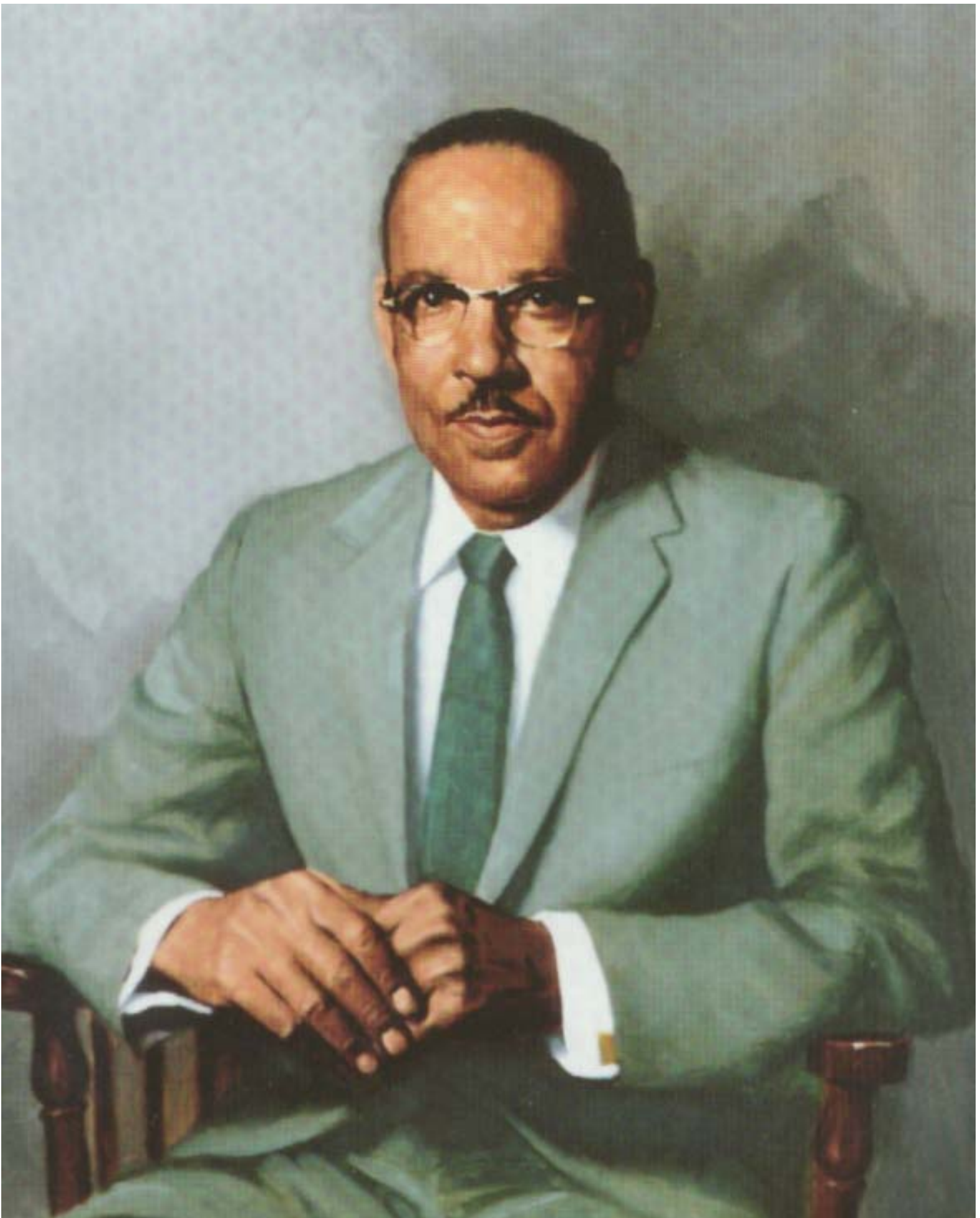
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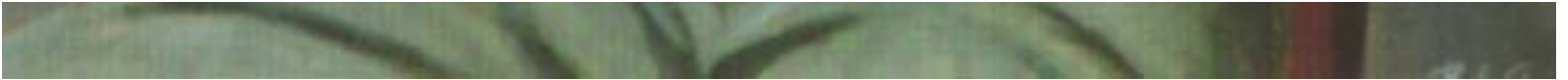
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Vivien Thomas Dr. Helen B. Taussig

President
Steven Muller

Alfred Blalock, M.D.

Surgeon
1899 - 1964



Portrait of Alfred Blalock by Yousuf Karsh, ©Karsh

Alfred Blalock earned his M.D. from Johns Hopkins in 1922. Three years later he left Baltimore, considering himself something of a failure at age 26, for he had not achieved a residency in surgery. He headed to Nashville to become the first resident in surgery in the new Vanderbilt University Hospital. While at Vanderbilt he did pioneering work on the nature and treatment of hemorrhagic and traumatic shock. He demonstrated that surgical shock resulted primarily from the loss of blood, and he encouraged the use of plasma or whole-blood transfusions as treatment following the onset of shock.

This early work on shock is credited with saving the lives of many casualties during World War II.

Dr. Blalock and his team who were working on shock at Vanderbilt, labored to create different physical conditions in dogs. In 1938, he conducted one experiment in which the left subclavian artery was joined (anastomosed) to the left pulmonary artery in an effort to produce pulmonary hypertension. The experiment failed and was put aside. Years later Dr. Blalock was to return to the idea.

In 1941 Alfred Blalock returned to Hopkins to assume dual appointments as surgeon-in-chief of the hospital, and professor and director of the department of surgery of the medical school, positions he was to hold until his retirement in 1964.



Alfred Blalock lecturing at The Johns Hopkins University School of Medicine, from the Olive Berger papers of The Alan Mason Chesney Medical Archives

Dr. Blalock arrived well prepared for the surgical work that was to challenge him. He brought with him one of his most valued colleagues, his surgical research technician [Vivien Thomas](#). Together they formed a close partnership that was to last more than 30 years. Thomas was known for his eager intelligence and his superb surgical skill.

Over the next few years, the shunt technique was developed further at Hopkins. It was used as a means of bypassing an obstruction (coarctation) of the aorta.

It was while Blalock was discussing his work on coarctation that Dr. Helen Taussig presented to him the problem of the *blue-baby* in relation to some sort of arterial shunt that would furnish more blood to the lungs.

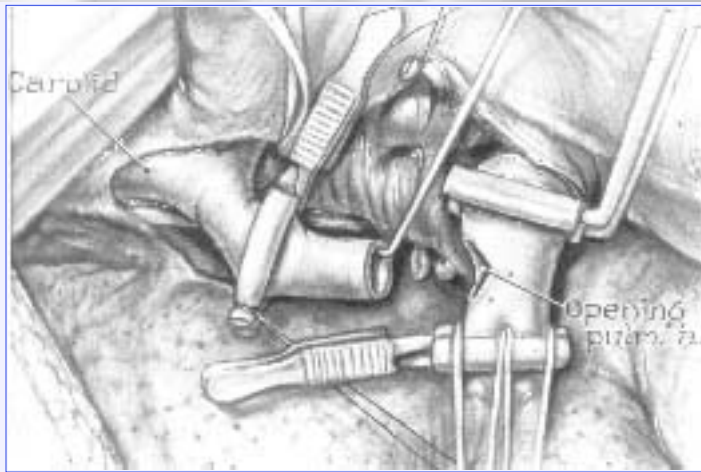
Later Dr. Blalock wrote, "*Vivien Thomas, my superb technician, and I performed many experiments with this end in view.*" Vivien Thomas said, "*Our first attack on the*

problem was to try to form in an animal a 'blue-baby syndrome' in order that we could work out a procedure for correction."

The 'syndrome' is the tetralogy of Fallot, which consists of a hole in the wall between the heart's two major chambers (ventricles), an enlarged right ventricle, a defective pulmonary valve that prevents full flow of blood to the lung, and cyanosis. Cyanosis is indicated outwardly by blueness and caused by the lung's inability to oxygenate sufficient blood for the system.

The first operation on a patient occurred on November 29, 1944. First assistant in that operation was William P. Longmire, Resident Surgeon. In 1965 he recalled,

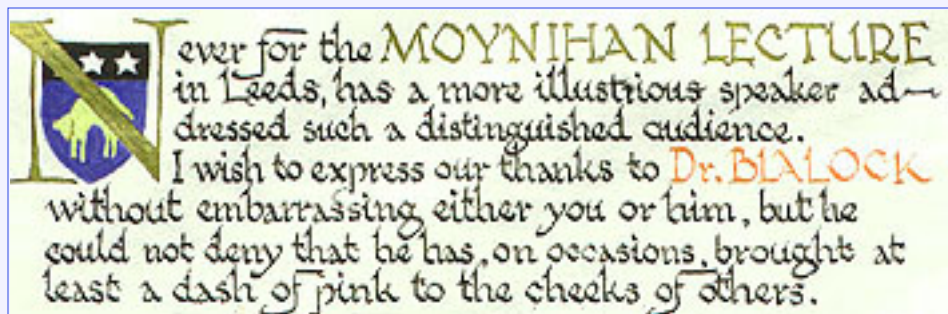
I must say my enthusiasm for the idea completely disintegrated when I saw the frail cyanotic infant in the oxygen tent on the east ward of Harriet Lane 4. At that time Dr. Blalock spoke briefly with the parents (and indicated again the serious nature of the operation). It seemed to me from the way he greeted them that they had discussed the operation prior to the child's admission to the hospital....At the time of the first operation we lacked all of the modern vascular instruments and really had little but the Professor's determination to carry us through the procedure. The child had extensive collateral vessels full of thick dark blood which I of course, had never seen before. The pulmonary artery was identified with some difficulty and was isolated back into the mediastinum. It was amazing to see the Professor gently but blindly insert a right angle clamp into the mediastinum and after dissecting over his index finger, pull out the innominate artery...Vivien Thomas stood in back of Dr. Blalock and offered a number of helpful suggestions in regard to the actual technique of the procedure.



*An illustration by Leon Schlossberg of the procedure.
By permission of Surgery, Gynecology & Obstetrics, now known as
the Journal of The American College of Surgeons.*

The operation was successful, and word spread quickly, bringing a steady flow of patients and visitors to the hospital.

Dr. Blalock's contributions to surgery were recognized nationally and internationally. He was elected to membership in the [National Academy of Sciences](#) and the American Philosophical Society.



*A detail of a presentation letter given to Dr. Blalock following the
Moynihan Lecture, which he gave in 1954, in Leeds, England.*

Among the prestigious honors which Dr. Alfred Blalock received were the *Chevalier de la Legion d'Honneur*, the [Passano Award](#), the Matas Award, and the Albert Lasker Medical Research Award.

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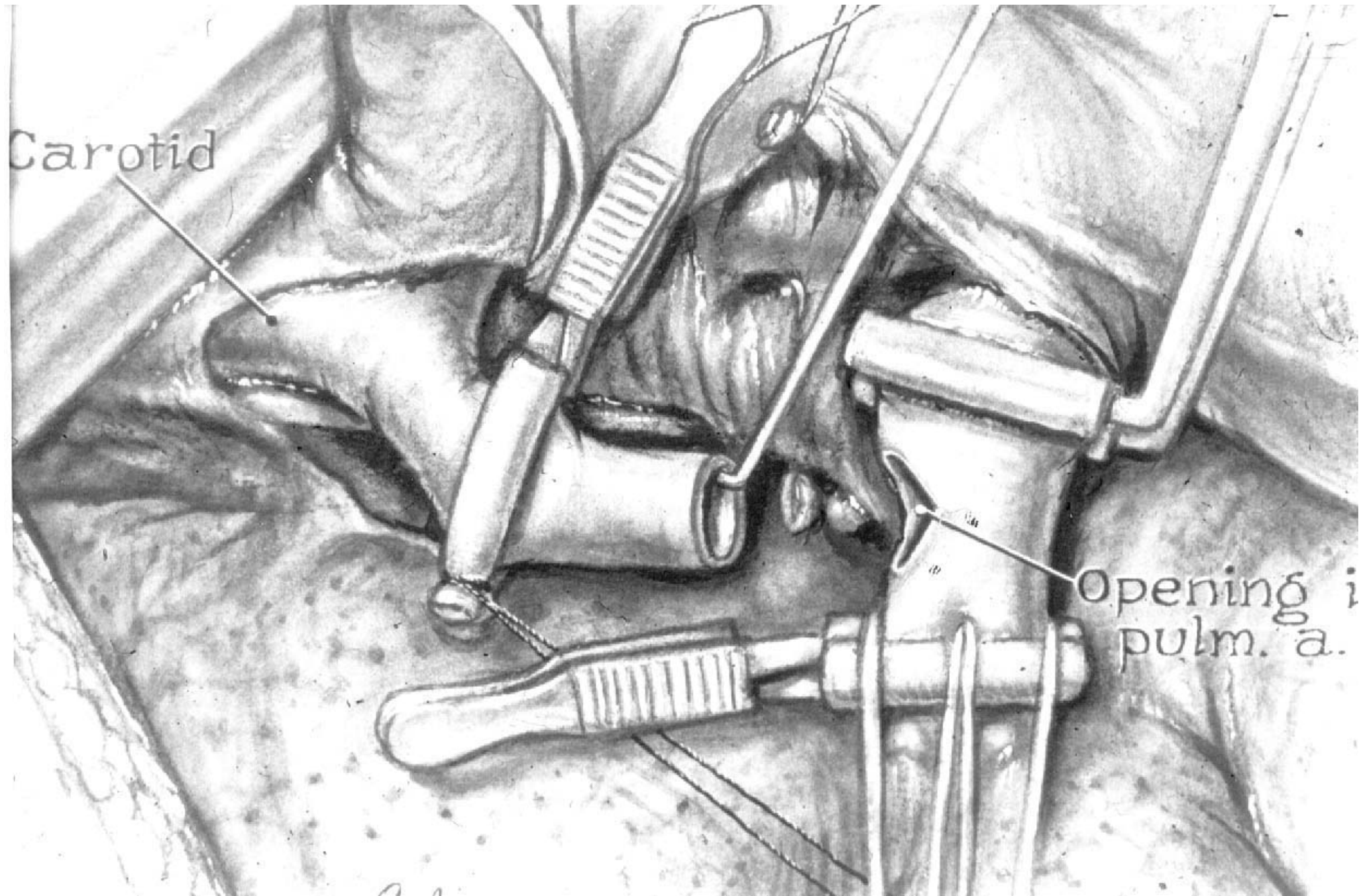


© Karsh

One of the photographic studies done by Yousef Karsh

One of the photographic studies done by Iouset Karsh, to mark the official "1,000 blue baby" procedure performed by Alfred Blalock.





To all Persons to whom these Presents shall come
CREDENTIALS

This Diploma Witnesseth

that **Alfred Blalock** has been duly elected a Member

National Academy of Sciences of the United States of America

in conformity with the provisions of the Charter and Constitution of said Academy, and that he is fully entitled to enjoy all the rights of Fellowship in said Academy with all the Liberties, Immunities and Privileges thereunto belonging.

In testimony whereof, the said Academy have caused their Corporate Seal to be affixed to this Diploma and the same to be attested by the names _____ of the proper Officers this twenty-fourth day of April, in the year of our Lord one thousand nine hundred and forty-five

Fred. S. Wright. *Hon. Secy*

Walter B. Cannon *Pres.*



G. B. Smith *President*

L. S. E. ... *Vice Pres.*



ever for the **MOYNIHAN LECTURE** in Leeds, has a more illustrious speaker addressed such a distinguished audience.

I wish to express our thanks to **Dr. BLALOCK** without embarrassing either you or him, but he could not deny that he has, on occasions, brought at least a dash of pink to the cheeks of others.

By honouring us with this Lecture today Dr. Blalock has helped us to pay homage to one, whom, of our own, we honour most. For Moynihan was a great man.

He stood for meticulous care in surgery, and he stood for friendship among surgeons. He was a moving spirit at the birth of the Association of Surgeons of Great Britain and Ireland, and among his most valued friends were his great American contemporaries. He always brought back to Leeds the best that was to be found in America, and today he has done it again.

If we think of Dr. Blalock's contribution to surgery we realise how well we could have sat and listened to an absorbing story of carefully assessed work and scientific achievement. It is typical of the man that, while paying respect to the past, he has left it to care for itself, and his lecture has been a looking forward into the problems and possibilities of the future. How Moynihan would have loved it, had he been here!

Award

of the

PASSANO FOUNDATION

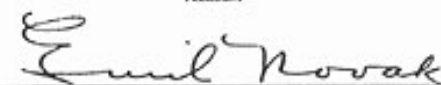
For outstanding contributions to the science of medicine and the alleviation of human ills, the Passano Award for 1948 has been bestowed upon

Alfred Blalock, M.D.

in recognition of his elucidation of traumatic shock, and his development and application of new techniques for the surgical treatment of congenital malformations of the heart, particularly those involved in the relief of pulmonary stenosis or pulmonary atresia.

The directors of the Passano Foundation have been guided in the making of this Award by the counsel and suffrages of a nation-wide group of one thousand protagonists of the several fields of scientific medicine.



PRESIDENT






SECRETARY




Baltimore, Maryland

JUNE TWENTY-THIRD, NINETEEN HUNDRED & FORTY-EIGHT



Helen B. Taussig, M.D.

**Pediatric Cardiologist
1898 - 1986**



*Portrait of Helen B. Taussig
by Yousuf Karsh, ©Karsh*

In 1930, Helen B. Taussig was appointed by Dr. Edwards A. Park, professor of pediatrics, to head his cardiac clinic.

Dr. Taussig soon began to study the cardiac manifestations of disease, and then her interest turned to congenital heart disease. Eventually she came to the realization that the major physiological problem in tetralogy of Fallot (the blue-baby syndrome) was lack of blood flow to the lung.



Dr. Taussig examining a blue-baby.

Photograph by permission Hearst Newspapers.

Although opinions vary as to the origins of the operation, Dr. Taussig remembered listening to a conversation in 1943 between Dr. Alfred Blalock and Dr. Edwards A. Park. The discussion had to do with the difficulty associated with cross-clamping the descending aorta to repair a coarctation. Dr. Park inquired,

Could you not use the carotid artery as a bypass? It is a long, straight artery and there are four vessels to the brain. Wouldn't it be possible to turn the carotid artery down and anastomose it to the aorta below the coarctation?

Dr. Taussig spoke up,

If you could put the carotid artery into the descending aorta, couldn't you put the subclavian artery into the pulmonary artery?

Regardless of the variance in the stories recounting the origination of the procedure; it is clear Blalock together with Vivien Thomas, continued to move forward with the problem of providing oxygen to the pulmonary artery. The shunt first tried at Vanderbilt ultimately provided the answer. The operation was first performed on a very ill, high-risk patient in 1944. Although the frail child died months later in a second operation, the child survived long enough to demonstrate the survival of a surgical

procedure that would save the lives of tens of thousands of children.



*Hands of Helen Taussig examining an infant.
Photograph by permission of Tadder Associates.*

In 1945, Helen Taussig and Alfred Blalock published a joint paper on the first three operations in the *Journal of the American Medical Association*; this publication had an immediate worldwide impact.



The American Weekly, February 17, 1947

Dr. Taussig and Dr. Blalock made numerous clinical presentations and case demonstrations in both Europe and the United States. The success of the procedure attracted many patients to Johns Hopkins for treatment, and it also brought many physicians to learn the techniques of the procedure.



Helen Taussig with a small patient in 1981.

Photograph by permission of Tadder Associates.

Dr. Taussig received international recognition and honors for her contributions to medicine, including the French *Chevalier Legion d'Honneur*, the Italian Feltrinelli Prize, the [Peruvian Presidential Medal of Honor](#), and here at home, the Albert Lasker Medical Research Award, and the United States of America Medal of Freedom.



*The U.S.A. Medal of Freedom awarded to Helen Taussig
in 1964.*

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The Blue Baby Operation

About the Exhibit and the 50th Anniversary of the Blalock - Taussig Shunt

On June 7, 1995, the 50th anniversary of the Blalock - Taussig Shunt was commemorated by a [special program](#) sponsored by the Department of Pediatrics and the Department of Surgery, at the Johns Hopkins University School of Medicine. The Alan Mason Chesney Medical Archives mounted an exhibit for this occasion which was displayed for several months. The exhibit (part of which you can view here) featured correspondence, manuscripts, artifacts, patient notes, portrait paintings, medals, photographs, vintage film clips, and memorabilia relating to the development of this lifesaving procedure, the individuals who pioneered it; and some of their first patients. All items displayed are from the Alfred Blalock and Helen B. Taussig collections of The Alan Mason Chesney Medical Archives of The Johns Hopkins Medical Institutions.

As time permits we intend to make additions to this exhibit, incorporating some of the many items which are presently on display; so we hope you'll return.

We welcome any comments, or suggestions.

archives@welchlink.welch.jhu.edu

Thank you for visiting our site.

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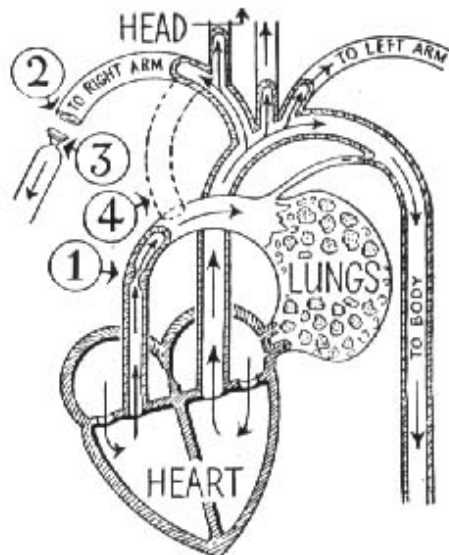


© Karsh





Switching Arteries Sidetracks Blood and Oxygen to Otherwise Starved Lungs



The "Blue" Babies' Blood Lacks Vital Oxygen Because the Artery (1) From the Heart to the Lung Is Constricted. By Severing an Artery of the Arm (2), Tying It Off (3) and Attaching It to the Lung Artery (4) the Constriction Is By-Passed.

By Robert D. Potter

Science Editor

A WOMAN physician's courageous research and imagination, and the skill of one of the world's great surgeons have combined to bring hope that many "blue" babies—hitherto considered doomed to early death—may be saved.

These babies are blue because they are suffering from a lack of oxygen in their blood streams, in a condition known as cyanosis. The artery from their heart to their lungs is so constricted that their blood never gets oxygen to make cheeks rosy.

Their lips are blue. Their toes are blue, and they can walk only a few feet without exhaustion. Doctors used to give them only a few tortured years to live.

Saving Our Doomed 'Blue' Babies

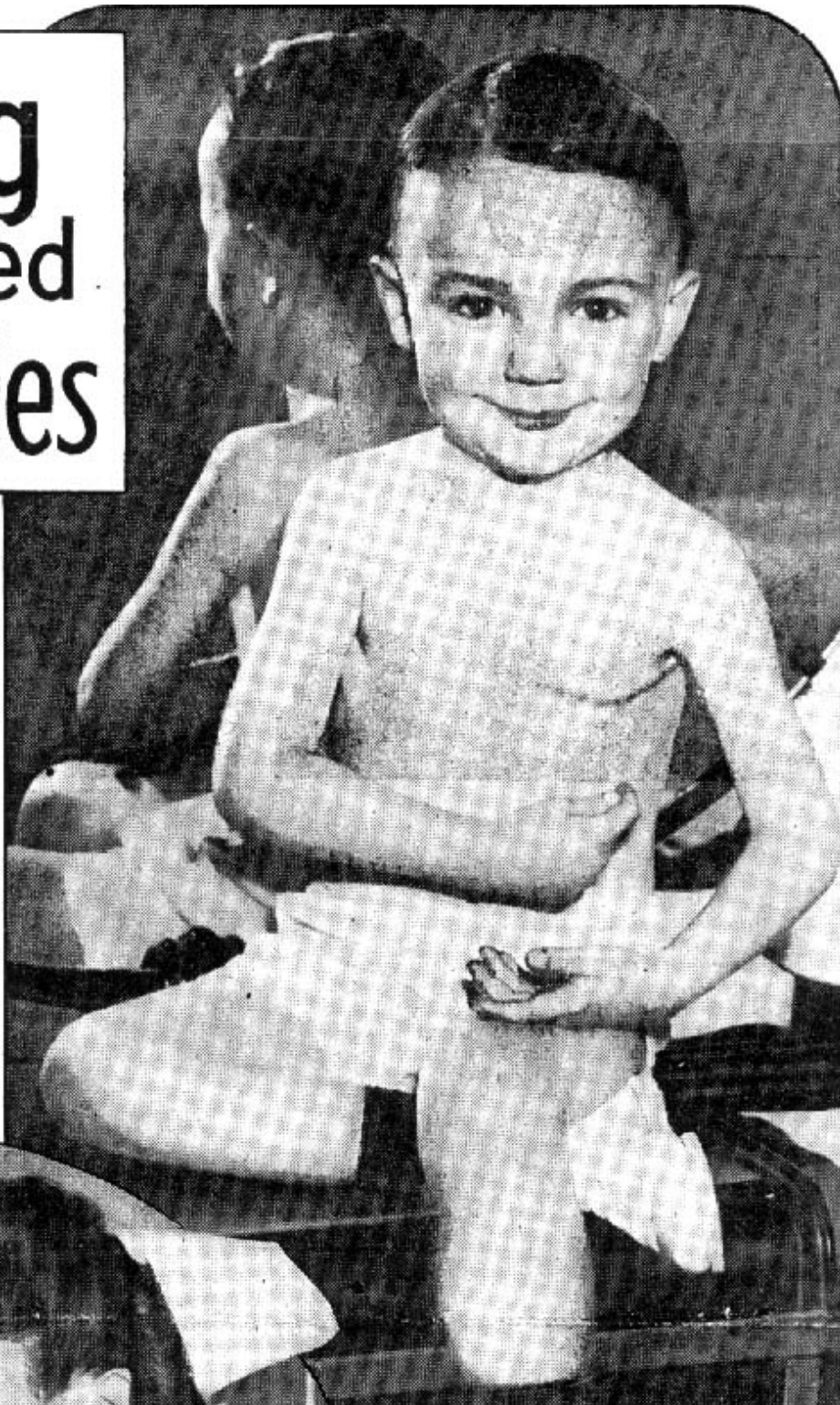
the blood would pick up its life-giving oxygen. Then it would go back to the heart again to move outward through the body.

But could it be done? It is one thing to have a plumber re-arrange a piping system and something quite different to lay bare the human heart, sever one of its main arteries, splice it to another main artery and sustain life in the patient in the process. Dr. Blalock said he would try.

Since the pioneer attempt the operation has been largely successful, although it is one filled with danger. Among the first 70 patients, 14 died. The odds are 5 to 1 for success.

Now that the news of Dr. Blalock's operation is known through the country the list of patients grows daily. Blue little Bonnie Stewart of Florida, daughter of a daddy killed on Saipan, went to Baltimore with her grandmother. Today Bonnie walks and plays like other children.

The case of six-year-old Mike Schirmer—the boy with the "itchy zipper"—shows what can be done.



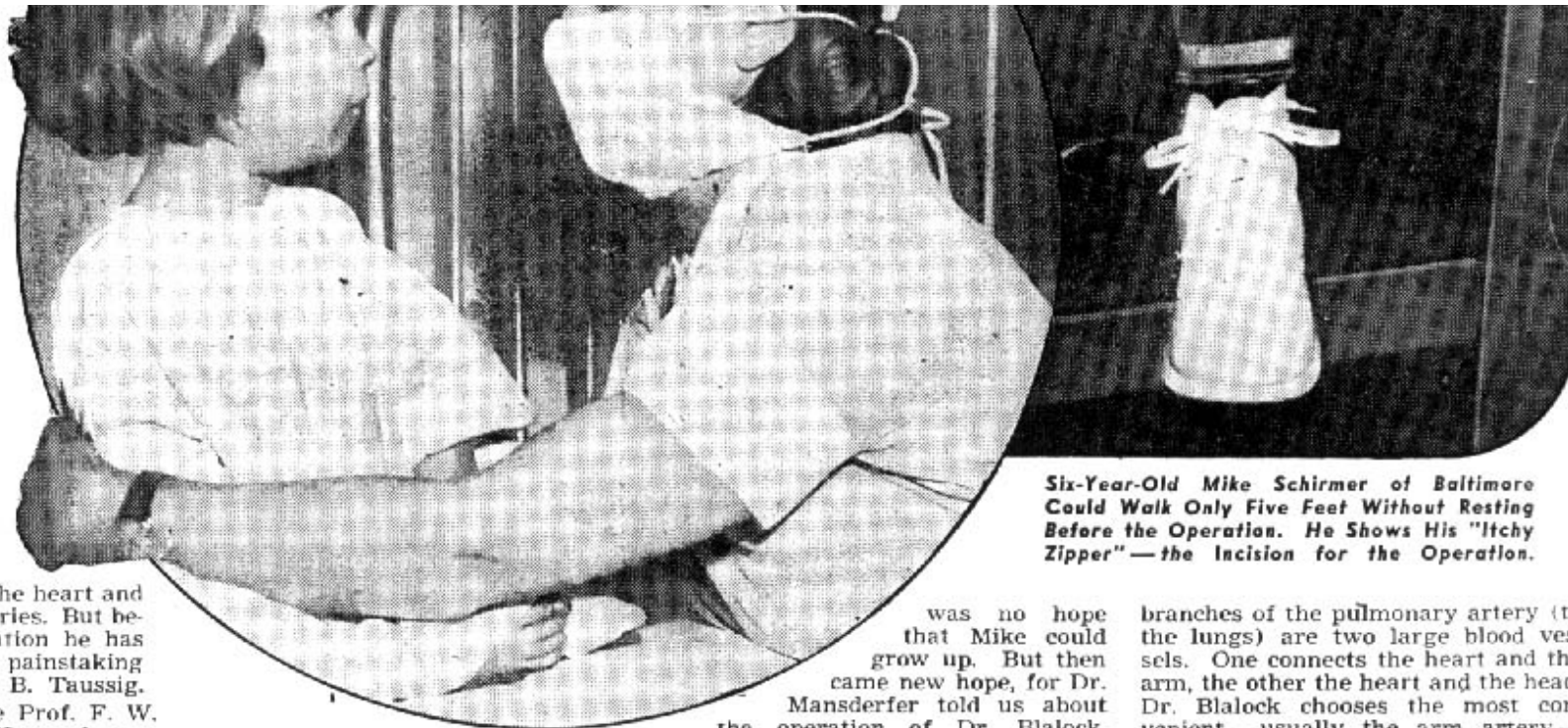
But now medicine can give hope . . . and more . . . for since Nov. 20, 1944, Dr. Blalock, Professor of Surgery at Johns Hopkins University in Baltimore, has been conquering the "blue" baby malady by re-routing an artery from the arm and making it carry blood to the lungs where it can receive its vital oxygen.

Nearly 70 operations have been performed on "blue" babies. In many cases almost miraculous recovery has come.

It is Dr. Blalock's fingers that wield the knife in the delicate operation that exposes the heart and transplants its vital arteries. But behind the brilliant operation he has perfected are years of painstaking research by Dr. Helen B. Taussig.

Daughter of the late Prof. F. W. Taussig, world-famous Harvard economist, Dr. Taussig had watched "blue" babies come to her heart clinic at Johns Hopkins Hospital.

In many cases she discovered that the artery leading to the lung from the heart was narrowed so that an insufficient supply of blood was reaching the lungs to receive its vital oxygen. Dr. Taussig reasoned that a surgical operation might be able to short-circuit the constriction and sidetrack blood into the lungs. On paper, when the diagram of the art-



Six-Year-Old Mike Schirmer of Baltimore Could Walk Only Five Feet Without Resting Before the Operation. He Shows His "Itchy Zipper"—the Incision for the Operation.

Little Bonnie Stewart of Florida is Another of the 70 Children Saved by the New Johns Hopkins Surgery.

Mike's "itchy zipper" is the healing incision over his heart where Dr. Blalock went in to do the operation. But let his mother tell his story:

"Michael could only walk five feet and then he'd have to squat down on the sidewalk and rest.

"I had to wheel him everywhere. Strangers would stop his carriage and

was no hope that Mike could grow up. But then came new hope, for Dr.

Mansderfer told us about the operation of Dr. Blalock. "They took him to the operating room and brought him back two hours later. It was a miracle.

"After only two weeks of convalescence he came home and he has been on the go ever since. If anyone wants anything he'll run and get it. He's up and down stairs 75 times a day. He climbs on bureaus and tables just for the joy of jumping off. He wears me out. But I love it."

The Blalock-Taussig operation is not a simple one. It takes from an

branches of the pulmonary artery (to the lungs) are two large blood vessels. One connects the heart and the arm, the other the heart and the head. Dr. Blalock chooses the most convenient—usually the arm artery—and severs it. One end is clamped off and the other closed permanently.

The end nearest the heart is then spliced to the nearest branch of the pulmonary artery. The clamps are removed and the blood that would ordinarily flow to the arm goes into the lung. There it becomes enriched with vital oxygen and the baby's blue lips quickly begin to turn red.

What happens to the arm?

Nature has provided other blood vessels which take up the blood load









A Celebration: 50th Anniversary of the Blalock-Taussig Shunt

November 29, 1944...

Eileen Saxton was wheeled into an operating room at Johns Hopkins for the first attempt to treat tetralogy of Fallot by joining an artery leaving the heart to an artery leading to the lungs, thereby giving her blood a second chance at oxygenation. It was the first blue baby operation and was named the Blalock-Taussig Shunt.

The procedure saved the lives of thousands of children around the world and heralded the modern era of cardiac surgery.

June 7, 1995...

Friends, colleagues, patients, and students of cardiologist Helen Taussig, surgeon Alfred Blalock, and technician Vivien Thomas will gather to mark the innovation, courage, and vision in devising the Blalock-Taussig Shunt.

Oral biographies, memories of the first surgery, glimpses of the shunt's impact on cardiac care, and a look to the future all will be presented. Afternoon tea will precede a celebration dinner overlooking Baltimore's Inner Harbor.

The program is sponsored by the Departments of Surgery and Pediatrics at the Johns Hopkins Medical Institutions.

June 7, 1995

Program

- 1 p.m. **Welcome**
Dr. Duke Cameron, Director of Pediatric Cardiac Surgery,
The Johns Hopkins Children's Center
- 1:15 p.m. **Tribute to Helen Taussig**
Dr. Mary Allen Engle, Founder, Division of Pediatric Cardiology,
The New York Hospital-Cornell University Medical College
- 1:45 p.m. **Tribute to Alfred Blalock**
Dr. David Sabiston, James Buchanan Duke Professor of Surgery
and Chief of Staff, Duke University Medical Center
- 2:15 p.m. **The First Patient**
Dr. Denton Cooley, Surgeon-in-Chief
Texas Heart Institute
- Break**
- 3:15 p.m. **Follow-up of Original Shunt Patients**
Dr. Jean Kan, Director, Division of Pediatric Cardiology,
The Johns Hopkins Children's Center
- 3:45 p.m. **Current Role of the Blalock-Taussig Shunt**
Dr. Cameron
- 4:15 p.m. **Molecular Medicine and Congenital Heart Disease**
Dr. Hal Dietz, Associate Professor of Pediatrics,
The Johns Hopkins Children's Center
- 5 p.m. **Tea**
- 7 p.m. **Cocktails at Stouffers Harborplace Hotel**
- 8 p.m. **Dinner and guest speaker**
Dr. Aldo Castaneda, director of the Castaneda Institute in Geneva

The Blue Baby Operation

The Blue Baby Operation Exhibit Sources

Updated October 1998 mwk

Bibliographic Sources - For Further Reading

The Alfred Blalock Papers and the Helen B. Taussig Papers are deposited in the Alan Mason Chesney Medical Archives. The images, papers, photographs, and newspaper clippings used in this exhibit are from sources in the Blalock and Taussig papers and other sources in the repository's holdings.

The Blalock papers consist of 94 boxes of professional and personal papers. The Blalock collection contains professional and personal correspondence, manuscripts, patient records, photographs, artifacts, medical illustrations, and assorted memorabilia. The Helen B. Taussig collection consists of 203 boxes of papers; it contains professional and personal correspondence, patient records, photographs, research notes for articles and lectures, teaching materials, and student notes.

The Blalock and Taussig papers are accessible for reference and research. Researchers are welcome to visit the archives to study these papers; however series such as patient records carry restrictions. (See: [Policy on Access](#))

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The Blue Baby Operation

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HLN 4 E

Surgery

OPERATION: Nov. 29, 1944

Dr. Alfred Blalock

Ether - Oxygen - Dr. Harnel

ANASTOMOSIS OF LEFT PULMONARY ARTERY TO LEFT SUBCLAVIAN ARTERY

This patient was an undernourished child who had cyanosis on frequent occasions. The diagnosis was pulmonary stenosis.

Under ether and oxygen, administered by the open method, an incision was made in the left chest extending from the edge of the sternum to the axillary line in the third interspace. The second and third costal cartilages were divided. The pleural cavity was entered. The left lung looked normal. No thrill was felt in palpating the heart and pulmonary artery. The left pulmonary artery was identified and was dissected free of the neighboring tissues. The left pulmonary artery seemed to be of normal size. The superior pulmonary vein, on the other hand, seemed considerably smaller than normal to me. I had hoped that the artery to the left upper lobe might be sufficiently long to allow an anastomosis, but this did not appear to be the case. The left subclavian artery was then identified and was dissected free of the neighboring tissues. The vertebral artery and the branches of the thyrocervical axis were doubly ligated and divided. The subclavian was so short that there would not have been sufficient length for our purposes, had this not been done. The subclavian artery was then ligated distal to the thyrocervical trunk. A bulldog clip was placed on the subclavian artery at a point just distal to its origin from the aorta. The subclavian artery was then divided just proximal to the ligature. Two bulldog clips were then placed on the left pulmonary artery, the first clip being placed at the origin of the left pulmonary artery, and the second clip being placed just proximal to the point where the artery entered the lung. There was ample space between these two clips for our purpose. A small transverse incision was then made in the wall of the pulmonary artery. By the use of china beaded silk on fine needles, an anastomosis was then performed between the end of the left subclavian artery and the side of the left pulmonary artery. A posterior row of sutures was placed first. There was practically no bleeding following the removal of the bulldog clips.

The anastomosis seemed to be a satisfactory one, and the main point of worry comes from the small size of the left subclavian artery. I was disturbed because I could not feel a thrill in the pulmonary artery after the clips were removed. I do not believe that this was due to any clot in the subclavian artery, because it seemed to pulsate vigorously. It is possible that it was due to a low pressure in the systemic circulation. I do not actually know what the systemic pressure was. Another possibility was that it might

KNOW what the systemic pressure was. Another possibility was that they
have been due to spasm of the subclavian artery. My only regret was that the
subclavian artery was not bigger. It is possible that the increased red
cell count in this patient may have predisposed to thrombosis.

(over)

Sulfanilamide was placed in the left pleural cavity. This was followed by closure of the incision in the chest wall. The third and fourth ribs were approximated by two encircling sutures of braided silk. The soft tissues of the wall were closed in layers with silk sutures.

The patient stood the procedure better than I had anticipated. It is interesting that the cyanosis did not appear to increase very greatly from the temporary occlusion of the left pulmonary artery. It is also of interest that the circulation in the nail beds of the left hand appeared to be fairly good at the completion of the operation.

I did not attempt to visualize the left common carotid artery. It is possible that this would have been bigger than the left subclavian. This child was very small and I am confident that the subclavian artery would be more easily dealt with in a larger child.

(Dr. Blalock)

ms





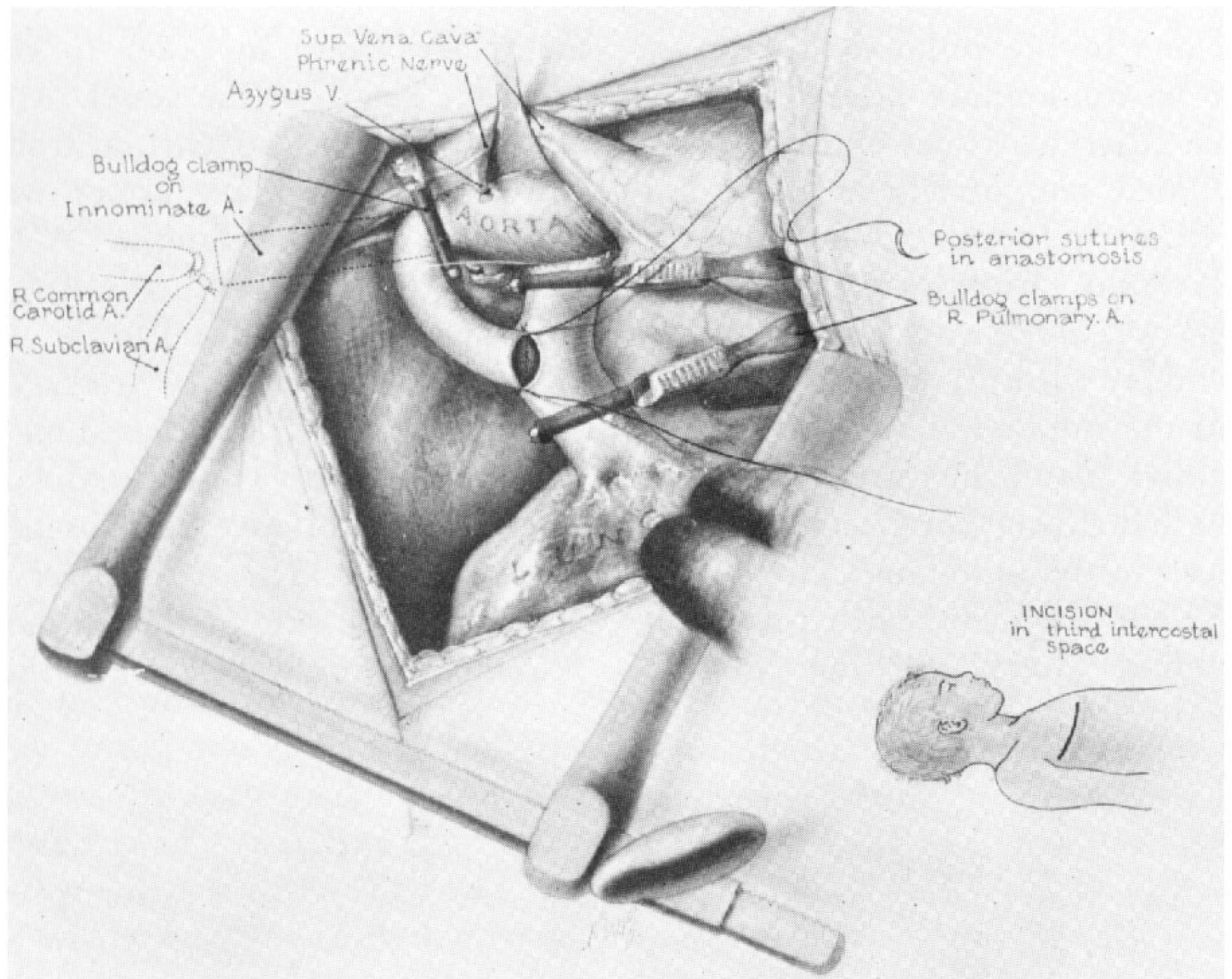


FIG. 1. General exposure of the operative field on the right side. The end of the innominate artery is being anastomosed to the side of the right pulmonary artery. The posterior row of sutures is complete. The anterior row has not been inserted.



—AP Wirephoto.

JUDY HACKMAN, 'BLUE BABY'
Operation Gives Life-Saving Oxygen

'Blue' Baby Faces Fight For Life In Oxygen Tent

BALTIMORE, Dec. 8.—(AP)—A mother's two-year search for someone who could save her "blue" baby from death apparently met success today on an operating table at the Johns Hopkins hospital.

Dr. Alfred Blalock, professor of surgery at Hopkins, operated on Judy Hackman, 2, of Buckley, Wash., in an attempt to avert surgically what had once seemed inevitable—Judy's death from insufficient oxygen in her blood.

Although hospital officials emphasized that the 48 hours following the operation's end at 10:45 a. m. were a period of crisis, they said that as far as could be determined

following the operation's end at 10:45 a. m. were a period of crisis, they said that as far as could be determined now, the operation was successful. Dr. Blalock said the operation went "quite well" and Judy was "doing very nicely."

Two-year Search

The child's parents, Mr. and Mrs. Henry Hackman, waited in an ante-room while Dr. Blalock operated. Fearful of shattered hopes, they hesitated to assume that now Judy was going to be well. "We've been looking for someone to help Judy for one whole year—no, two years," Mrs. Hackman said, as her husband nodded agreement.

"It seems too good to be true, I just can't believe it, I can't let myself believe it until Judy is really well again," Mrs. Hackman said.

But her manner had lost the tenseness so obvious when she carried her baby from the plane Monday. She seemed to know Judy was over the biggest barrier to a normal life.

The so-called "Blalock operation" performed on Judy was first done Nov. 29, 1944, after its discovery by Dr. Blalock and Dr. Helen B. Taussig, head of the cardiac clinic at the Harriet Lane home for invalid children at Hopkins.

Severed Good Artery

The operation began at 9 a. m. today and took less time than usual. Special clamps devised by Dr. Blalock and an assistant simplified the surgeon's task of augmenting the deficient supply of blood to Judy's lungs by severing a good artery and attaching it to a defective one.

Once it had been done, the surgeon's fingers could feel a steady thrill as blood coursed through the new route to her lungs. By 10:45, her right lung (collapsed during the operation) was expanded again, the incision sewed and Judy on her way back to her room.

She was placed in an oxygen tent to help her through the postoperative crisis. The

now, the operation was successful. Dr. Blalock said the operation went "quite well" and Judy was "doing very nicely."

Two-year Search

postoperative crisis. The bright-eyed, honey-haired child's chances of escaping death increased hourly.

Miami Daily News, December 9, 1945