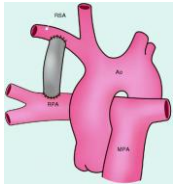


# AORTO-PULMONARY SHUNT SURVIVAL: A TEN YEAR AFRICAN SINGLE CENTRE REVIEW

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# Introduction

- First successful shunt
- Published in JAMA 1945

**JAMA CLASSICS**

## SUMMARY OF THE ORIGINAL ARTICLE

**The Surgical Treatment of Malformations of the Heart in Which There Is Pulmonary Stenosis or Pulmonary Atresia**

**Alfred Blalock, MD; Helen B. Taussig, MD**

JAMA. 1945;128(3):189-202

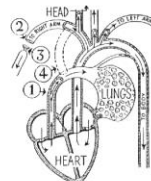
Heretofore there has been no satisfactory treatment for pulmonary stenosis and pulmonary atresia. A "blue" baby with a malformed heart was considered beyond the reach of surgical aid. During the past three months we have operated on 3 children with severe degrees of pulmonary stenosis and each of the patients appears to be greatly benefited. In the second and third cases, in which there was deep persistent cyanosis, the cyanosis has greatly diminished or has disappeared and the general condition of the patients is proportionally improved.

The results are sufficient.

The operation here were undertaken with structure of the heart it might be possible a manner as to less. It is important to expect se, which does ing manifestation of satory polycythemi sis and the factors c heart is essential in ing the present ope

See [www.jama.com](http://www.jama.com) for full text of the original JAMA article.

### Switching Arteries Sidetracks Blood and Oxygen to Otherwise Starved Lungs



The "Blue" Babies' Blood Locks Vital Oxygen Because the Artery (1) From the Heart to the Lungs is Constricted. By diverting an Artery of the Arm (2) Into the Lung Artery (3) the Constriction is Bypassed.

By Robert D. Potter

**SCIENCE EDITOR**  
A WOMAN physician's courage, research and imagination, and the skill of one of the world's great surgeons have combined to bring hope for 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 arteries from their heart to their lungs is so constricted that their blood never gets oxygen to make cheeks rosy. Their lips are blue, and they can walk only a few feet without exhaustion. Doctors used to give them only a few fractional years to live.

But now medicine can give hope—and even cure—for these "blue" babies. Dr. Alfred Blalock, Professor of Surgery at Johns Hopkins University in Baltimore, has been conquering the "blue" baby mainly by connecting an artery from the arm and making it carry blood to the lungs, where it can receive its vital oxygen. The operation has been performed in many cases almost miraculous recovery has come.

Dr. Blalock's fingers that weld the hearts in his delicate operation that repairs the heart and restores its vital artery, has perfected one year of painstaking research by Dr. Helen B. Taussig, daughter of the late Prof. P. W. Taussig, world-famous Harvard economist. Dr. Taussig, just married, "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 being sent to the lungs. The child's heart is then enlarged and the child's blood is short of oxygen. The constriction and the enlarged heart are shown in the diagram of the heart.

### 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 rearrange a piping system and something quite different to try to save the human heart, never 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.

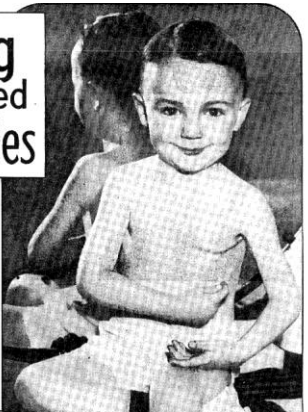
Since the pioneer attempt the operation has been largely successful, although it is one filled with danger. Among the first 20 patients, 14 died. The others are 5 to 1 for success.

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

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

Mike's "icky zipper" is the healing scar over his heart where Dr. Blalock went in to do the operation. Although it is not filled with cancer, "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



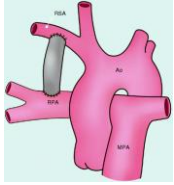
In Two Old Girls Schaeffer of Baltimore Could Walk Only Five Feet Without Heaving Sneeze, the Operation. He Shows His "Icky Zipper"—the Incision for the Operation.

was no hope that Mike could grow up. But then came new hope, for Dr. Mauderfeld took in about the operation of Dr. Blalock, youth and through him back two hours later. It was a miracle.

"After only two weeks of convalescence he came home and he has been on his feet ever since. If anyone wants anything he'll run and get it. He's up and down stairs 20 times a day. He climbs on benches and tables just for the joy of jumping off. He sneezes me out. But I love it."

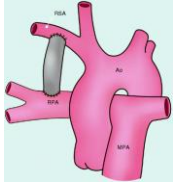
branches of the pulmonary artery to the lungs) are two large blood vessels. One connects the heart and the arm, the other the heart and the head. Dr. Blalock chooses the most convenient and the other closed permanently.

The end nearest the heart is then spliced in the correct branch of the pulmonary artery. The clamp is removed and the blood that would ordinarily flow to the arm goes into the lungs. 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



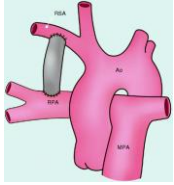
# Introduction

- Indications
  - Variety of conditions with decreased pulmonary blood flow
- Complications
  - Early
  - Late
- Risk factors

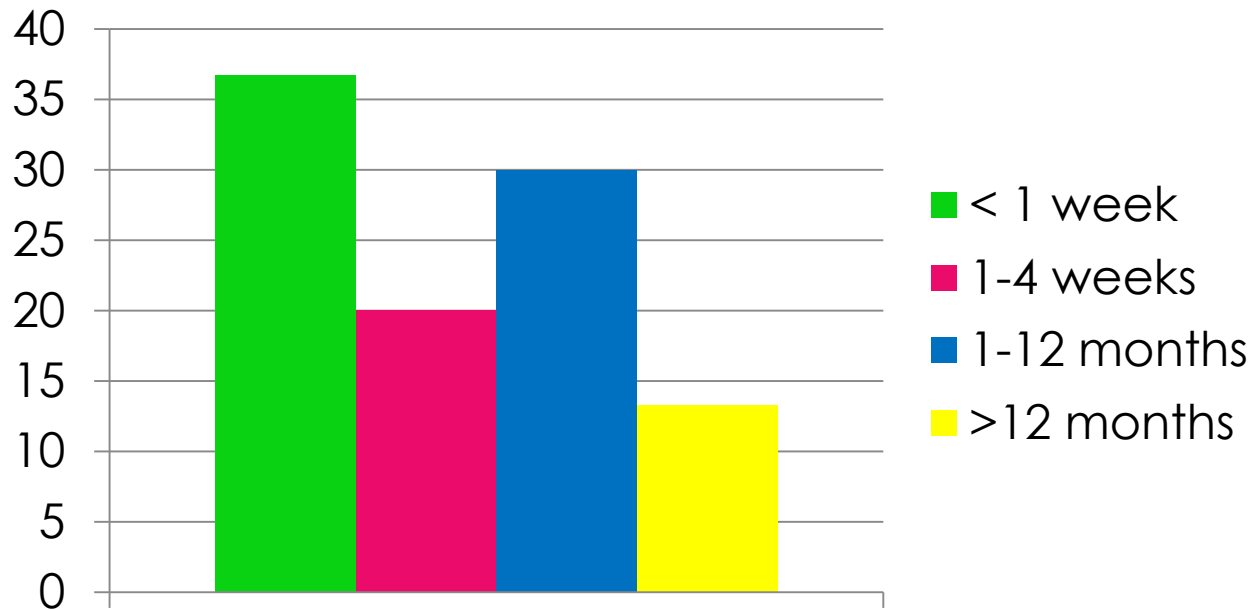


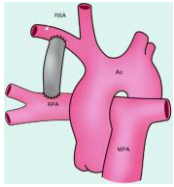
# 10 year experience

- Aorto-Pulmonary Shunt Survival: A Ten Year African Single Centre Review
- 1 July 2007 – 30 June 2017
- Charlotte Maxeke Johannesburg Academic Hospital
- 30 patients
  - 26 MBTS
  - 4 Central Shunts

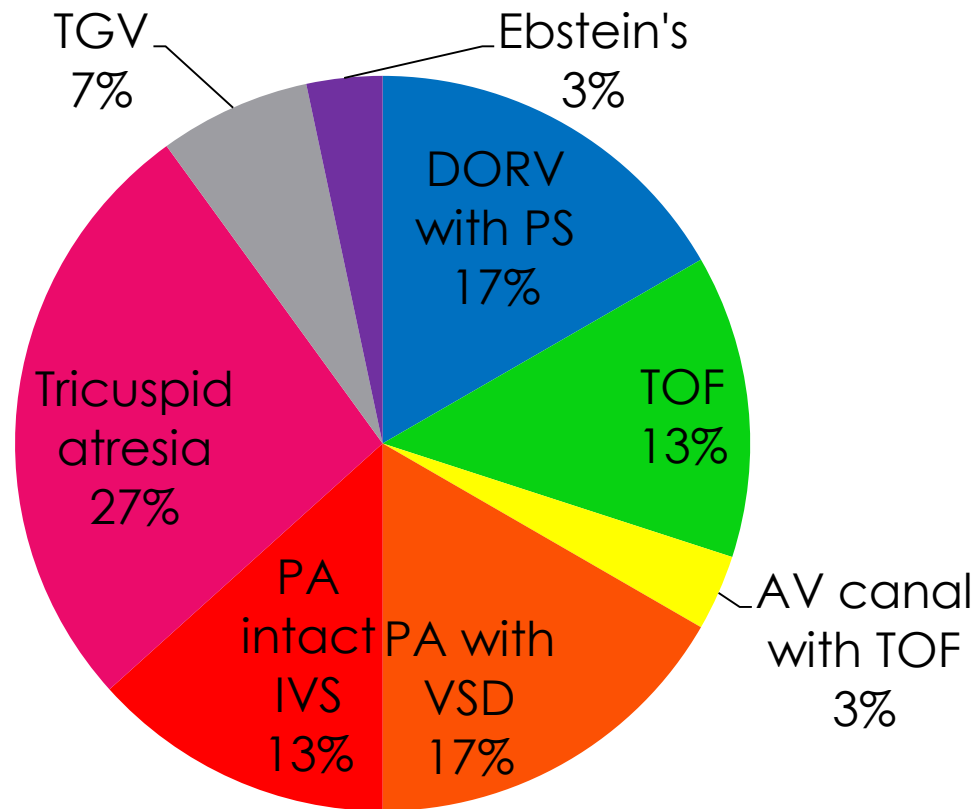


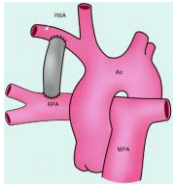
# Age at shunt



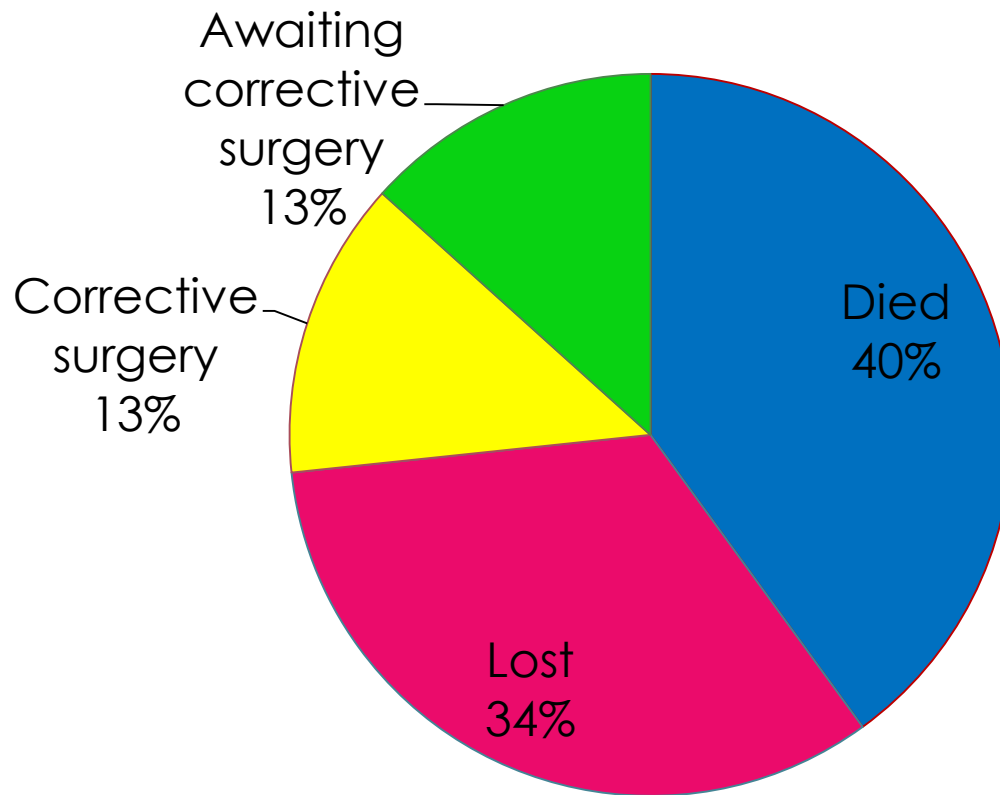


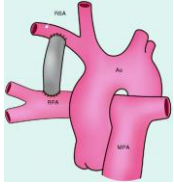
# Diagnosis



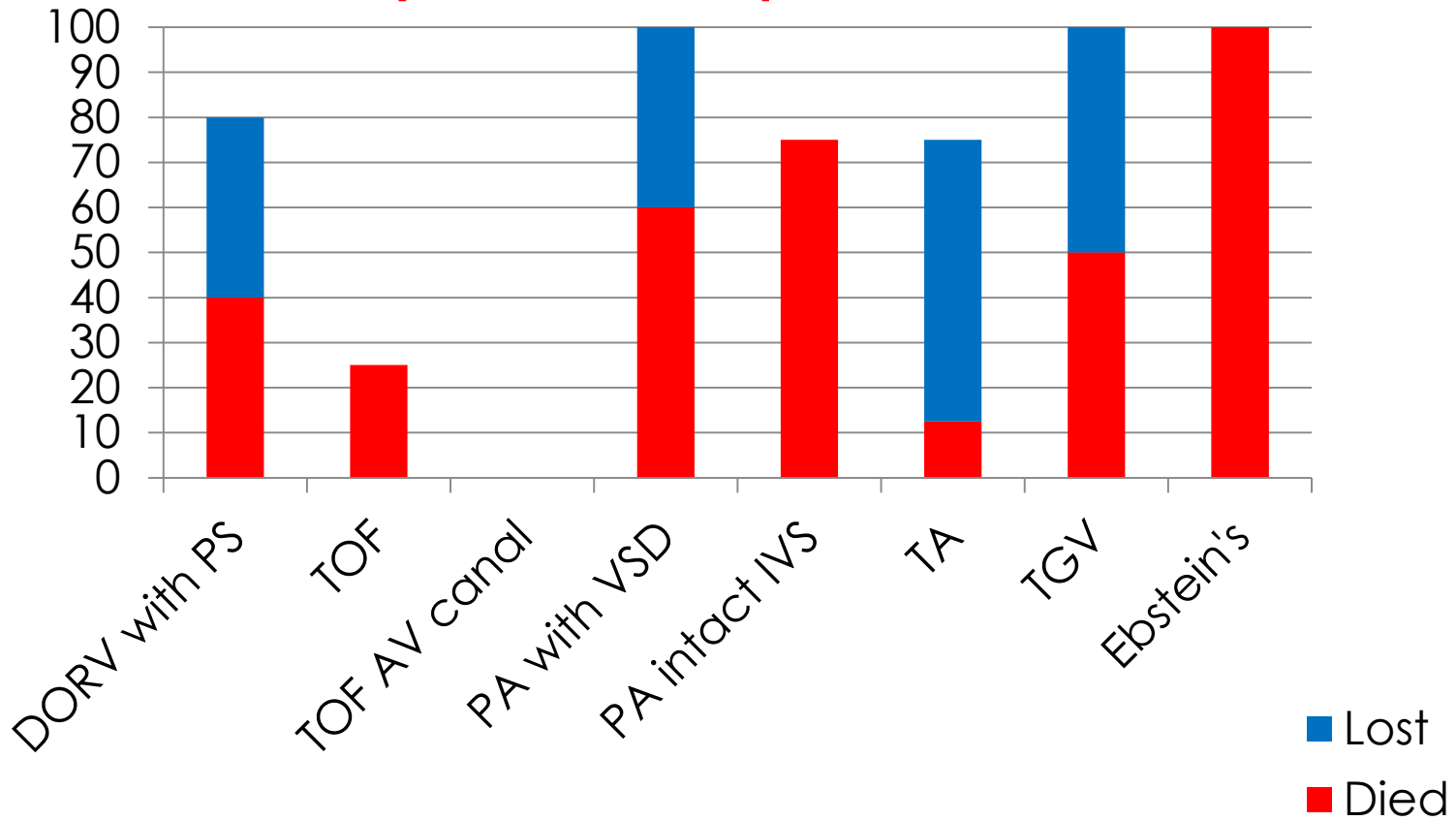


# Outcome

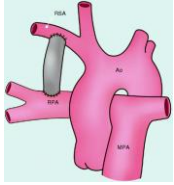




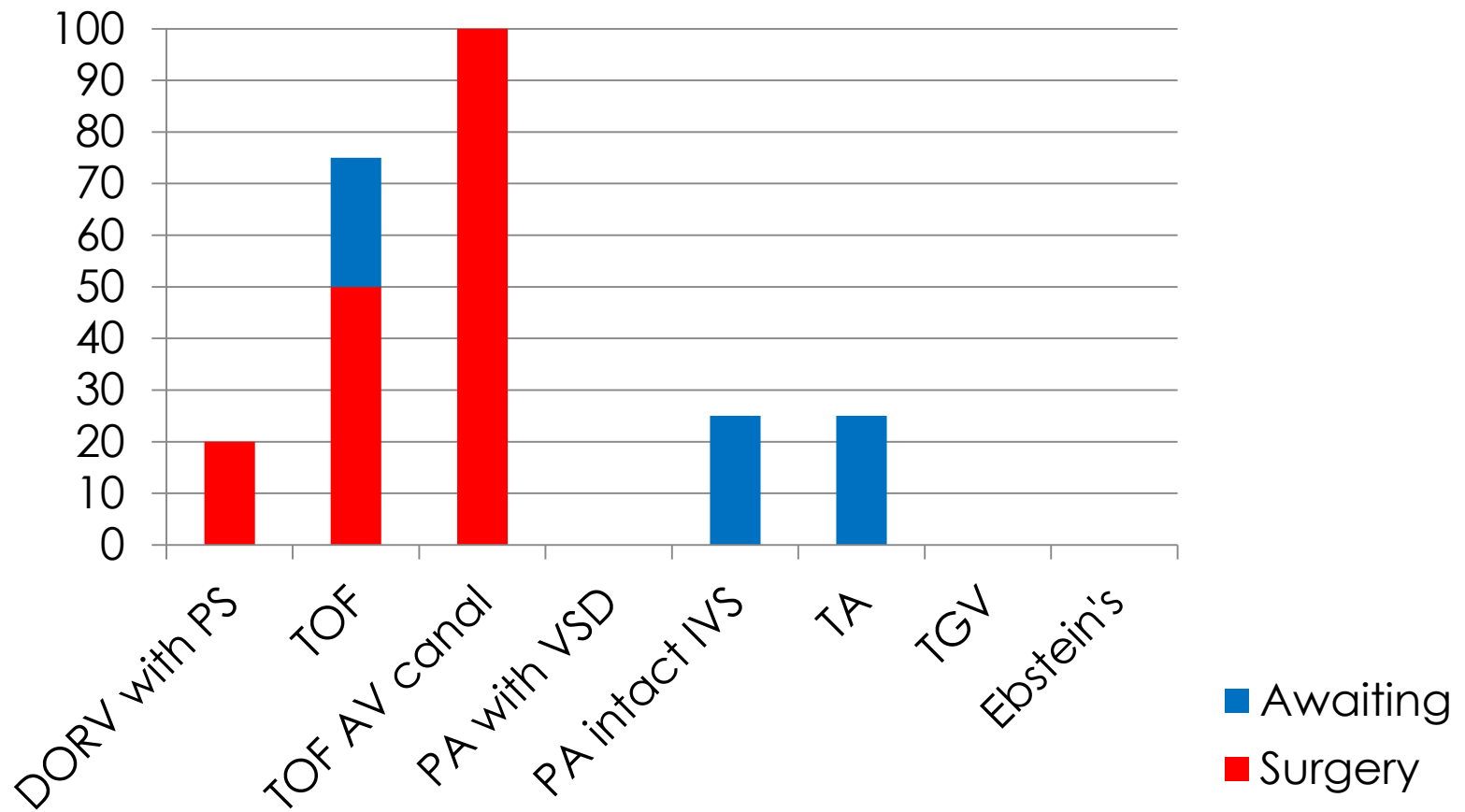
# 10 year experience

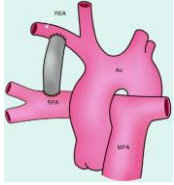






# 10 year experience

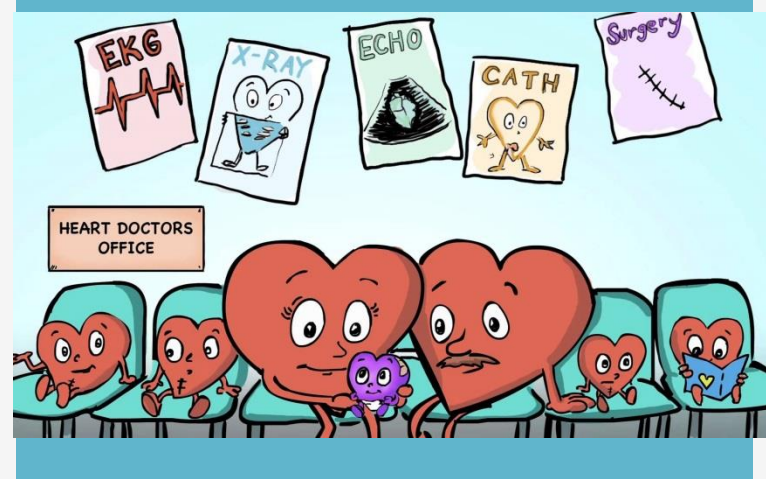




# Conclusion

- Literature review
  - Effective palliation
  - Low mortality risk
- Our experience
  - Guarded outcome
  - Risk factors need to be explored





**THANK YOU!**

Firoza Motara

Bhavisha Nagar

Kathy Van Der Donck and  
her surgical team

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