Blue Baby Operation Encyclopedia Article

Blue Baby Operation

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Before 1944, babies born with *cyanosis*—bluish skin caused by lack of oxygen in the blood--either died or lived with painful physical defects. The plight of these "blue babies" aroused the interest of Dr. Helen Taussig of Johns Hopkins after she became head of that hospital's Children's Heart Clinic in the 1930s. After much pioneering fluoroscopy study, Taussig developed a theory that the cyanosis was due to constriction of the pulmonary artery, the vessel that carries oxygen-depleted bluish blood from the heart to the lungs, where the blood absorbs oxygen and becomes red once again. Next, Taussig visited heart surgeon Robert Gross of Boston, Massachusetts, who had developed an operation to close a baby's blood vessel. This convinced Taussig that a reverse operation--to open a blocked blood vessel--should be possible. In 1941 Dr. Alfred Blalock (1899-1964) became chief surgeon at Johns Hopkins. Taussig, who knew of his reputation as a vascular surgeon and research in blood vessel bypasses, interested Blalock in her theory about cyanosis. Together they experimented on hundreds of dogs to perfect an operation in which a branch of the aorta is joined to the pulmonary artery to create a bypass of the defective portion, assuring adequate flow of blood to the lungs. On November 29, 1944, Blalock performed the first "blue baby" operation on a 15-month-old girl, assisted by Taussig. Two more successful operations followed. A paper by Taussig and Blalock reported the procedure in the May 19, 1945, issue of the *Journal of the American Medical Association*. The "Blalock-Taussig Shunt," as the operation came to be called, was soon widely adopted and saved thousands of babies' lives. Surgeons came to Johns Hopkins from around the world to learn the new procedure, and Blalock traveled abroad to further spread knowledge of the operation. This operative technique is still used today for very young children, keeping them alive until they are old enough for open-heart surgery. A modified procedure using man-made material for the shunt was first performed in 1963. The Blalock-Taussig procedure was the beginning of the modern era of heart surgery, paving the way for open-heart surgery and surgical correction of many congenital heart defects.