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Perspective

Comprehensive Study of Pulmonary Atresia in Cardiac Arrest

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DESCRIPTION

A congenital malformation of the pulmonary valve known as pulmonary atresia occurs when the valve orifice does not form. The valve is completely shut, preventing blood from leaving the heart and entering the lungs. The pulmonary valve is the situated between the right ventricle and the pulmonary artery on the right side of the heart. There are three flaps that open and close at the pulmonary valve opening in a healthy heart. Structures near the heart muscle, such as the walls and arteries/veins, as well as the heart's valves, can be abnormal in congenital heart defects like pulmonary atresia. Due to the aforementioned structural abnormalities, blood flow is a consequently impacted, either by obstructing or changing the flow of blood through the human cardiac muscle. It's unclear what causes pulmonary atresia, a congenital heart defect, so there is no known cause. The pregnant mother may be exposed to potential risk factors that could result in this congenital heart defect, such as: specific medicines. The body needs oxygenated blood to survive when pulmonary atresia is the diagnosis. However, since the unborn child's lungs are not yet functional, pulmonary atresia poses no threat to the developing foetus because the mother's placenta supplies the required oxygen. When the baby is born, lungs must now supply the oxygen it needs to survive, but because of pulmonary atresia, the pulmonary valve is not open, preventing the blood from getting to the lungs to receive oxygen. These causes the new born to be blue and pulmonary atresia can typically be identified within hours or minutes of birth. The following tests and methods can be used to diagnose pulmonary atresia: an echocardiogram, a chest x-ray, an EKG, and a test to measure the body's oxygen saturation.

An IV medication called prostaglandin E1 is used to treat pulmonary atresia because it prevents the ductus arteriosus from closing, allowing the pulmonary and systemic circulations to mix. However, prostaglandin E1 can be dangerous because it can lead to apnea. Heart catheterization, a much more invasive procedure used to assess the defect or defects of the heart, is an example of a preliminary treatment. The fontan technique is the size of the right ventricle and the pulmonary artery determine the recommended type of surgery; if the right ventricle is small and incapable of serving as a pump, the Fontan procedure would be carried out.

CONCLUSION

The right atrium is severed from the pulmonary circulation in this three-stage procedure. The systemic venous return bypasses the heart and travels straight to the lungs. Children who are very young and have high pulmonary vascular resistance may not be able to have the Fontan procedure. Prior to performing the surgery, cardiac catheterization may be used to measure the resistance. Every child's prognosis for pulmonary atresia is different; if the condition is not treated, it may be fatal; however, the prognosis for people with pulmonary atresia has significantly improved over time. How well the child does is influenced by a number of variables, including how well the heart beats and the health of the blood vessels that supply the heart. Surgery can help most cases of pulmonary atresia; however, if the patient's right ventricle is unusually small, multiple operations may be required to help stimulate regular blood flow to the heart. Babies with this kind of congenital heart disease may only live for the first few days of their lives if the condition is not treated.

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