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Pulmonary Atresia and Its Effects in Infants

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Introduction

Pulmonary atresia is a critical congenital cardiac condition in which the infant's pulmonary valve is absent. The pulmonary valve controls the flow of blood from the heart's right ventricle to the lungs transporting oxygen-depleted blood from the lungs for oxygenation. The pulmonary valve does not form in a baby born with pulmonary atresia. Instead of the valve, there is a solid sheet of tissue. It substantially obstructs blood flow. The newborn suffers from a shortage of oxygen-rich blood, which leads to a fatal condition. A severe congenital cardiac defect is a disorder that frequently necessitates surgery soon after birth.

Symptoms

Depending on the kind and severity of the illness, noticeable symptoms in a baby with pulmonary atresia may appear within a few hours after delivery or can take many days. The symptoms can be:

- Cyanosis is a condition in which the skin, lips or nails have a blue-grey tint.
- Breathing issues including shortness of breath or fast breathing.
- Being able to easily exhausted or sluggish.
- Not being able to feed or being tired during breastfeeding.
- Skin that is clammy and humid but cool to touch.

This disease can lead to a variety of issues. Seizures, strokes and heart failure are all possibilities for the newborn. Infectious endocarditis or impaired growth and development may also occur in the infant. The infant can survive pulmonary atresia only when discovered as soon as possible. If left untreated, the ailment will be deadly.

Causes

Although the specific etiology of this congenital cardiac abnormality is unknown, some risk factors can contribute to the problem. If the mother has rubella or another viral infection during early pregnancy, the infant is more likely to have pulmonary atresia. During pregnancy, drinking or smoking raises the chance of a congenital heart abnormality. Mothers who have diabetes or lupus, an autoimmune illness, have an increased risk of having kids with pulmonary atresia. The use of bipolar disorder drugs, acne treatment isotretinoin, or anti-seizure medication during pregnancy can also raise the risk. Parents who have a congenital heart problem may pass on the defective gene to their children through hereditary. There is no method to avoid pulmonary atresia since there is no way to determine the specific cause. Pregnant moms can only be warned about the dangers and should be careful regarding any chronic medical conditions they possibly have.

Diagnosis

It is necessary to visit a neonatologist or a pediatric cardiologist to diagnose pulmonary atresia. Depending on whether a ventricular septal defect is present, there are two types of the condition. The following tests used to make a diagnosis: An X-ray of the chest allows a clinician to examine the inside tissues, bones, and organs.

Echocardiography is the process that measures the electrical activity of the heart to identify abnormal heart rhythms and heart muscle stress. An electrocardiogram, or ECG, is a test that uses sound waves to create a moving image of the heart and its valves to assess the anatomy and function of the heart.

Cardiac catheterization is a procedure in which a thin, flexible tube is introduced into a groin blood artery and directed within the heart to examine and monitor the anatomy. Pulse oximetry is a test that measures the quantity of oxygen in a baby's blood.

Treatment

The Ductus arteriosus transfers blood from the heart and lungs in a fetus that is developing in the womb. It usually closes about the time the child is born. Infants born with pulmonary atresia, an intravenous drug called prostaglandin E1 is used to maintain the ductus arteriosus from closing. It enables alternate blood circulation till the pulmonary valve is treated.

Pulmonary atresia can be treated surgically in a variety of ways. A cardiac catheterization, open cardiac surgery to repair or replace the pulmonary valve is used to treat the problem. The nature of the operation depends on the patient's condition. Surgery should be performed as soon as possible after birth to ensure that the kid has a fair chance of survival.

Conclusion

Depending upon the symptoms observed, the treatment should be designed for the child survival. Mother should be careful during pregnancy so that the child can be healthy. There is no method to avoid pulmonary atresia since there is no way to determine the specific cause. Surgery should be performed as soon as possible after the birth. If it is left untreated, the consequences will be deadly.