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A case report on Single Ventricular Inlet

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Abstract

Introduction: Single ventricular inlet is a defect types of heart defect are present in child at birth .It occurs when one of the heart's two pumping chambers, the ventricles, isn't large enough or powerful enough to function properly. A valve may be absent from the chamber in some situations. Single ventricle abnormalities necessitate a series of open heart surgeries spread out over a period of time. The Norwood surgery, hemi-Fontanel or Glenn operation, and the Fontanel treatment are all part of the so-called stage. Some children will be moderately cyanotic, while others will require immediate care due to a lack of oxygen in the blood to satisfy the body's demands. **Clinical findings:-** Fingernails and toes become bluish, swollen legs , poor feeling, failure to gain weight. Bluish color appear on the body because the oxygen level are low in the blood. **Diagnostic evaluation:-** All routine blood test, chest x-ray was done. Pediatric Echocardiography are done in which atria are dilated atrial septum are small size PEO with left to right shunt. AV valve is two atrio ventricular valve (double inlet single ventricle). Out flow tract are aorta right and anterior CD posed aorta, pulmonary artery left and posterior. S/O malposed great (double outlet) Aorta. aortic arch are left aortic arch & no contractions of aorta dilated coronary sinus. **Outcome:-** Patient prognosis is poor. **Conclusion:-** Timely A member of the health team began urgent treatment and administered all available treatments, but the patient's condition remains unsatisfactory.

Keyword: Single Ventricle, Coronary Artery Abnormality, Congenital Coronary Heart Disease, Coronary Artery Disease, Transposition Of Great Arteries

Introduction:

Congenital heart disorders (CHD) comprise a wide range of abnormalities that impair the heart's function, including TGA stands for single-ventricle syndrome with tetralogy of Fallot (SV) disorders, which are among the most severe forms of cyanotic heart disease.[1] Patients with severe instances usually present in childhood, whereas those with situations that are less severe can live into adulthood.[2] A single ventricle morphology covers a wide variety of cardiac abnormalities and has been linked to transposition of the major arteries.[3] SV physiology occurs because to an inability of the atrial canal to expand and shift during the absorption of the bulbous, resulting in a primitive state of bulb ventricular loop.[4] Patients with SV had a dismal prognosis until the year 1990, however with advances in surgical techniques, the average age of survival has considerably improved.[5] During the operations, surgeons rearrange my heart and vascular system. Single ventricle heart defects can cause babies to become cyanotic because the heart has a mixture of oxygen-poor (blue) and oxygen-rich (red) blood vessels that go to the body (blue). The amount of oxygen or lack thereof is determined by the kind, location, and severity of the lesion. Single ventricle

anatomy is the anatomic category of CHD that is possibly the most diverse. Many of the previously reported lesions may be linked with this broad anatomic range. Hypoplastic left heart syndrome, tricuspid atresia, and double inlet left ventricle are the three classic single ventricle defects, ranked from most frequent to least common.[6] A variety of single-ventricle physiology lesions are listed. Patients with significant hypoplasia of one ventricle who have single-ventricle physiology will eventually have the stepwise procedures that make up the single-ventricle route and culminate in Fontan physiology (explained below). A two-ventricle repair is typically possible for patients with single-ventricle physiology and two well-formed ventricles. The two-ventricle repair will be completed in some situations. Significant residual lesions (VSD, aortopulmonary collaterals) will be present in others. The arterial oxygen saturation (Sao2) in individuals with single-ventricle physiology is determined by the relative volumes and saturations of pulmonary venous and systemic venous blood flows that have mingled and reached the aorta.[7]

Patient information:- A 3month old child was admitted AVBRH on dated 07/07/2021 by his mother and chief complaint of baby having fever from 1 month, difficulty in breathing, nails and toes become bluish patient was visit on firstly private hospital, her blood pressure is normal , patient was disoriented.

Patient Specific Information:

A 3 month old child was admitted by his mother with the chief complaint of baby having fever from 1month difficulty in breathing, nails and toes become bluish patient was visit on firstly private hospital, her blood pressure is normal, patient was disoriented.

Primary concern and symptoms of patients:

A 3 month old child Patient visited in AVBR hospital in OPD base on dated 7/07/2021 with chief complaint of having fever from 1 month difficulty in breathing, nails and toes become bluish patient was taken treatment from private hospital, her blood pressure is normal, patient was disoriented.

Medical, family, and psychosocial history

Patients belong to nuclear family conscious. Her parents was maintain the good relationship with doctors and nurses as well as with other patients also.

Relevant past intervention with outcomes:

My patient was diagnose with single ventricular inlet from that onwards she was admitted to hospital for treatment of the disease but patient improvement not satisfactory.

Clinical findings:

General examination:

State of health: unhealthy
State of consciousness: conscious
Body built: thin
Breath order: Absent
Hygiene: Good

General Parameter:

Height: 60 cm
Weight: 4 kg
Vital parameter:
Blood pressure: 95/58 mm Hg
Temperature: Afebrile 38^{o} C
Pulse: 110 beats/min.
Respiration: 30 breath/ min.
Systemic examination:
Respiratory system: Left sided decrease breath sounds
Cardiovascular system: S1 and S2 heard, No murmur
Central nervous system: conscious, no focal neurological deficit
Abdominal examination:
soft and non tender, no organomegaly
Diagnostic assessment:

All routine **blood test** done in which the HB level are 12.1 gm/dl, platelets are 2.22 lakh , MCHC 32.9 the baby blood group are B + ve. **chest x-ray** was done. **Pediatric Echocardiography** are done in which atria are dilated atrial septum are small size PEO with left to right shunt. AV valve is two atrio ventricular valve (double inlet single ventricle). Out flow tract are aorta right and anterior CD posed aorta, pulmonary artery left and posterior. S/O malposed great (double outlet). Aorta aortic arch are left aortic arch & no contractions of aorta dilated coronary sinus.
Therapeutic intervention:
Doctor are referred to baby treatment including medications are A to Z drop and syrup Orofer. Syrup Orofer 150ml used as supplement. A to Z drop used to treat or prevent vitamin deficiency.

Discussion:

A heart with two distinct atrio ventricular valves or a shared atrio ventricular valve that drains into one ventricle is referred to as a single ventricle.[3] The majority of NYHA functional class III patients are older than 30, showing a considerable decline in cardiac function as a function of age.[5]

The kinds of SV physiology were categorised by Lev et al. based on the axis of the heart, as well as the existence and type of transposition. With a frequency of 0.05–0.1 per 10,000 live births, 4 SV abnormalities account for around 1% of all cardiac malformations.[8] Tricuspid atresia, pulmonary atresia, hypoplastic left heart syndrome, and double-outlet or double-inlet ventricles are some of the conditions that can affect the heart are all anatomical conditions are among the subtypes of SV.[9] As a result of the SV defect, there is a substantial decrease in oxygenation and perfusion, resulting in severe cyanosis and ventricular volume overload.[10]

With a 1% occurrence rate, anomalies of the coronary artery are generally identified by coincidence during catheterization, surgery, or autopsy. The right coronary artery (RCA) arising from the left coronary sinus (AORL) with an interatrial course (running between the aorta and the pulmonary) is the most frequent abnormality, with a frequency of 0.13 percent. The RCA can emerge from a common ostium with the left main coronary artery, from within the left sinus, above the left sinus, slightly above the commissure

between the left and right cusps, or from above the commissure between the left and right cusps. Arrhythmias, MI, pericardial atherosclerotic lesions, syncope, and, most often, sudden cardiac death without underlying coronary disease have all been linked to RCA anomalies for a long time.[11] Activating abnormal RCA for angiographic visualization may be problematic. The most often used catheters are the 6F Judkins left guide, Amplatz left, and EBU (additional backup catheter).

Lee and colleagues classified the subtypes into three groups: There are three types of intraarterial courses: 1) high inter arterial, 2) low inter arterial, and 3) low inter arterial. 2) There is a brief inter arterial path. During periods of physical exertion, The limited blood flow that leads to myocardial ischemia and infarction worsened in the former.[12] Studies addressing different issues of congenital heart problems and coronary artery diseases were reported[13-17]. Related cases and studies were reviewed[18-19].

Currently, an aortopulmonary shunt, such as a modified Blalock-Taussig shunt, is used to do this. or a bidirectional Cavo pulmonary anastomosis (Glenn shunt). Between the ages of 18 months and four years, a Fontan surgery is done to separate the pulmonary and systemic circulations. These individuals have a variety of issues, and pregnancy is difficult for them, with the risk of miscarriage increasing orthopnea and a higher thromboembolic risk.

Conclusion:

When a preliminary diagnosis of single ventricular inlet is obtained, empiric therapy should be continued until a blood sample confirms the diagnosis of single ventricular inlet.

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