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Case Report of 1-Year-Old with Tetralogy of Fallot and Left Side Hemiparesis

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Abstract:
Tetralogy of Fallot (TOF) is a rare condition caused by a combination of 4 heart defects present at birth. First described in 1888, comprises an interventricular septal defect, pulmonary stenosis, an aorta larger than the rest of the body, and right ventricular hypertrophy is a term that refers to an (RVH). It is the most widely used form to be successfully treated for cyanotic congenialities corrected by cardiothoracic surgeons, with an estimated cost of the total frequency a rate of 3,000 per million births.In this case,a child was brought in pediatricOPD with complaints of bluish staining of the skin, weakness of the left part of the body, decreased activity, and breathing difficulties for 2 hours following an extreme cry, according to the mother, and he was transferred to tertiary care hospital for further management. Tetrology of Fallot with left side hemiparesis was diagnosed after an assessment by the doctor. IV fluids, antibiotics, Inj. Ceftriaxone, Inj. Amikacin, Tab. Lanzole junior, syp. Ibugesic plus, syp. Calcimax, syp. Furoped, syp. Digoxin, syp. Augment, syp. Vital sign monitoring, urine output charting, and belly girth traceability all are done as therapeutic intervention recommendations. **Conclusion:** After all of the medical and surgical care, the child's condition was significantly improved. In this case report, we discussed the thread between tetralogy Fallot with hemiparesis.

Keywords: Congenital heart defect, Tetrology of Fallot, stroke, hemiparesis

INTRODUCTION:

Tetralogy of Fallot is the most common congenital cardiac condition in children, with a high rate of survival.[1] Infectious endocarditis is responsible for 4% of admissions to a specialist unit for heart failure[2]. Most patients with a congenital cardiac defect are children. [3]The tetralogy's unique constellation of outcomes was originally described in 1671 in a short essay titled "Dissection of a Monstrous Foetus in Paris," emphasizing .[4]
The arteries have an unusual shape, the pulmonary artery is narrowed, and the carotid artery is dilated. [5]There is a subaortic interventricular septal defect, and the ductus arteriosus is actually losing.[6] The physiology of foetal cardiac circulation outlines how blood was made available directly into the aorta rather than the pulmonary artery, as well as a common overriding aortic canal in both ventricles.[7]
Congenital heart disease is most likely the leading cause of stroke in children.Tetralogy of Fallot and Eisenmenger syndrome are the most common cyanotic CHDs, both of which are associated with stroke.[8] Strokes in children are uncommon, although they are growing increasingly prevalent.[9]The first cyanotic cardiac ailment to be formally described was Tetralogy of Fallot (TOF) (Karl and Stocker, 2016). Tetralogy of Fallot is the most common congenital cardiac defect, with a predominance of 9-14 percent.[10] Three out of every 10,000 newborns who are still alive are impaired. The most predominant cyanotic cardiac disease in patients older than one month is cyanotic cardiac serious illness. Up to 10% of all congenital cardiac defects are caused by this. Patients with congenital heart disease (CHD) may be at a higher risk. [11]

Ischemic stroke-induced by residual shunts, arrhythmias, and other circulatory abnormalities is a leading cause of death in the United States, owing to the severity of the consequences and the wide range of diagnostic differentials. With increasing age, the type of stroke changes as well. [12] Up to 80% of children who suffer from ischemic stroke have a cerebrovascular illness. The general population's prevalence of cerebrovascular accidents in the sort of stroke that a person has differs with age. The cerebrovascular disease affects up to 80% of children who have an ischemic stroke. In the general population, cerebrovascular accidents are widespread. [13]

Patient information:

A known case of a one-year-old male child with Tetrology of Fallot and hemiparesis on his left side was admitted to the pediatric ward in the tertiary care hospitalWardha for treatment. As narrated by the mother, this 1-year old male child was a known case of Tetrology of Fallot from birth and was brought here with complaints of bluish discoloration of the skin, depressed activity and breathing difficulties since 2 hours following excessive cry and was referred to our hospital for further management. after all the general and routine examinations and investigations such as blood, urine and 2D echo,MRI and the doctor diagnosed the case of congenital heart disease with tetralogy of Fallot with hemiparesis on the left side.

Medical family and socio-economical history:

He has a track record of cyanotic spells with a history of weakness of the left side of the body at eight months of age, and he took the treatment regularly. There was no previous history of bowel or bladder problems. Family history was not significantly related to this disease. Their socioeconomic status was good. Child was immunizes till 1 year.

Physical examination and clinical findings:

Onadmission,the child health condition was poor, and he was alert and aware. He had a moderate physical build, and his personal hygiene was maintained properly. His heart rate were 154 beats per minute and a respiratory rate of 48 breaths per minute, blood pressure was 92/56 mm Hg, the temperature of afebrile, the height of 82 cm, the weight of 6 kg, and BMI of 8.92 and General examination was normal. Vital parameters of normal. Cyanosis present child look dull and depressed, anxious and excessive cry present, activity was depressed .right side facial weakness present.

Child has a track record of cyanotic spell with a history of weakness on left side of the body at 8 months of age, and he took the treatment regularly. Now as narrated by the mother, the patient is a known case of Tetrology of Fallot and was brought with complaints of bluish discoloration of the skin, depressed activity and breathing difficulties for 2 hours following excessive cry and was referred to tertiary care hospital for further management. Patient admitted to the pediatric ward and managed conservatively,2D echo done s/o CHD-TOF, routine blood investigations were done, and CVTS Opinion was done, patient transfer to CVTS for surgery, patient operated ICR TOF (TA patch) correction was done.

Diagnostic assessment:

Based on the patient's medical history, physical examination, and other factors, other investigations such as. A complete blood count were done. The patient hemoglobin level was 10 gm %, total platelets count were decreased to 0.97 lac/mm, her red blood cell (RBC) count was 8.61 million/MCL increased, and her white blood cell (WBC) count was 20600 was increased. Sickling negative, routing urine test was normal. T4 9.82ng/dl increased. The virological test was normal. MRI BRAIN: The result was a small acute infarct in the right cerebellar hemisphere. Changes of encephalomalacia in the right frontal lobe. 2D echo was done s/o CHD-TOF.

Diagnostic challenges: During the diagnostic evaluation, there were no difficulties.

Diagnosis: Following a physical examination and investigation, the Doctor of Identity an instance of TetrologyFallot and left side of hemiparesis.

Prognosis: After receiving all treatment, the prognosis was good.

Therapeutic intervention:

The sufferer was given medical treatment. The child was initially treated with normal saline. Medication was given to a child, Tab.Lanzole junior 7.5mg OD, Inj.Ceftriaxone 90mg BD, Inj.Amikacin 60mg OD, Syp. Ibugesicplus 2.5ml TDS, Syp.Multivitamin 2.5ml OD, Syp.Calcimax 2.5ml BD, syp.Furoped 0.6mg BD, syp.Digoxin 50mcg OD, Augmentin TDS, Syp. Lanzole junior, nebulization given .Vital sign monitoring, urine output charting, and belly girth traceability all are done with therapeutic intervention recommendations. He received all treatments with positive results for hemiparesis. Physiotherapists teach the exercises for children to parents. Now His signs and symptoms are reduced.

Follow-up and outcome: After getting all treatment regularly. The child was vitally stable, and now the general condition was improved. The doctor suggests discharge.

Discussion:
A case of 1 year old boy was admitted in pediatric ward in tertiary care rural hospital, wardhawith chief complaint of bluish skin discoloration, depressed activity, and difficulty breathing. This case was diagnosed after a physical examination and investigation by a doctor. Case of Tetrology of Fallot and left side of hemiparesis. Surgical management was done successfully .the child takes medication regularly, and his outcome is good.
Some studies show despite advancements in early diagnosis, a transition from a 2-stage correction to a 1-stage repair in infancy, and improved outcomes, most adult patients with repaired TOF continue to have residual anatomic and hemodynamic abnormalities, resulting in poor prognosis. Morbidity and death rates are rising[14]. Relief of blockages in the RVOT and pulmonary valve frequently causes pulmonary regurgitation, which sets in motion a chain of pathophysiologic events that leads to RV failure. Pulmonary valve replacement is required because of dilatation and consequent malfunction (PVR).[15-18]
An adult with TOF should be assessed for artery stenosis, RVOT aneurysm, and tricuspid regurgitation, in addition to pulmonary regurgitation. Multimodality imaging is essential for residual ventricular septal defect, LV dysfunction, aortic valve regurgitation, and aortic dilatation.[19-21]The most common neurological consequences of untreated congenital heart disease are stroke and brain abscess.[22-25]

Conclusion:
Patients with a history of hypertension, diabetes, or structural heart abnormalities are more likely to have a cerebrovascular accident than those who are younger. Strokes in young patients can have a variety of causes, including untreated congenital heart disease, which can lead to the production of clots and their release into the peripheral circulation, blocking the blood supply to that area. In this caseone year child has a tetralogy of Fallot with right-side hemiparesis. After starting treatment, the patient's symptoms began to fade and a child condition was improved. In this case, we discuss the association of the tetralogy of Fallot with right-side hemiparesis.
Informed consent: Before taking this case, the patient's parents were given information, and their informed consent was acquired.
Conflict of Interest: There are no conflict of interests.
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