



## A CASE OF TRUNCUS ARTERIOSUS CORRECTION DONE ADMITTED FOR CLOSED REDUCTION OF DISTAL RADIUS – A CHALLENGING CASE REPORT

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**ABSTRACT** Truncus arteriosus is an uncommon congenital cardiac defect. The incidence is about 1-3%. Here, we are reporting a case of truncus arteriosus corrected at the age of 3 years, now 17 year old, was admitted in ER. The patient had history of fall from 2-wheeler, He sustained injury to right wrist.

**KEYWORDS :** Truncus arteriosus, corrected, injury radius, closed reduction, GA

### INTRODUCTION-

At present truncus arteriosus (TA) has been known as Common Arterial Trunk (CAT). CAT occurs due to abnormal development of the foetal cardiovascular system during the first 8 weeks of prenatal. This anomaly presents at birth. [1]

CAT is definite with a single great artery that begins from the base of the heart and an inter-ventricular septal defect (VSD).[2,3] The common artery supplies the coronary, pulmonary arteries, and systemic circulations. These patients were undergoing operation with late inclusive repair and occasionally undergoing the pulmonary arteries banding.[4]

Currently, most patients have been treated by early corrective repair, particularly in the neonatal period.[5] Truncal valve in these patients may have, three, four or two cusps and display variable grades of insufficiencies. Several trials have shown that preoperative truncal valve regurgitation was a major risk factor for death.[6]

### Clinical Scenerio -

17 old boy sustained injury to the right wrist due to fall from 2 wheeler No significant history of any head injury, loss of consciousness, ENT bleed, or seizures.

X ray right hand diagnosis - right intra-articular fracture of distal-end of radius with ulnar displacement.

### On Examination –

- He is conscious and oriented, afebrile.
- Weight: 45kgs
- PR- 95bpm, normal volume, regular.
- BP: 100/70mmhg in right arm supine position.
- Cardio Vascular System: S2 loud, Harsh ejection systolic murmur present.
- Respiratory System - Bilateral air entry present, No added sounds
- CNS – No neurological deficit
- Airway assessment – clinically normal

### PAST HISTORY – more significant

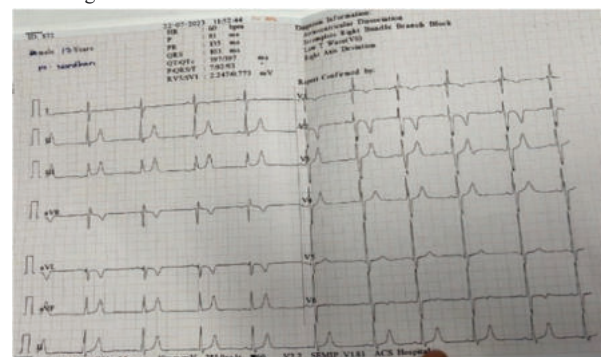
- The patient had a history of open heart surgery done in 2009 when he was 3 years old.
- On regular follow up, was advised for Redo Repair at the age of 18 years.
- Truncus arteriosus repair was done using 16mm bovine jugular vein conduit.
- Patient's 2D echo recent finding showed mildly increased right ventricular outflow tract gradient 32mmHg, dilated aortic root with ascending aorta and moderate aortic regurgitation, and no

residual ventricular septal defect.

### Investigations - Laboratory Test-

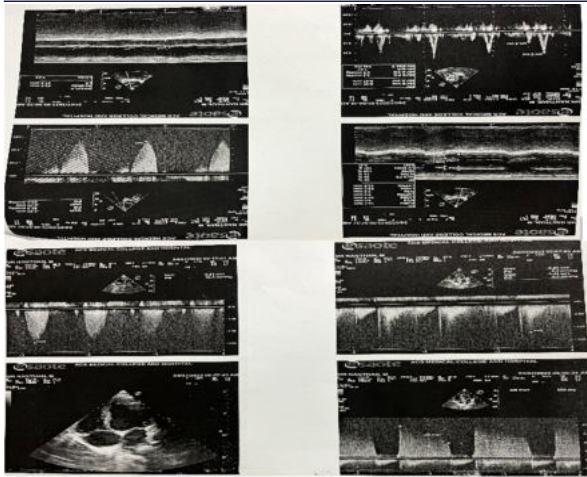
- Haematological investigations
- Hb-13.6g/dl, WBC-6000,
- Platelet -1.47lakhs, coagulation profile was normal
- Blood urea-11mgm and serum creatinine-0.60 mgm
- Random blood sugar –90 mgms

### ECG - right bundle branch block



### X-Ray chest PA view –

- Heart size normal
- Narrow mediastinum
- Pulmonary plethora



### ECHO-

### REPORT-

- S/P Truncus Arteriosus repair
- Dilated Aortic Root
- Moderate AR
- Increased RVOT Gradient
- No RWMA
- No PAH
- No Pericardial effusion
- No LA/LV clot or vegetation

The patient was taken up for procedure under ASA 3 – E High-risk consent was taken for post-operative elective ventilation, inotropic support, and for post-operative intensive care.

### Anaesthetic Goal-

- 1) Maintain oxygenation
- 2) Avoid increase in Pulmonary vascular resistance
- 3) Adequate analgesia
- 4) Perioperative inotropic support if necessary
- 5) Postoperative monitoring and observation in Cardiac Care Unit

### Anaesthetic Technique-

- Standard ASA monitors connected and baseline vitals recorded.
- Secured 18G IV line access.
- Patient preoxygenated for 3mins with 6l/min O<sub>2</sub>.
- Patient was pre-medicated with Injection glycopyrrolate 0.2mg Inj. Midazolam 1mg, Inj.Fentanyl 100mcg.
- Induced with Inj.Etomidate 16mg + 2mg was given and assist-spontaneous ventilation was done throughout the procedure.
- Closed reduction with POP fixation was done for the patient.
- Intra-operatively 500ml of Ringer lactate was transfused slowly avoiding fluid overload.
- Postop vitals: BP-110/70mmhg, PR-110/min, SP02-99% on oxygen support.
- Patient was shifted to CCU for continuous monitoring.

### DISCUSSION-

Persistent truncus arteriosus (TA) is a rare, congenital, cyanotic heart defect characterized by a ventricular septal defect (VSD), a single truncal valve, and a common ventricular outflow tract (OT). Systemic venous blood and pulmonary venous blood mix at the VSD level, and the resulting desaturated blood is ejected into the single OT.

The perfect surgical technique is frequently suggested to be done in the neonatal period, while some centers performing surgical repair in the age of 2-3 months. The truncus, the pulmonary vascular resistance (PVR) will determine the Pulmonary blood flow, which is torrential.(7)

There are two major known classification systems that applied to explain CAT Collett/Edwards and Van Praags. Collett/Edwards classification is used more frequently.[8,9,10]

Types 1, 2, and 3 of Collett/Edwards have been illustrated by the division model of the pulmonary vessels:

Type 1 is include, an arterial trunk, short main pulmonary arterial trunk and two lateral pulmonary arteries (right and left).

Type 2 is include, arterial trunk, two branches of posterior pulmonary arteries without main pulmonary artery.

Type 3 is include, arterial trunk, two branches of lateral pulmonary arteries.

Finally, Type 4 arterial trunk distinguishes by the lack of pulmonary arteries In a literature review, Martin et al. claim that using regional anaesthesia has no advantage over the use of general anaesthesia.

The anaesthetic management of the patient is planned based on the cardiovascular pathophysiology of the truncus arteriosus and the pulmonary hypertension

In conclusion, the management of anaesthesia in patients with congenital heart disease must be individualized and should take into account the complexity of the non-cardiac surgical procedure. (11)

### Conflict Of Interest - None

### REFERENCES-

1. Russell HM, Pasquali SK, Jacobs JP, Jacobs ML, O'Brien SM, Mavroudis C, et al. Outcomes of repair of common arterial trunk with truncal valve surgery: A review of the society of thoracic surgeons congenital heart surgery database. *Ann Thorac Surg.* 2012;93:164-9. [PMC free article] [PubMed] [Google Scholar]
2. Collett RW, Edwards JE. Persistent truncus arteriosus; a classification according to anatomic types. *Surg Clin North Am.* 1949;29:1245-70. [PubMed] [Google Scholar]
3. Van Praagh R, Van Praagh S. The anatomy of common aorticopulmonary trunk (truncus arteriosus communis) and its embryologic implications. A study of 57 necropsy cases. *Am J Cardiol.* 1965;16:406-25. [PubMed] [Google Scholar]
4. Russell HM, Jacobs ML, Anderson RH, Mavroudis C, Spicer D, Corcrain E, et al. A simplified categorization for common arterial trunk. *J Thorac Cardiovasc Surg.* 2011;141:645-53. [PubMed] [Google Scholar]
5. McGoon DC, Rastelli GC, Ongley PA. An operation for the correction of truncus arteriosus. *JAMA.* 1968;205:69-73. [PubMed] [Google Scholar]
6. Ebert PA, Turley K, Stanger P, Hoffman JI, Heymann MA, Rudolph AM. Surgical treatment of truncus arteriosus in the first 6 months of life. *Ann Surg.* 1984;200:451-6. [PMC free article] [PubMed] [Google Scholar]
7. Truncus Arteriosus – National Library of Medicine **Authors** - Suneet Bhansali<sup>1</sup>; Colin Phoon<sup>2</sup>. **Affiliations** -1.New York University/NYU Langone Hospital/2.NYU Langone Health
8. Rosenquist GC, Bharati S, McAllister HA, Lev M. Truncus arteriosus communis: truncal valve anomalies associated with small conal or truncal septal defects. *Am J Cardiol.* 1976;37:410-2. [PubMed] [Google Scholar]
9. Sun LC, Wang JK, Lin MT, Wu ET, Lu FL, Lue HC, et al. Persistent truncus arteriosus: twenty years experience in a tertiary care center in Taiwan. *Acta Paediatr Taiwan.* 2005;46:6-10. [PubMed] [Google Scholar]
10. Curi-Curi P, Cervantes J, Soule M, Erdmenger J, Calderón-Colmenero J, Ramirez S. Early and midterm results of an alternative procedure to homografts in primary repair of truncus arteriosus communis. *Congenit Heart Dis.* 2010;5:262-70. [PubMed] [Google Scholar]
11. Anesthetic management of a schoolboy with uncorrected truncus arteriosus type I, and severe pulmonary hypertension undergoing repair of congenital dislocation of the knee. Case report - Luis Alfonso Diaz-Fosado , Lina Sarmiento , Tamara Velazquez-Martinez