International Journal of Science and Research (IJSR)
ISSN: 2319-7064
ResearchGate Impact Factor (2018): 0.28 | SJIF (2019): 7.583

Case Report on Accidently Diagnosed Congenitally Corrected Transposition of Great Arteries (CCTGA) in a 65 Year Old Male

Dr. Riya Patel

MBBS, GMERS Medical College, Sola, Ahmedabad, Gujarat, India

Abstract: ***Congenitally corrected transposition of great arteries (CCTGA) is a very rare heart defect in which the heart's lower half is reversed. It is also called L-TGA. About 0.5%–1% of all babies born with heart defects have CCTGA. Here we present a case of a 65 year old male with CCTGA with chronic cough and breathlessness as the only symptoms. Echocardiography confirmed the diagnosis with intact inter ventricular septum, dilated right ventricle (systemic), mild tricuspid regurgitation, mild right ventricle dysfunction, good left ventricle contractility, trivial aortic regurgitation.***

Keywords: Congenitally corrected transposition of great vessels, Congenital heart disease.

1. Introduction

CCTGA is a very rare congenital cardiac anomaly. **In CCTGA, the two ventricles and their attached valves are reversed.** The weaker, larger right ventricle grows on the heart's left side. It pumps the blood to the body. The stronger, smaller left ventricle grows on the heart's right side. It pumps blood to the lungs. Also the body's weakest valve—the tricuspid valve—serves as the mitral valve[1].Usually, when the heart is in situs solitus, transposition is of the levo form (aorta anterior and to the left), the mitral valve and morphologic left ventricle (pulmonary ventricle) are right-sided, and the tricuspid valve and morphologic right ventricle (systemic ventricle) are left-sided.' The ventricular septum typically occupies a sagittal plane. [3]

Merely 10% of the patients with CCTGA do not have any associated anomalies like ventricular septal defect, pulmonary artery stenosis, tricuspid valve abnormalities, and mitral valve abnormalities. [2]

The patients without any associated anomalies, that is, isolated CCTGA, remain asymptomatic for many years and are usually diagnosed in later decades of life due to abnormal electrocardiograph (ECG), cardiomegaly on chest X-ray, or murmur. Echocardiography, cardiac computed tomography, and cardiac magnetic resonance imaging (MRI), and electrocardiography are successfully utilized for meticulous diagnosis.[2]

2. Case Report

A 65 year old male, who was diagnosed with CCTGA at 47 years of age, while undergoing examination for an insurance policy, has complains of breathlessness and chronic cough. He is non diabetic and not hypertensive. He was asymptomatic at the time of diagnosis.

While undergoing examination for an insurance policy, the patient's ECG was found to be abnormal with decreased T wave amplitude in lead 1 and avL, prolonged PR interval and a left axis deviation. He was referred for an echocardiography at a higher centre. Echocardiography confirmed the diagnosis along with mild left ventricular systolic dysfunction, ejection fraction 45%, anterior wall hypokinetic, reduced left ventricular compliance, trivial mitral regurgitation, trivial tricuspid regurgitation and trivial aortic regurgitation. A colour Doppler was also performed which revealed normal left ventricular compliance and moderate mitral regurgitation. As the patient was asymptomatic no further intervention was done. The patient was informed and explained about his condition and asked to follow up in case of any symptoms.

Up to the age of 60 the patient was totally asymptomatic and did no follow up. At the age of 60 he started developing symptoms of chronic cough for which he considered certain home based remedies. Initially, local anti-tussives treated these symptoms. Later, he developed breathlessness, chronic cough and dizziness due to which he consulted medical help for diagnosis. Clinically, he was afebrile, heart rate 74beats/min, all peripheral pulses were felt, no cyanosis/clubbing, S1S2 normal and no murmur was heard. An ECG was again performed which showed low amplitude T wave in lead 1 and avL and prolonged PR interval. Echocardiogram was performed again which showed CC-transposition of great arteries, L malposed great arteries, intact inter ventricular septum, dilated right ventricle, mild tricuspid regurgitation, mild RV dysfunction, good LV contractility and trivial aortic regurgitation. Chest x-ray PA view was essentially normal with mild atherosclerotic changes seen in aortic knuckle. Patient was put up on drugs losartan and Torsemide 10mg tablets and explained the need for future pacemaker placement. He was also advised regular follow up every 6 months.

3. Discussion

The CCTGA is a rare congenital heart disease often diagnosed in adult age.This finding can be explained by the fact that echocardiography was not available in the era involved and patients with CCTGA without other anomalies did not require medical attention in childhood [4]. Isolated

CCTGA occur without any associated anomalies but can also be accompanied with complications [2]. In our case, the patient was asymptomatic concerning the presence of CCTGA, which was diagnosed accidently when the patient presented for a routine health check-up, but on further investigation, mildly reduced LV compliance with a trivial MR, trivial TR and AR with a prolonged PR interval were found. By and large, the symptoms commonly associated with occurrence of TR in CCTGA are decreased stamina, dyspnoea, chest pain, and palpitations [5]. Regardless of this, the patient did not present with any of these symptoms of TR at the time of diagnosis but were seen later on.

It was evidenced that, at 45 years of age, 67% of the patients with CTGA presented congestive heart failure,(CHF) an extremely common complication in fourth and fifth decades, and 25% of the patients without associated lesions had that condition. It was also concluded that the tricuspid insufficiency is strongly associated to the right ventricular dysfunction and congestive heart failure (CHF), but it is still speculative whether this is the cause or just a secondary complication of the other fore mentioned conditions[6].

Patients with relatively complicated CCTGA eventually require cardiac transplantation; while some patients can be managed with pacemaker implantation. More often than not, pacemaker implantations in such settings have been technically challenging pertaining to the complex heart anatomy[7]. Moreover, pacemaker implantation in such patients might lead to worsening of systemic ventricular function and atrioventricular valve regurgitation. The reason behind this is probably the modification in position of ventricular septum that induces a septal shift and failure of tricuspid valve coaptation [8][2].

Regardless of all these complications, our patient has not undergone any major intervention, is being treated on drugs and has been explained the need of pace maker in future with a follow up every 6 months or even in the presence of any minor symptoms.

4. Conclusion

This was a rare case presentation as the patient remained asymptomatic for a long time (60 years); moreover, it was an accidental diagnosis of CCTGA. The patient is still living with minor symptoms with a drug based therapy and continues all his daily routine without much difficulty. Most of such cases require a pacemaker placement so we need to be prepared for that.

References

[1] https://www.achaheart.org/your-heart/health-information/cctga/
[2] A Case of Congenitally Corrected Transposition of Great Arteries: An Infrequent Happenstance Prakash Ajmera and Vikas Medep
[3] Corrected Transposition of the Great Arteries Associated Ventricular Rotation By ROBIN H. KINSLEY, M.D., DWIGHT C. MCGOON, M.D., AND GORDON K. DANIELSON, M.D.
[4] Congenitally corrected transposition of the great arteries in an 83-year-old asymptomatic patient: description and literature review Angelo Placci,[1] Luigi Lovato,[2] and Marco Bonvicini[3]
[5] M. Lewis, J. Ginns, and M. Rosenbaum, "Is systemic right ventricular function by cardiac MRI related to the degree of tricuspid regurgitation in congenitally corrected transposition of the great arteries?" International Journal of Cardiology, vol. 174, no. 3, pp. 586–589, 2014.
[6] Graham TP Jr, Bernard YD, Mellen BG, Celermajer D, Baumgartner H, Cetta F, et al. Long-term outcome in congenitally corrected transposition of the great arteries: a multi-institutional study. J Am Coll Cardiol. 2000; 36 (1): 255-61.
[7] C. A. Warnes, "Transposition of the great arteries," Circulation, vol. 114, no. 24, pp. 2699–2709, 2006.
[8] C. A. Warnes, "The adult with congenital heart disease: born to be bad?" Journal of the American College of Cardiology, vol. 46, no. 1, pp. 1–8, 2005.