

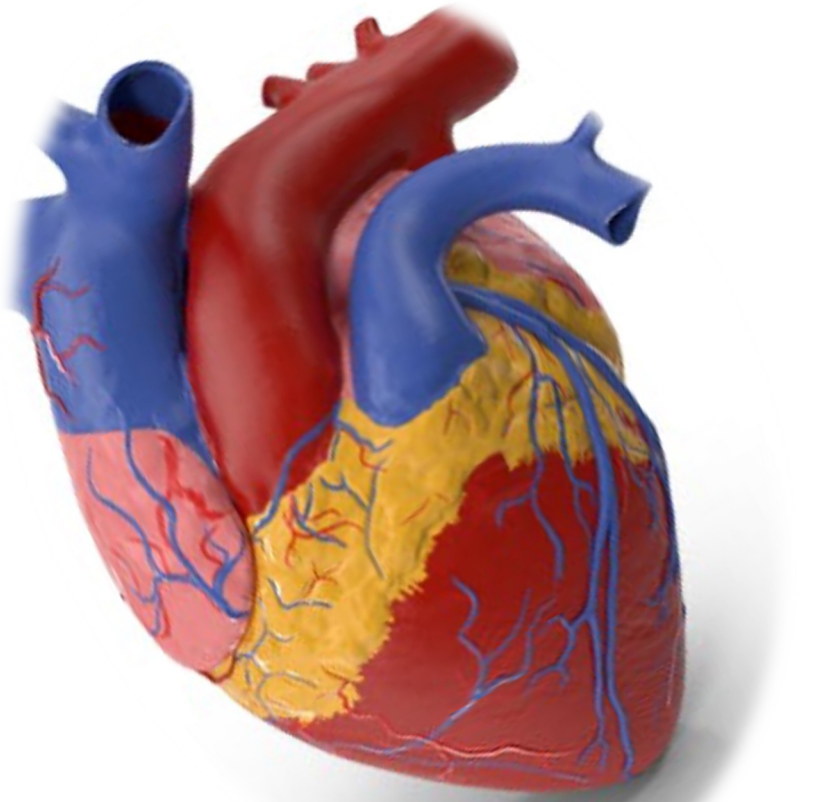
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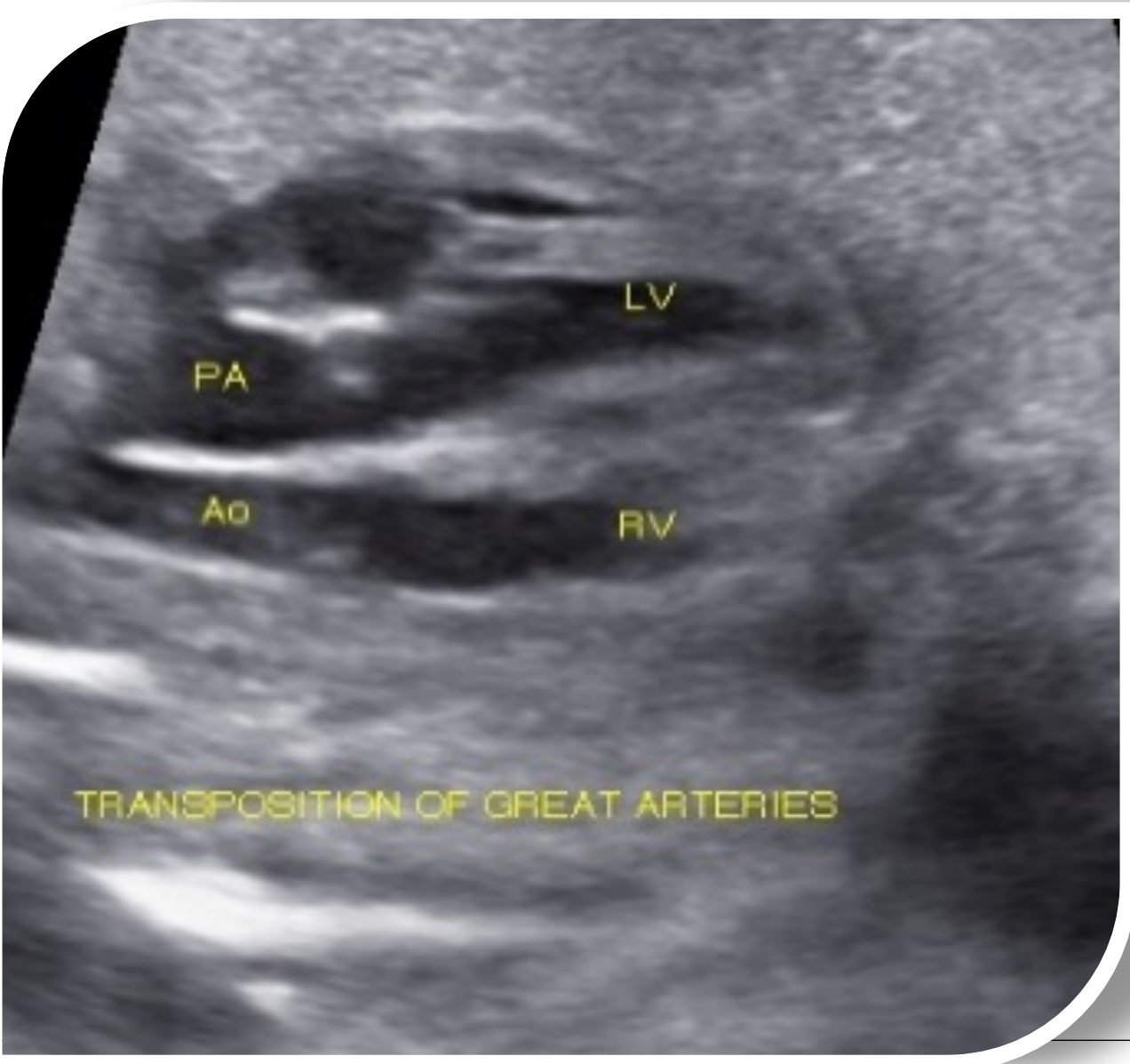
Autocorrection: a case of congenitally corrected transposition of great arteries



1.

INCIDENCE

Congenitally corrected transposition of the great arteries (CC-TGA) is an exceedingly rare condition characterized by atrio-ventricular and ventriculo-arterial discordance. The aorta arises from the right ventricle and the pulmonary artery arises from the left ventricle. It is seen in 3% of all congenital heart disease.



CASE REPORT

This is a case report of a fetal Dextro- transposition of the great arteries (D-TGA) antenatally, however, on neonatal 2d- echo, the final diagnosis was in fact CC-TGA. The baby was discharged well. It is essential to diagnose CC-TGA antenatally, albeit better prognosis at birth, as it predisposes the patient to chronic heart failure later in life.

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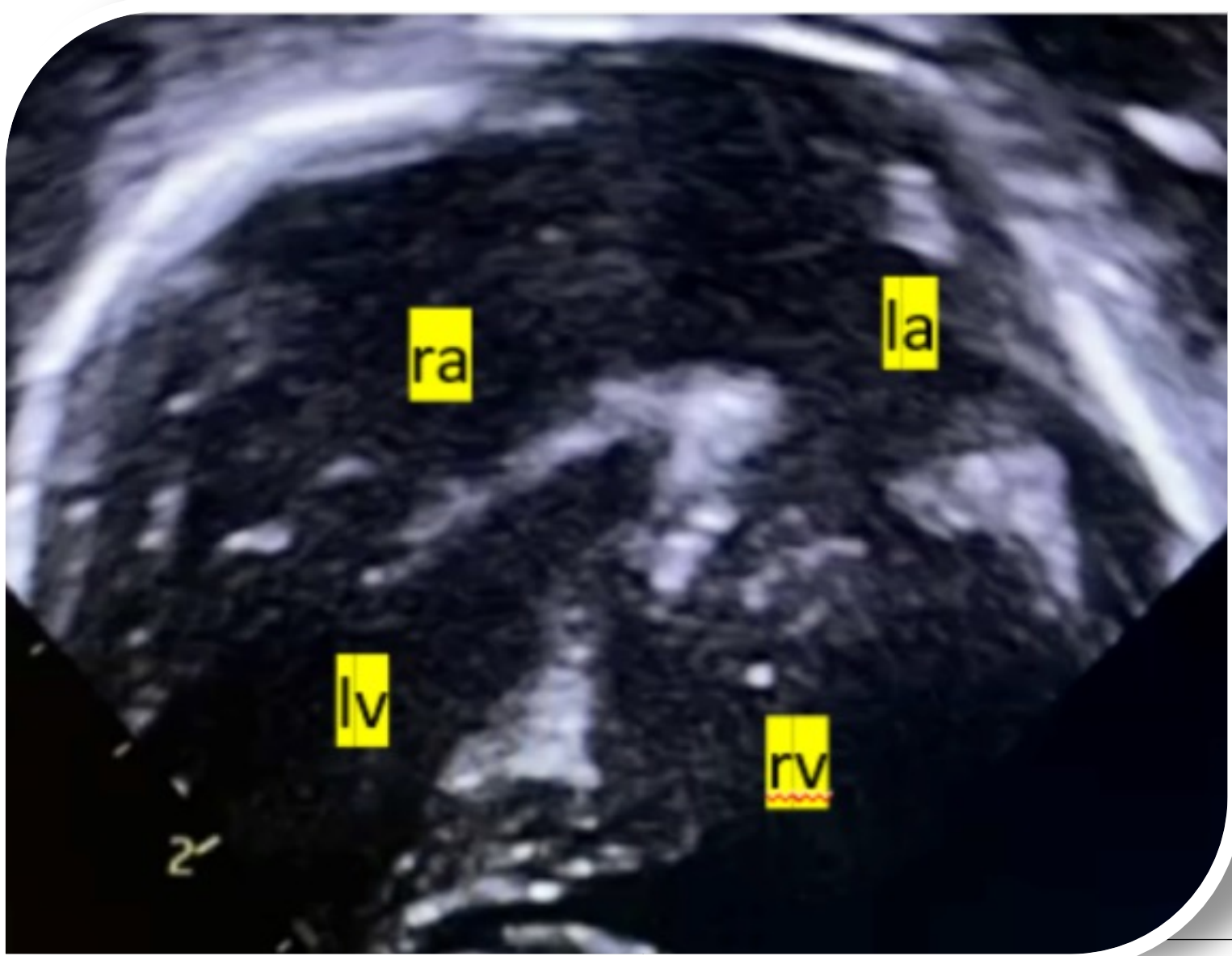


Figure 2. Atrioventricular discordance. Trabeculated left sided right ventricle; Smooth walled right sided LV; Positioning of the valves: the left AV valves (tricuspid) are more apically displaced. Source: Division of Pediatric Cardiology, UP-PGH

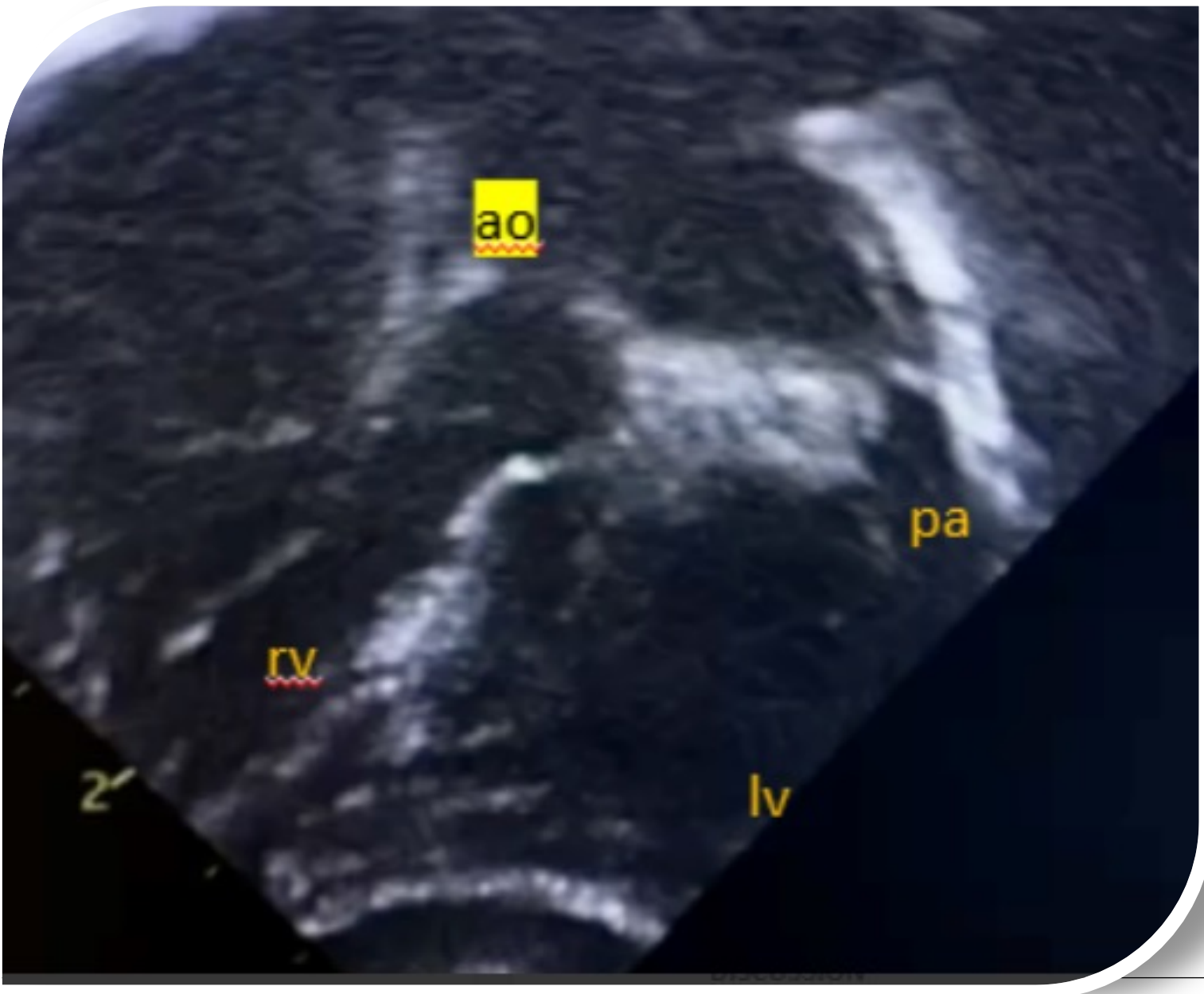


Figure 3. Ventriculoarterial discordance. Great arteries are parallel and not crossing each other. Pulmonary artery is arising from morphological left ventricle and the aorta from morphological right ventricle. Source: Division of Pediatric Cardiology, UP-PGH

MANAGEMENT

Diagnosing between the two types is crucial as the management differs widely. D-TGA requires arterial switch surgery because it is incompatible with life, while CC-TGA does not warrant an immediate surgery. However, CC-TGA predisposes an individual to arrhythmia and chronic heart failure later in life, hence it is crucial to not miss this diagnosis antenatally. The recorded survival rate is good at 1 year (84%) with a decline to 60% at 15 years.

SUMMARY

This can prompt early evaluation and monitoring for complications such as heart block, arrhythmia, and heart failure. Aside from the rarity of the case, this paper highlights the importance of understanding of the basic fetal ultrasound findings, involving very different disease outcomes. Monitoring and early intervention is an important aspect on this case.

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Table 1. Sonographic findings comparison of normal heart, D-TGA and CC-TGA

	NORMAL	D-TGA	CC-TGA
Four-chamber view	Left atrium connected to left ventricle Right atrium connected to right ventricle Moderator band is on the right Tricuspid valve placed nearer the apex of the heart is on the right Right ventricle has two papillary muscles Smooth left ventricle		Left atrium connected to right ventricle Right atrium connected to left ventricle Right ventricle is on the left side The moderator band is at the left side The offsetting of the tricuspid valve is at the left side Two papillary muscles seen on the left side
Outflow tracts	Crossing over direction of the aorta and the pulmonary trunk Pulmonary trunk arises from the right ventricle Aorta arises from the left ventricle	Parallel outflow tracts instead of crossing over Pulmonary trunk arises from the left ventricle Aorta arises from the right ventricle	
Three-vessel tracheal view	Aortic and ductal arches are combined into the descending aorta as a V-shaped confluence Both arches are similar in size and located towards the left of the trachea (8)	Absence of three vessel view The pulmonary trunk lies beneath the aortic arch	Ascending aorta on the left anterior aspect of the pulmonary artery

Diagram 1. Comparison of D-TGA and CC-TGA
A shows the normal atrio-ventricular and ventriculo-arterial concordance. B shows the D-Transposition of the great arteries (D-TGA). D-TGA is incompatible with life as there is no oxygenated blood going into the systemic circulation. C shows the congenitally corrected TGA (CC-TGA). Both ventricles and great arteries are switched with CC-TGA such that there is blood flow coming from the lungs going into the systemic circulation. RA right atrium; RV right ventricle; LA left atrium; LV left ventricle; PA pulmonary artery; AO aorta. (Diagram made by the author)

