

# PHOTO QUIZ

## What is your diagnosis?

A 27-year-old man was admitted due to cyanosis and exertional dyspnea. Echocardiography revealed cardiomegaly, right ventricular hypertrophy and pulmonary artery dilation. Cardiac CT scan was done to evaluate the neglected cardiac anomaly (Figures 1-4).



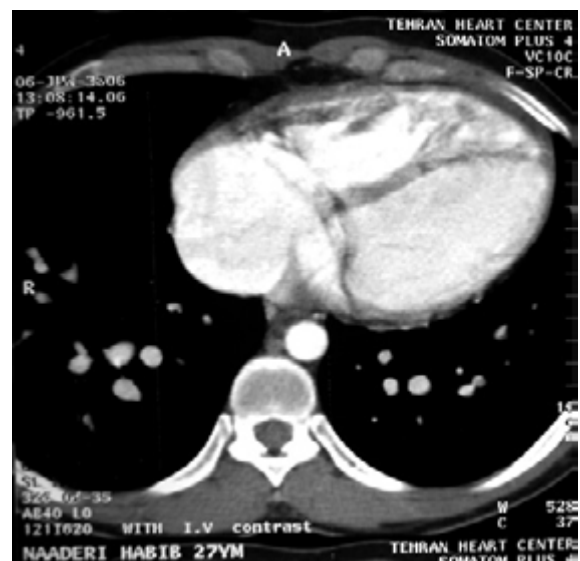
**Fig 1.** Cardiac CT angiography at the level of pulmonary artery bifurcation.



**Fig 2.** Cardiac CT angiography at the level of aortic and pulmonary artery roots, base of heart.



**Fig 3.** Cardiac CT angiography, four chamber view.



**Fig 4.** Cardiac CT angiography, cardiac apex.

**What is your diagnosis?**

# Diagnosis: Uncorrected (D Loop) Transposition of The Great Arteries

Sh. Shirani MD<sup>1</sup>

M. Soleymanzadeh MD<sup>2</sup>

1. Assistant professor, Department of Radiology, Tehran Heart Center, Tehran, Iran.

2. Department of Radiology, Tehran Heart Center, Tehran, Iran.

Uncorrected transposition of the great arteries (UTGA) accounts for 5 % of congenital cardiac malformations.<sup>1</sup> UTGA happens at 4 to 6 weeks of intrauterine life, when anomalous development of the spiral septum that divides the truncus places the origin of the aorta anterior to the pulmonary artery, so that the right ventricle gives rise to the aorta instead of pulmonary artery (ventriculoarterial discordance).<sup>2,3</sup>

This anomaly is incompatible with life unless another left-to-right shunt (PDA, ASD, or VSD) coexists.

The heart size is normal at birth but enlarges within a few months. Enlargement of the right atrium makes the right heart border more convex and on the frontal projection the heart looks like "an egg on its side".

The superior mediastinum is narrow due to displacement of aorta and pulmonary artery. The pulmonary trunk in UTGA arises from the left ventricle and takes origin in the midline, behind and a little to the left of the ascending aorta.<sup>2</sup>

CT angiography displays the position of cardiac chambers and great vessels precisely.<sup>4</sup>

In UTGA, the heavily trabeculated right ventricle, containing the moderator band, is on the right side of the left ventricle, and is fed by the right atrium (atrioventricular concordance), but the right ventricle gives rise to aorta (ventriculoarterial discordance).

Noticing the ascending aorta that originates anteriorly and slightly to the right of the pulmonary trunk on axial CT images is diagnostic for UTGA.<sup>2</sup>

## References

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4. Haaga J, Lanzieri C, Gilkeson R. CT and MR imaging of the whole body vol 1. 4th edition; Mosby; 2002: 1063-1066.