

Letter to the Editor

To the Editor:

We read with great interest the report by Yoshigi et al,¹ describing a patient with tetralogy of Fallot and co-existing aortic coarctation. Because of the rarity of this association, we describe a seventh patient, adding a few comments about possible pathogenesis.

A one-year-old girl with congenital hypothyroidism became increasingly cyanotic. Echocardiography and angiography revealed tetralogy of Fallot, a left aortic arch with mild tubular hypoplasia beyond the right common carotid artery, and small left superior caval vein. The left anterior descending coronary artery coursed anomalously over the infundibulum of the right ventricle. The gradient across the isthmus was 30 mm Hg.

Following resection of the coarctation and end-to-end repair, a modified Blalock-Taussig shunt was constructed. The postoperative course was unremarkable. At the age of three, she underwent definitive correction of the malformation. The child is presently in good condition.

Cardiovascular malformations can be classified in many ways. One system is based upon postulated disordered embryonic mechanisms.² In this mechanistic approach, tetralogy is attributed to abnormal migration of ectomesenchymal tissue, and loosely labelled the "conotruncal and branchial arch vessel" group. Coarctation is postulated to be due to altered intracardiac blood flow, and placed in a different grouping. It is possible, however, that certain cardiovascular malformations, such as coarctation, may be mechanistically heterogeneous. If the theory of altered flow is correct, the most coarctations associated with the typical juxtaductal shelf would be considered a disruption of

normal cardiac development. The anatomy in our patient, and the other patients reported in association with tetralogy, in contrast, has been described as involving a longer hypoplastic segment of the arch, and arrangement known as tubular hypoplasia. We speculate that these cases may be viewed as a primary development error, and thus classified in a group other than that involving disordered flow. In other words, coarctation may look different when it results from different embryonic mechanisms.

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