Anatomical substrate for biventricular repair in patients with left isomerism

Sir,

We read the interesting paper by Bansal *et al*. on anatomical surgical repair in a patient with left isomerism of the atrial appendages, l-looped ventricles, concordant ventriculoatrial connection, and mirrored image tetralogy of Fallot.[1]

The authors must be congratulated both for the accurate diagnosis and for the proper surgical treatment.

As reported by the authors,[1] biventricular repair in patients with heterotaxy and left isomerism of the atrial appendages was previously described as more feasible compared to cases of right isomerism, due to a less complex cardiac anatomy.[2,3]

In fact, in the left isomerism, the pulmonary venous connections are intracardiac, the atrioventricular canal defect is usually partial and balanced, and the ventriculoarterial connections are frequently concordant both with d- and l-looped ventricles,[3,4] while in the right isomerism, the great arteries (GAs) are virtually always parallel to each other with the anterior aorta (transposition on double-outlet right ventricle).

Usually, in the left isomerism, the GAs are normally related in patients with d-looped ventricles or "inverted" normally related (mirror image) in patients with l-looped ventricles.[3,5]

Then, in a large proportion of children with left isomerism, the "ambiguity" is only at atrial level, while

the ventricular and the arterial segments are either solitus, with d-looped ventricles and normally related GA, or inversus, with l-looped ventricles and inverted normally related GA as in the case described by Bansal *et al.*[1]

These anatomic patterns can facilitate the surgical biventricular repair[2,3] and could indicate a better morphogenetic comprehension of heart defects in patients with heterotaxy and left isomerism of atrial appendages.[5]

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Conflicts of interest

There are no conflicts of interest.

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