CMR, newer imaging adjuncts, such as feature-tracking to measure ventricular strain, have been added to the armamentarium for predicting optimal timing of pulmonary valve replacement. We congratulate the authors for their contribution to this expanding field of imaging in patients of rTOF.

References

CENTRAL MESSAGE
Unique shapes of the reconstructed right ventricular outflow tract following tetralogy of Fallot repair are associated with worse late outcomes.

Commentary: “If it ain’t pretty, it ain’t going to work pretty”

Tain-Yen Hsia, MD

“If it ain’t pretty, it ain’t going to work pretty”
—Levi Watkins, Jr, MD

Levi Watkins, Jr was a trailblazer. Born in Kansas but raised in Alabama during the birth of the civil rights movement, Watkins was 11 years old when he joined his family pastor, Reverend Dr Martin Luther King, Jr, in the Montgomery bus boycott that followed Rosa Parks’ arrest for refusing to give up her seat to a white passenger. Later, Watkins was the first African American to study medicine at Vanderbilt University and was the sole African American by the time he graduated. He entered surgical training as an intern at Johns Hopkins Hospital in 1971 and survived its notoriously difficult pyramidal scheme to become its first African American Chief Resident in Cardiac Surgery. Just 7 months after completing training, as a
junior staff cardiac surgeon at Hopkins, Watkins performed the first human implantation of an automatic defibrillator. His greatest legacy was his lifelong advocacy for inclusion, equity and opportunity in medicine, opening medical school doors for hundreds of minority and women students. By 1983, 4 years after he joined the Admissions Committee at Johns Hopkins Medical School, African American enrollment had increased from 8 to 40. The minority recruitment and retention model that he helped to create at Hopkins was adopted at numerous other institutions. However, for a generation of cardiac surgery residents at Johns Hopkins who trained under Watkins, the sound of his deep Southern Baptist voice repeating the words “if it ain’t pretty, it ain’t going to work pretty [big man]” will forever resonate in their minds and in their hearts.

In reconstructive cardiac surgery, form and function are interrelated. It is not always clear whether form follows function or function follows form, but an awareness is emerging that shape (ie, the appearance of a reconstruction) can affect how blood flows and impact clinical outcomes independent of hemodynamic perturbations. Applying advanced statistical shape analysis of 3-dimensional (3D) cardiac magnetic resonance (CMR) images, the group at Great Ormond Street has demonstrated that even in patients with no residual stenosis or obstruction, variations in the 3D shape of the aortic arch can affect how blood flows and impact clinical outcomes.

In 1966, Levi Watkins, Jr learned that he had been admitted to Vanderbilt Medical School from a newspaper headline. Suffering from repeated racist insults and attacks, he was forced to take up housing off-campus, away from his classmates. Watkins often reflected that his time as a medical student was “lonely.” Thus, it was heartening to know that when he suffered a fatal heart attack at a recruitment dinner for cardiac surgery trainee candidates, he was surrounded by his beloved residents.

**References**


Commentary: The neglected chamber: Does the infundibulum make a difference in the long-term outcome of tetralogy of Fallot?

Alvise Guariento, MD, PhD, and Christoph Haller, MD

Senac, the French father of cardiac pathology, misinterpreted the description of Aristotle’s third ventricle as the right ventricular infundibulum.1 The mystery around Aristotle’s triventricular heart was elegantly resolved by Richard and Stella Van Praagh in 1983,2 but the importance of the right ventricular infundibulum has long remained undervalued. Tetralogy of Fallot (ToF) is the congenital defect that best illustrates the role of the infundibulum, and Shen and colleagues3 add yet another twist to it.

The authors report an analysis of magnetic resonance imaging scans of patients after surgical correction of ToF with particular emphasis on the anatomy of the right ventricular outflow tract (RVOT) and pulmonary artery (PA). Measurements of lateral projections of the outflow tract were used to categorize 4 distinct geometries: tubular, with no significant stenosis along the RVOT and PA axis; pyramidal, with the narrowest segment at the distal main PA; hourglass, with the narrowest segment more proximal, but distal to the pulmonary valve annulus; and inverted trapezoid, with the narrowest segment within the RVOT. They conclude that RV remodeling was affected by RVOT geometry with the inverted trapezoid best preserving RV end-diastolic volume indices and QRS durations.

The most frequent surgical approach to ToF nowadays remains transannular patch (TAP) reconstruction. The use of a TAP causes progressive pulmonary insufficiency and chronic right ventricular volume overload, leading to RV dilation and dysfunction. This is associated with reduced functional capacity and inevitably leads to pulmonary valve replacement in adulthood. Techniques aiming at preservation of the pulmonary valve annulus and valve function have demonstrated excellent results with low reintervention rates and reduced RV dilation compared to TAP.4,5

The data presented by Shen and colleagues3 shed new light on the importance of the approach to the infundibulum in ToF. Although not well delineated in their article, the hourglass and especially the pyramidal geometry may represent patching of the RVOT—infundibular or transanular, respectively—leaving a large and supposedly noncontractile proximal infundibular segment followed by distal narrowing. An a- or dyskinetic infundibulum

References:
1. Senac, the French father of cardiac pathology, misinterpreted the description of Aristotle’s third ventricle as the right ventricular infundibulum.1
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1. Senac, the French father of cardiac pathology, misinterpreted the description of Aristotle’s third ventricle as the right ventricular infundibulum.1

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