

## Different patterns of left ventricular “rigid body rotation” in 8-year-old twins with anamnestic twin-to-twin transfusion syndrome (from the MAGYAR-Twin Study)

Attila Nemes<sup>1</sup>, Márta Katona<sup>2</sup>, Péter Domsik<sup>1</sup>, Anita Kalapos<sup>1</sup>, Tamás Forster<sup>1</sup>

<sup>1</sup>The Second Department of Medicine and Cardiology Centre, <sup>2</sup>Department of Pediatrics, Medical Faculty, Albert Szent-Györgyi Clinical Centre, University of Szeged, Szeged, Hungary

*Correspondence to:* Attila Nemes, MD, PhD, DSc, FESC. 2nd Department of Medicine and Cardiology Centre, Medical Faculty, University of Szeged, Semmelweis Street 6, PO Box 427, H-6725 Szeged, Hungary. Email: nemes.attila@med.u-szeged.hu.

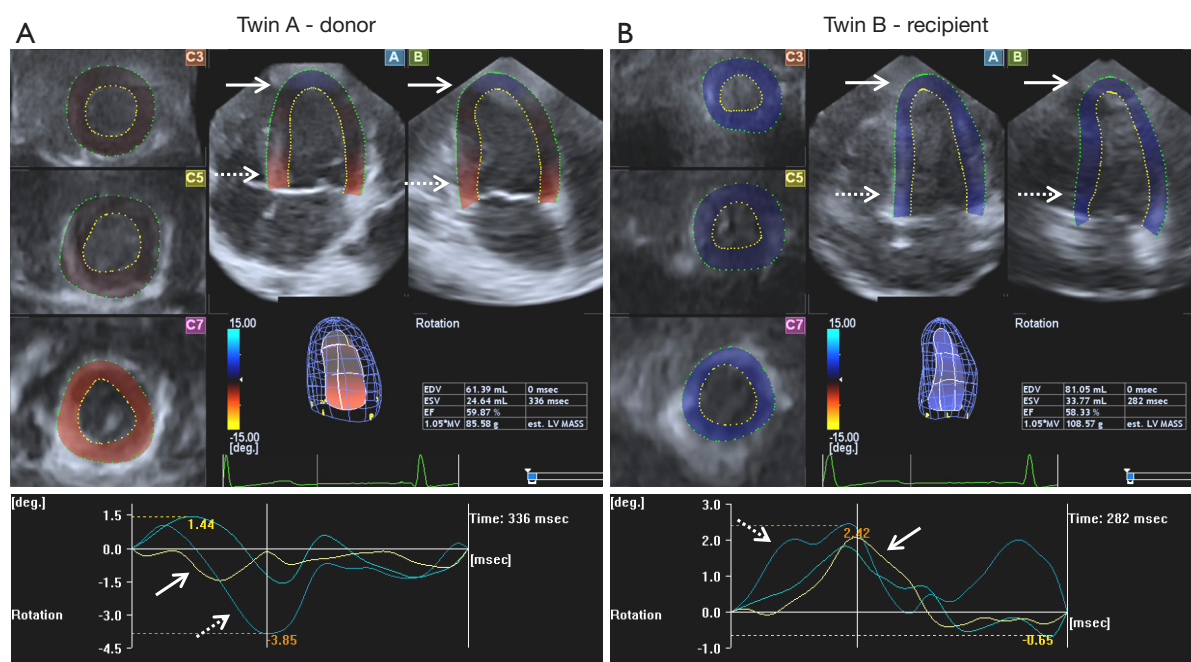
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Cardiac dysfunction could be present in twins with anamnestic twin-to-twin transfusion syndrome (TTTS) (1). An 8-year-old monozygotic diamniotic twin pair with anamnestic TTTS was referred for echocardiographic examination. Twins presented prematurity at birth (donor twin: weight, 1,570 g; Apgar: 3-7-9; recipient twin: weight: 2,490 g; Apgar: 8-9-10). They were involved in the ‘Motion Analysis of the heart and Great vessels by three-dimensional speckle-tracking echocardiography in Twins’ (MAGYAR-Twin) Study. Three-dimensional speckle-tracking echocardiography (3DSTE) was performed using a Toshiba Artida echocardiography equipment with a PST-25SX matrix-array transducer (Toshiba Medical Systems, Tokyo, Japan) (2). Normal left ventricular (LV) dimensions and ejection fraction without wall motion abnormalities were detected. 3DSTE-derived LV radial, circumferential, longitudinal, three-dimensional and area strains proved

to be  $12.8\% \pm 9.3\%$ ,  $-26.0\% \pm 9.2\%$ ,  $-18.2\% \pm 6.9\%$ ,  $15.4\% \pm 10.8\%$  and  $-40.2\% \pm 11.4\%$ , respectively in donor twin and  $22.9\% \pm 17.9\%$ ,  $-24.7\% \pm 11.9\%$ ,  $-17.4\% \pm 8.0\%$ ,  $24.8\% \pm 17.8\%$  and  $-37.6\% \pm 11.5\%$ , respectively in recipient twin. During assessment of LV rotational mechanics, both twins showed absence of LV twist as called LV “rigid body rotation” (RBR). In normal circumstances, due to LV helical myocardial structure a consequent clockwise rotation of the LV base and counterclockwise rotation of the LV apex could be demonstrated (3). In donor twin, both apical (white arrow) and basal (dashed arrow) LV rotations were in the same clockwise direction confirming LV-RBR (*Figure 1A*). In recipient twin, LV-RBR could also be exhibited but apical and basal LV rotations were in the same counterclockwise direction (*Figure 1B*). To the best of authors’ knowledge this is the first time to demonstrate different patterns of LV-RBR in twins with anamnestic TTTS.



**Figure 1** Different patterns of left ventricular (LV) “rigid body rotation” (RBR) could be demonstrated in an 8-year-old monozygotic twin pair with anamnestic twin-to-twin transfusion syndrome. Donor twin (A) showed clockwise-directed apical (white arrow) and basal (dashed arrow) LV rotations confirming LV-RBR, while recipient twin (B) had LV-RBR with apical and basal LV rotations in counterclockwise directions.

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## Footnote

*Conflicts of Interest:* The authors have no conflicts of interest to declare.

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