

**The impact of three-dimensional morphology of tricuspid valve on tricuspid regurgitation in patients with hypoplastic left heart syndrome**

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**Aim:** To investigate the impact of the three-dimensional(3D) morphology and functions of tricuspid valve (TV) on tricuspid valve regurgitation (TR) in patients with hypo plastic left heart syndrome(HLHS).<sup>2</sup>

**Methods:** The subjects were 9pts with HLHS after Fontan procedure (mean age of 10.8y) and normal healthy children(10.2y). The 3D volume data of TV was obtained from apical four chamber view by iE33 /X5-1 probe with 6 beats full volume data acquisition and stored. The acquired data was analyzed by off-line soft ware (MV-Assessment 2.3 of Tom-Tec Inc.) for 3D morphology of TV and functions.

**Results:** The 3D area of TV was larger in HLHS than in N ( $10.6\pm 3.1: 8.9\pm 3.2$  cm<sup>2</sup>), the height (Ht) was lower ( $0.5\pm 0.1: 0.6\pm 0.08$  cm), 3Darea/Ht was higher ( $19.7\pm 4.7: 15.3\pm 5.3$  cm). The displacement of TV ( $19.7\pm 4.7: 15.3\pm 5.3$  cm)and annular velocity ( $18.3\pm 5.7: 65.7\pm 7.2$  mm/s )were lower in HLHS than in N.

**In conclusion,** the 3D morphology of TV in HLHS is different from those in N, and the restricted mobility and lower annular velocity of TV might be prone to develop valve regurgitation.

