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Left: 55-year old gentleman with the diagnosis of idiopathic dilated cardiomyopathy underwent left ventricular assist system (LVAS) implantation for decompensated heart failure requiring intra-aortic balloon pumping and extra corporeal life support. We planned the therapeutic strategy aiming at bridge to recovery and assessed his cardiac function. In addition to usual echocardiographic and hemodynamic assessments, we utilized multide- tector computed tomographic angiography as a new imaging modality. It provides three-dimensional measurements of biventricular function without the use of invasive approach. Whole cardiac images throughout one cycle were obtained using 64-row multidetector computed tomography with retrospective electrocardiographic gating during the temporal halt of LVAS. The photo represented three-dimensional reconstructive end-diastolic and end-systolic right (yellow mesh) and left (red mesh) ventricle. Calculated left and right ventricular ejection fraction was 49% and 38% respectively. He could successfully be weaned from LVAS support.

Center: Vertical plication of the atrialised chamber in Ebstein malformation has been the subject of debate especially in view of a risk of coronary compromise. These two hearts with Ebstein malformation, apex pointing upward, show the inferior surface in which a longitudinal fold (between small arrows) was made to simulate such a plication. The posterior descending artery and the accompanying vein are indicated by the red and blue dotted lines. In a heart (a) with the coronary vessels deviated rightward relative to the interventricular septum (marked with a purple band), these vessels are involved with the plication. In the other heart (b), the vessels are free from any compromise since they run exactly on the septum. However, the right coronary artery along the atrioventricular groove is “kinked” because of a distortion of the tricuspid annulus as a result of annular reduction that is commonly employed concomitantly with vertical plication.

Right: Left Ventricular Reconstruction by endoventricular circular patch plasty for post infarct antero septo apical aneurysm.

A. Scarred wall affects more than 50% of LV circumference. Contractile myocardium on septum (S) and lateral wall (L) remote from the scar is distended by eccentric motion.

B. The endoventricular purse string suture is set at the limit between contractile and scarred wall excluding all asynergic non resectable areas. This contractility trial is easily seen when endocardial scar is fibrotic or calcified (years after infarct) or guided by the gadolinium late enhancement map in recent infarct.

C. Endoventricular suture which restores normal curvature and concentric contraction of contractile myocardium is tied on a rubber balloon inflated at the normal diastolic volume – 50ml/bsa –avoiding low cardiac output or delayed remodeling recurrence.

D. Once tied, the suture gives shape and size on the patch which is anchored on this "clothes line" maintaining the myocardial circular reorganization.