RADIOFREQUENCY ABLATION OF THE INTERVENTRICULAR SEPTUM TO TREAT OUTFLOW TRACT GRADIENTS IN HOCM: NOVEL USE OF CARTOSOUND TECHNOLOGY TO GUIDE ABLATION

Poster Contributions
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Background: Septal reduction is used for HOCM patients severe LVOT gradients and symptoms refractory to medication. Surgical myectomy may not be preferable due to patient choice or operative risk. Alcohol septal ablation is not possible due to anatomical restrictions in upto 15%. A percutaneous method of septal reduction not reliant on coronary anatomy is desirable

Methods: 5 patients underwent ablation, we describe follow up to 6 months in 4. CARTOsound technology (Intracardiac echocardiography (ICE) merged with the electroanatomic mapping system, CARTO) was used to create a cardiac shell (A). The exact SAM-septal contact area is ascertained from ICE images and superimposed onto the CARTO map (B). Left bundle branch conduction tissue is mapped (C). A mean of 31.7 (28-36) minutes of RF energy (50W, 60°) was delivered to the target area using retrograde aortic access and an irrigated 4mm SmartTouch D-curve ablation catheter (D,E)

Results: Resting LVOT gradient improved from 64.2(±50.6) to 12.3(±2.5)mmHg. Valsalva/exercise gradient from 93.5(±30.9) to 23.3(±8.3) mmHg. Four patients improved NYHA status from 3 to 2. Exercise time on bicycle CPEX increased from 612 to 730s. One patient died as a result of femoral arterial access complications. Scar is seen in the precise desired location upto 8mm depth on CMR (F).

Conclusion: RF ablation using CARTOsound to target the realtime SAM contact area is effective in treating LVOT gradients in HOCM. The accuracy of this septal reduction technique is unprecedented.