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**EARLY EXPERIENCE OF CT ANGIOGRAPHY TO CHARACTERISE SEPTAL VASCULAR ANATOMY PRIOR TO ALCOHOL SEPTAL ABLATION (ASA) IN HYPERTROPHIC OBSTRUCTIVE CARDIOMYOPATHY**

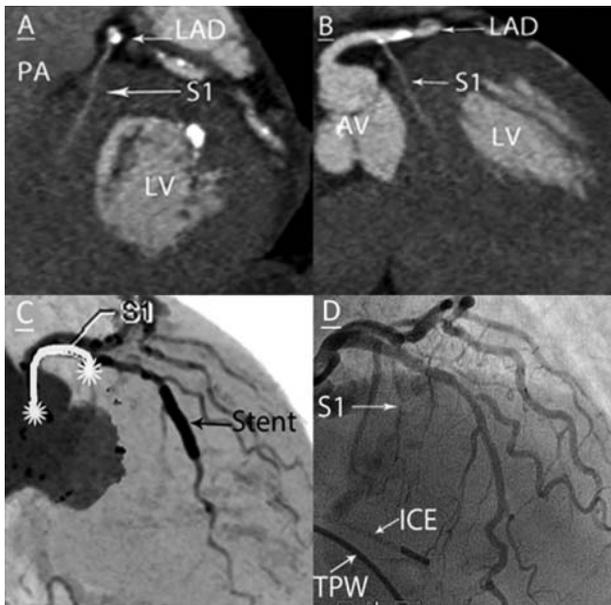
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**Introduction** ASA is an established treatment for patients with HOCM. ASA is ineffective in some: an inaccurate location of the iatrogenic infarct and inability to identify a vessel are reported as contributing factors. We report a new technique to characterise septal vascular anatomy with CT.

**Methods** Patients undergo CT angiography prior to ASA. Systolic 2D images are used to study the SAM-septal contact point and optimum target area of myocardium. Diastolic images are used to identify vascular supply and characterise the course and origin of these vessels. The target septal(s) are labelled and a 3D CT angiogram is constructed. This defines the optimum angiographic projections to identify and wire the vessel(s), removing foreshortening or overlap. The projection is noted and used as the 'working view' at ASA. All major epicardial arteries are surveyed to identify any other vessels tracking towards the septum. This may identify additional potential target vessels, and serves to exclude septal vessels with an inappropriate distribution.

**Results** 2D images show the septal vessel in the target myocardium (1A,1B). 3D images (1C) predict and mirror those created during the ASA(1D) Thirteen patients have undergone CT angiography and



**Figure 1**

progressed to ASA, 6 procedures have altered due to information taken from CT Epicardial source artery: 3 of 13 (23%) patients have been identified to have target septal arteries from the circumflex artery, 1/13 (7%) from the diagonal artery. Two of these 4 patients had previously been stated to have no appropriate artery by invasive angiography. In our retrospective cohort (91 patients, 125 procedures) 92% target vessels came from LAD, 2% Cx, 2% diagonal, 3% LMS. Septal bifurcations: A new finding of bifurcation within a septal artery supplying both RV and LV septum has been described in 2 patients. The RV branch has low pressures as it drains into the RV cavity via Thebesian veins; the LV branch enters dense, hypertrophied myocardium. Contrast injection into the proximal artery localised to RV cavity due to lower pressures and lower resistance to flow. Sub-selective contrast injection into LV branch localised to target myocardium. Injection into just the proximal artery (as in traditional practice) would lead to dismissing this artery as inappropriate. Historically 5–8% of patients have no identifiable vessel by traditional methods. Other anatomical discoveries: 5–10 mm of the proximal portion of septal arteries travels in epicardial fat before entering myocardium. Inflation of a balloon across this boundary will have differential resistance and cause 'melon-pipping' back into the parent artery. Septal arcades can be seen on CT and occluded to prevent escape of alcohol.

**Conclusions** CT angiography provides valuable information in planning ASA. This approach has the potential to describe previously unidentifiable septal artery targets and refine the localisation of the infarct zone in ASA to improve long-term efficacy.