Conclusions We report relatively early clinical evidence for the use of combined PFA ablation and 3-D mapping in achieving higher success rates, procedural safety, and efficacy. The combined approach utilized 3-D mapping; hence demonstrating the use of voltage criteria to anatomically optimize outcomes with minimal LA scarring and to confirm bidirectional block of PV potentials.

6 REFINING THE LEFT BUNDLE BRANCH AREA PACING STRATEGY IN BRADYARRHYTHMIA – WHO BENEFITS?

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Introduction A higher right ventricular (RV) pacing burden in those with permanent pacemakers for bradyarrhythmia results in increased pacing induced cardiomyopathy, atrial fibrillation and mortality. This process may necessitate upgrade to a biventricular system in time, as the cardiomyopathy progresses. Physiological conduction system pacing targets such as His-bundle pacing (HBP) or Left Bundle Branch Area Pacing (LBBAP) have been shown to generate comparatively narrower QRS complexes and thus mitigate this cardiomyopathy development. The 2021 ESC guidelines have a class 2b indication for consideration of HBP as an alternative to RV pacing in those with AV block and left ventricular ejection fraction >40%, who are anticipated to have >20% ventricular pacing burden. This promising data is put in perspective with the findings of the MELOS trial, presented at EHRA 2022. This large study (2533 patients) demonstrated a much higher rate of lead related complications (8.2%) related to LBBAP than standard RV implantation techniques, even in an experienced centre.

Purpose To retrospectively identify ECG, echocardiographic, permanent pacemaker (PPM) setting and patient factors associated with high RV pacing burden that may aid selection of those who may benefit greatest from LBBAP.

Methods We retrospectively identified 300 consecutive patients who underwent cardiac implantable electronic device insertion in our Electrophysiology Lab and followed their pacing check data for 3 years, from the years 2017–2020/21. We excluded patients who underwent generator replacements, in addition to those who had biventricular devices or implantable cardioverter defibrillators inserted. We collated ECG, echo, past medical history, pacing indications and settings for each patient. Pacing check data for each patient was gathered for a three-year follow up period. Data were analysed using SPSS v.26.

Results 160 patients met inclusion criteria. Those with an RV pacing burden >20% were categorised group one (n=85) and those with <20% in group two (n=75). Baseline characteristics of these two groups are compared in table 1. Our analysis showed that significant differences between these groups included a lower mean HR (55.1 ± 17.8 vs 57.63 ± 17.4) with a more prolonged PR interval (225.7 ± 8.34 vs. 188.6 ± 6.62) or AF/AFL on admission ECG (32% vs 7%). There were more males with a greater mean age (76.6 ± 8.4 vs 71.23 ± 12.3) in the higher VP group, and they demonstrated more incidence of dilated RA/RV on echo (Enlarged RA = 30.5%; Enlarged RV = 23.6% vs 10% and 8.4% respectively). There were significant differences in PPM indications and setting between groups, with the higher VP groups having PPM inserted for persistent high-grade AV block (CHB = 31.5% vs 4.9% and Mobitz 2 = 9.6% vs 0%) and had less MVP mode activated (Mode switch algorithm = 13.3% vs 71%).

Conclusion LBBAP lead implantation by an experienced operator should be strongly considered as a first line pacing strategy in those with persistent high grade AV nodal conduction disease such as Mobitz 2 and CHB.

PPM settings should be optimised to take advantage of anti-ventricular pacing algorithms to minimise excessive RV pacing.

RVP is currently an acceptable alternative to CSP for those with bradyarrhythmia indications who are expected to have RVP burden of less than 20%, due to it’s higher implant success and low complication rates. This may change in future as LBBAP techniques are refined.