Methods A prospective analysis of all Micra VA implants performed at Royal Papworth Hospital was carried out. This included pacing checks for up to 24 months post device insertion, evaluating complications and specifically noting thresholds and R-wave amplitude changes.

Results A total of 24 Micra leadless pacemakers were implanted at our centre between 2017 and 2020. The age range for the patients was 37 to 92 years, mean age 71 ± 13 yrs. 8 out of 24 (33%) patients had poor venous access, with bilateral subclavian obstruction, requiring the use of a leadless pacemaker. 2 out of 24 had bilateral previous pacemaker infections and extraction. For the remaining patients, 12/24 (50%) had atrial fibrillation with slow ventricular response as the primary indication for the device. 6 out of 24 (25%) patients had a history of LV impairment (4 patients severe LVSD, 2 moderate LVSD). One patient had a previous cardiac transplant. The implant was successful for all patients. One patient required the procedure to be repeated under general anaesthetic as she did not tolerate the insertion of the femoral sheath under sedation. 2 patients (8%) required repositioning of the device during the case, as initial placement was unsatisfactory. 23/24 patients had the device placed in the septum and 1 patient in the RV apex. This patient had undergone multiple previous tricuspid valve surgeries, which made septal positioning challenging, and so an apical placement was accepted. Mean procedure time was 62 ± 16 mins. Mean fluoroscopy time was 5.8 ± 4.2 mins. Implant threshold was 0.6 V ± 0.4 V. Threshold at 1 year follow up was 0.5 V ± 0.2 V and 0.6 V ± 0.2 V at 2 years. Paired T testing showed no statistically significant difference in threshold values at implant, and year 1 (p = 0.7, n = 13), or implant and year 2 (p = 0.78, n = 6). The R wave at implant was 9.5 ± 4.1 mV, and 9.8 mV ± 2.5 mV at year 1, again with no statistically significant difference (p = 0.87, n = 13). Mean battery life at 2 year follow up was 7 ± 0.5 years. Pacing percentages varied from 0.1% to 99.99%.

Conclusion Although are numbers are small, particularly for follow up over 2 years (n = 6), the initial results are encouraging, and support a low complication rate, and no evidence of premature battery failure or issues with device threshold requiring re intervention. It is imperative that further studies are carried out to give a picture of longer term follow up for the leadless Micra VA pacemaker focussing on these two key issues.

Conflict of Interest nil