and HWXGs, and the accuracy of arrhythmia diagnosis by Huawei watch ECG was assessed by standard ECG.

**Results:** In 318 Huawei watch ECGs, 9 HWIGs (2.8%) and 2 HWXGs (0.6%) were not qualified for analysis. In 234 cases of sinus rhythm (sinus bradycardia 34, sinus tachycardia 48, NSR 152), the P wave amplitude was 0.05±0.04mV in HWIGs and 0.11±0.03mV in HWXGs (p<0.05). In 34 cases of sinus bradycardia, correct diagnoses were obtained in 26 (76.5%) HWIGs and 33 (97.1%) HWXGs (p<0.01). In 18 cases of AV block, correct diagnoses were obtained in 12 (66.7%) HWIGs and 17 (94.4%) HWXGs (p<0.01). In 98 cases of tachycardia (sinus tachycardia 48, SVT 10, atrial flutter 9, AFib 29, VT 2), correct diagnoses were obtained in 72 (73.5%) HWIGs and 91 (92.9%) HWXGs (p<0.05). In 36 cases of AFib, correct diagnoses were obtained in 33 (91.7%) HWIGs and 35 (97.2%) HWXGs (p<0.05).

**Conclusion:** P wave recognition and arrhythmia diagnosis accuracy can be increased by RA-Xiphoidal Huawei watch ECG, which is an effective and user-friendly way for smartwatch wearers. We recommend the routine use of RA-Xiphoidal lead to improve the accuracy of arrhythmia diagnosis by the smartwatch.

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**PO-639-02**

**REPOLARISATION GRADIENTS DECREASE AFTER BARIATRIC SURGERY IN OBESE PATIENTS**

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**Background:** Obesity is associated with abnormal ventricular repolarisation and a higher risk of ventricular arrhythmias, which are partly reversed with weight reduction. Despite these observations, the proarrhythmic substrate in obesity and its reversibility has not been studied in-depth.

**Objective:** To study and compare the activation and repolarisation patterns in obese individuals before and after bariatric surgery using electrocardiographic imaging (ECGi).

**Methods:** Seven obese patients (mean age 45 ± 9 years, all female) were prospectively recruited to undergo ECGi before and after bariatric surgery (sleeve gastrectomy or gastric bypass). On each occasion, body surface potentials recorded with 256-electrodes and patient-specific heart-torso geometries acquired by magnetic resonance imaging were used to compute over 2000 ventricular epicardial electrograms. Local epicardial activation time (AT) was calculated as the steepest downslope of the activation complex and local repolarisation time (RT) as the steepest upslope of the T wave (Wyatt method). Activation recovery intervals (ARic) were calculated as the difference between local AT and RT, and corrected for heart rate using Bazett’s formula. Global dispersions of AT, RT and ARic were calculated as their respective standard deviations. RT gradients (RTG) across the epicardial surface were calculated as the maximum RT difference within 10mm radius divided by the corresponding Euclidean distance.

**Results:** Mean body mass index decreased from 46.6kg/m² to 35.7kg/m² (p<0.001). RTG decreased following weight reduction: mean 37.4ms vs 26.7ms, p=0.031. There were no significant differences in total ventricular AT, RT or ARic pre- vs post-surgery (AT: 31.0ms vs 31.7ms, p<0.01; RT: 108.2ms vs 102.9ms, p=0.31; ARic: 243.8ms vs 254.1ms, p=0.16). Similarly, there were no differences in overall dispersion of AT (7.6ms vs 7.4ms, p=0.065), RT (30.1ms vs 30.2ms, p=0.94) or ARic (36.4ms vs 35.6ms, p=0.63).

**Conclusion:** Bariatric surgery alters local epicardial repolarisation times resulting in a reduction in repolarisation gradients. These findings may partially explain the reversibility of arrhythmic risk following weight loss in obese individuals, and further highlight the importance of aggressive weight reduction treatment in obesity.

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**PO-639-03**

**3D MAPPING FACILITATED, INTRA-CARDIAC ECHOCARDIOGRAPHY (ICE) GUIDED LEFT ATRIAL APPENDAGE OCCLUSION (LAAO) IS FEASIBLE AND SAFE, PROVIDING SIMILAR EFFICACY WITH LESS PERSONNEL THAN TRANSESOPHAGEAL ECHOCARDIOGRAPHY (TEE) GUIDED PROCEDURES**

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**Background:** Left atrial appendage occlusion (LAAO) provides an alternative for stroke prevention in patients with atrial fibrillation who cannot be safely anticoagulated long-term. WATCHMAN FLX placement was described, and is traditionally performed, with transesophageal echocardiography (TEE) guidance under general anesthesia (GA). The implanting physician, echocardiography team, and anesthesia team must all be present, complicating coordination and scheduling. The use of intracardiac echocardiography (ICE) with 3D mapping guidance in place of TEE for LAAO procedures can eliminate the need for additional personnel.

**Objective:** We report on the feasibility and safety of 3D mapping-facilitated, ICE-guided WATCHMAN FLX device implantation and compare to a similar group undergoing TEE-guided implantation over the same time period.
**Methods:** Since beginning to utilize ICE to guide LAAO in April 2021, our center employed either ICE or TEE for implantation guidance based largely on the availability of pre-procedure CT imaging. For patients undergoing ICE-guided WATCHMAN FLX implantation, we created a 3D reconstruction of the left atrium utilizing the CARTOSOUND module. A single transeptal puncture was performed, through which both the device delivery sheath and the ICE catheter were advanced. Contrast injection through a 6 Fr pigtail catheter was used to confirm appropriate device sizing, and LAAO was confirmed with both contrast injection and ICE imaging in four traditional planes.

**Results:** Of the 30 patients undergoing ICE-guided implantation, 55% were male with an average age of 80. The mean procedure and fluoroscopy time were 72.1 and 9.1 minutes, respectively. The implantation success rate was 97% under ICE guidance alone, with one case requiring TEE confirmation. An additional 33 patients had LAAO with TEE guidance at our center over this period, of which 57% were male with an average age of 81. The mean procedure and fluoroscopy time were 42.5 and 9.5 minutes, respectively. All TEE-guided LAAO implantations were successful.

**Conclusion:** 3D-mapping-facilitated, ICE-guided implantation of the WATCHMAN FLX device is feasible and can optimize resource utilization. Higher procedure times may be offset by improved lab efficiency.

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**PO-639-05**

**ANATOMIC DISTRIBUTION OF ACTIVE SOURCES IDENTIFIED USING ELECTROGRAPHIC FLOW MAPPING**

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**Background:** Electrographic flow (EGF) mapping is a novel method for detecting putative atrial fibrillation (AF) drivers and/or triggers. Targeting mechanistically relevant areas may improve ablation outcomes and minimize empiric ablation.

**Objective:** Characterize the biatrial anatomic distribution of EGF-identified active AF sources.

**Methods:** From 09/27/2019 to 09/27/2021, 85 patients (pts) with persistent (Pers) AF underwent biatrial contact mapping of AF with a 64-pole basket catheter followed by catheter ablation. Raw unipolar electrograms recorded after confirmation of intact pulmonary vein isolation (PVI) were processed using EGF mapping algorithms to identify sources with activity level > 20%. Relevant sources were then localized using corresponding 3D electroanatomic maps. 5 patients excluded as they had no sources with activity > 20%.

**Results:** EGF mapping was performed prospectively in 89 procedures on 80 pts with Pers AF. Mean age was 66 years, BMI 29 kg/m², CHA2DS2-VASc score 2.4 and LA diameter 4.4 cm. There were 259 sources with average source activity level > 20%: 2.9 sources identified/procedure; 47.5% in RA and 52.5% in LA; 60 patients had sources in both atria. In the RA, SVC/RA junction was the most common source location (24.7%). In the LA, 20.1% of sources were seen in the anterior LA, LAA and/or ridge between LAA/LSPV and 20.1% in posterior wall (see figure). Only 4.2% of sources localized to the interatrial septum.

**Conclusion:** EGF mapping can detect and visualize extra-pulmonary sources of AF throughout the RA and LA. Most extra-PV source locations represent anatomically feasible targets for...