patients often have pacemakers or implantable cardioverter defibrillators (ICDs), collectively known as cardiac implantable electronic devices (CIEDs), for treatment of bradycardia or ventricular arrhythmias. In addition to these functions, many modern CIEDs collect objective data about spontaneous cardiac electrical activity—including the presence and burden of PVCs. However, the performance of CIEDs for quantifying PVC burden remains unclear.

**Objective:** To determine the performance of CIEDs for quantifying PVC burden, compared to the reference standard of ambulatory cardiac monitoring.

**Methods:** We identified adult patients at Vanderbilt University Medical Center with CIEDs who underwent concurrent ambulatory cardiac monitoring with Holter or mobile cardiac telemetry monitoring. Patients who received PVC ablations or anti-arrhythmic medication changes during the CIED interrogation period of interest were excluded. We then extracted PVC burden data from CIED interrogation reports that corresponded to the ambulatory monitoring period.

**Results:** We identified 507 instances fitting the study criteria of a CIED with PVC burden data available with concurrent ambulatory cardiac monitoring. The median (IQR) PVC burden detected by ambulatory monitoring was 2.18% (0.10-10.06%). The median (IQR) PVC burden detected by CIED was 1.00% (0.11-4.41%). In general, the PVC burden detected by CIED underestimated that detected by ambulatory monitoring (Figure 1). Spearman’s correlation coefficient was 0.60. Furthermore, when defining a high PVC burden as >15% PVCs, PVC detection by CIED showed a sensitivity of only 0.16 and a specificity of 0.99. Defining high PVC burden as >10% instead resulted in a sensitivity of 0.28 and a specificity of 0.97. Receiver operating characteristic (ROC) curves (Figure 2) had an area under the curve (AUC) of 0.574 (95% CI: 0.535-0.612) using >15% PVCs as a threshold and 0.624 (95% CI: 0.584-0.663) using >10% as a threshold.

**Conclusion:** ICDs and pacemakers demonstrate poor sensitivity but high specificity for detecting PVCs. At this time, PVC burden data from ICDs and pacemakers should not be considered adequate to rule out a clinically relevant high PVC burden.
PO-620-03

ONCOLOGIC PROTON BEAM THERAPY IN PATIENTS WITH CARDIAC IMPLANTABLE ELECTRONIC DEVICES
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Background: Proton beam therapy (PBT) is an attractive treatment for malignancy owing to its high precision on target tissue while sparing adjacent sites. The safety of PBT in patients with cardiac implantable electronic devices (CIEDs) remains unclear.

Objective: To analyze CIED interrogation data in patients who have undergone PBT.

Methods: Consecutive patients with CIEDs who underwent PBT between 2016-2020 at Mayo Clinic in Rochester, MN were prospectively studied. A multidisciplinary team (radiation oncology, cardiology, and anesthesiology) established a practice protocol. CIEDs were interrogated at baseline then daily (if dependent) or weekly following PBT.

Results: A total of 707 CIED interrogations were performed in 59 patients (age 73 ±11.3 years; 23.7% female; BMI 28.7 ±5.6) who underwent PBT for thoracic (47.5%) as well as abdominal, pelvic, head and neck malignancies. CIEDs were right sided in 7 (11.8%), defibrillators were present in 17 (28.9%), and 11 (18.6%) were pacemaker dependant. Battery longevity decreased modestly after PBT (6.69 ±3.49 vs. 6.66 ±3.47 yrs, p=0.01). No difference was seen in sensing amplitude (7.85 ±5.89 vs. 7.98 ±5.92 mV, p=0.68), lead impedance (545 ±208 vs. 548 ±206 Ω, p=0.49), or pacing threshold (0.38 ±0.27 vs. 0.38 ±0.27 V*ms, p=0.29). Power-on reset occurred in 3 patients (5.1%) with thoracic PBT - none resulting in harm. There were no reports of inability to interrogate, unexpected early replacement, loss-of-pacing, or inappropriate shocks.

Conclusion: PBT can be performed with minimal effect on CIED function. Battery longevity may be impacted modestly by PBT and/or frequent interrogation. Caution needs to be taken in patients undergoing thoracic PBT given a small risk of power-on reset.

PO-620-04

INTRA-OPERATIVE FINDINGS WITH MASSIVE DEVICE-RELATED THROMBUS AFTER PERCUTANEOUS LEFT ATRIAL APPENDAGE CLOSURE: MECHANISTIC INSIGHTS
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Background: Left atrial appendage closure (LAAC) devices are an alternative to antithrombotic therapy for stroke prevention in high-risk patients with atrial fibrillation who are not candidates for systemic anticoagulation. However, device related thrombus (DRT) has an observed incidence of ~4% after LAAC. The mechanism of massive thrombus formation remains incompletely understood.

Objective: To present and examine the intraoperative findings of 2 cases of massive DRT occurring late post LAAC device implantation and propose potential mechanisms for these rare complications.

Methods: N/A

Results: Patient 1 was a 75-year-old female with paroxysmal AF and CHA2DS2-VASc Score of 5 with Watchman implanted two years prior to presentation. She had completed 45 days of warfarin and ASA after implantation. She underwent elective open heart surgery for severe mitral valve regurgitation and moderate to severe aortic valve regurgitation. Large DRT (2x2cm) was diagnosed intraoperatively, which was treated with left atrial appendage and device resection. Patient 2 was a 75-year-old female with permanent AF and CHA2DS2-VASc