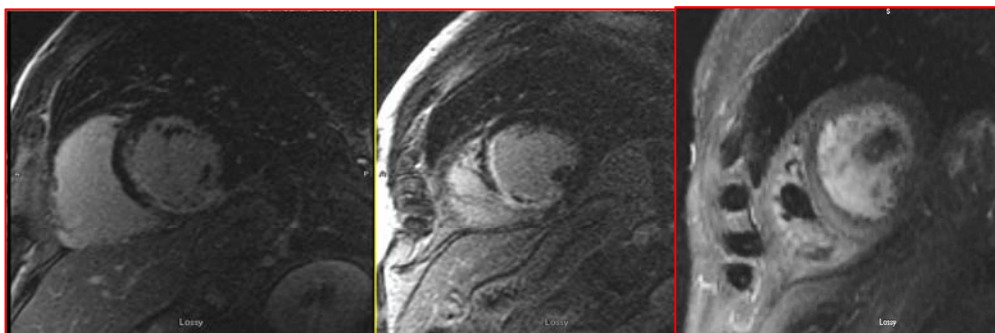


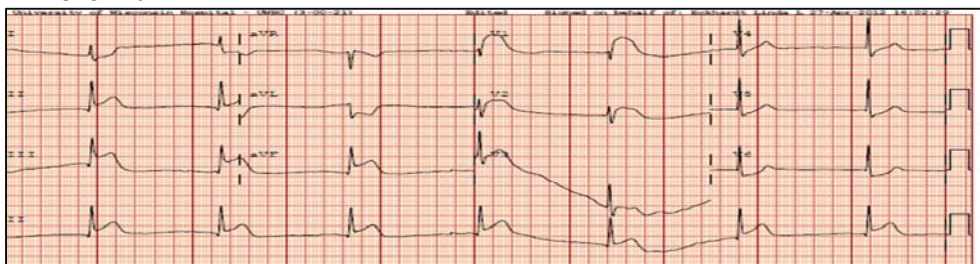
"Electrocardiogram (ECG) made easy for Radiologists ": A correlation between cardiac MRI findings and corresponding ECG findings in various cardiac diseases.

Dheeraj Reddy Gopireddy¹, Venkata Meduri¹, Naila Qazi¹, Christopher Francois¹, and Scott Reeder¹
¹Radiology, University of Wisconsin, Madison, Wisconsin, United States

Electrocardiogram (ECG) is a common tool used to diagnose various cardiac and non-cardiac diseases. Basic understanding of the functionality of this tool is essential for clinicians to diagnose various clinical entities accurately in their daily practice. However, radiologists can use this information to perform an anatomical and electrophysiological correlation using the imaging findings, there by improving their diagnostic accuracy. We made an attempt to demonstrate a correlation between the common typical ECG findings and corresponding anatomical findings on cardiac MR imaging for example: ST elevations in the inferior leads (II, III, avF) in a case of inferior wall myocardial infarction and corresponding delayed enhancement along the inferior wall of the left ventricle on the cardiac viability imaging. Other common imaging entities discussed in this exhibit include acute pericarditis, pericardial effusion, myocarditis, myocardial infarction, infiltrative cardiomyopathies (sarcoidosis, hemochromatosis and amyloidosis) and cardiac masses. We also described classic ECG findings in clinical entities causing sudden cardiac death, which include ARVD and Hypertrophic cardiomyopathy. In the end, we briefly illustrated with examples some non-specific but pertinent ECG findings seen in pulmonary arterial hypertension, Aortic stenosis, mitral stenosis and congenital heart diseases like TOF, Ebstein's anomaly etc. using MRI as primary modality.



Case 1: Patient with acute inferior MI: Cardiac MRI demonstrated delayed trans mural enhancement of the inferior wall (RCA territory) along with edema consistent with acute inferior wall MI.



Case 1: ECG findings demonstrate ST elevations in leads that view the Right ventricle (V1, V2) and inferior LV (II, III and aVF).