ESOPHAGO-PERICARDIAL FISTULA AS A RARE AND LIFE-THREATENING COMPLICATION OF EPICARDIAL VENTRICULAR TACHYCARDIA ABLATION

Justin Edward MD, MS; Shu Cheong Chang MD; Edward Gill MD; Matthew M. Zipse MD; Michael A. Rosenberg MD; Alexis Z. Tumolo MD; James Arthur Mann MD; Syed Rafay Ali Sabzwari MBBS, MD; Lukasz Cerbin MD; Christopher Barrett; Amneet Sandhu MD; Paul D. Varosy MD, FHR; Jason West; Lohit Garg MBBS, MD; Wendy S. Tzou MD, FHR and Ryan G. Aleong MD, FHR

Background: Esophago-pericardial fistula is a rare but potentially devastating complication of epicardial ventricular tachycardia ablation. This case highlights the importance of recognition of this potential risk, as well as timely treatment.

Objective: To highlight the potential rare complication of fistula formation that can result from epicardial ventricular tachycardia ablation.

Methods: N/A

Results: A 59-year-old man presented with 10 days of pleuritic left chest discomfort two weeks following ablation for ventricular tachycardia during which epicardial ablation at the inferior basal left ventricle was performed without acute procedural complication. His symptoms worsened despite treatment with colchicine, and he subsequently developed elevated white blood cell count (14.1 x 10^9/L) and anuric renal failure (serum creatinine 3.4 mg/dL). Echocardiogram revealed a moderate, circumferential pericardial effusion with pneumopericardium (Figure A). Chest CT showed pneumopericardium and evidence of esophageal fistula (Figure B). On pericardiocentesis, purulent fluid was drained. The patient underwent surgical repair through a left thoracotomy approach and was found to have a quarter-sized fistula connecting the esophagus and the pericardium that was repaired using an intercostal muscle flap. The patient recovered postoperatively and passed a swallow evaluation without dysphagia over 12 months of follow up.

Conclusion: This case demonstrated a rare complication of epicardial ventricular tachycardia ablation, which resulted in the formation of an esophago-pericardial fistula. The epicardial aspect of the basal-posterior left ventricle is in close proximity to the esophagus, and this risk must be considered when ablation is performed in this region. Monitoring of esophageal temperature in such instances may help to reduce the risk of this rare complication.

WIDE AND NARROW COMPLEX TACHYCARDIA AFTER TRANSCATHETER AORTIC VALVE REPLACEMENT

Luke Chong MD; Matthew Kalscheur MD and Daniel S. Modaff MD

Background: High grade AV block is a known complication after transcatheter aortic valve replacement (TAVR). The incidence of tachyarrhythmias following TAVR is not as well documented.

Objective: We performed an electrophysiology study (EPS) in a patient with symptomatic tachycardia after TAVR.

Methods: N/A

Results: An 88-year-old man who recently underwent TAVR presented with two days of palpitations. ECG revealed a wide-complex tachycardia which spontaneously converted. Later, tachycardia recurred with ECG showing a narrow-complex tachycardia that terminated with vagal maneuvers. The patient continued to have frequent episodes of tachycardia during admission. History was notable for occasional palpitations to a far lesser extent over the last eight years. On EPS, a narrow complex tachycardia was readily induced by atrial pacing with extra-stimuli. Spontaneous oscillation between narrow and wide complex with left bundle morphology and 1:1 AV relationship were seen, with no change in cycle length. Features indicating this tachycardia was consistent with AV nodal re-entry tachycardia (AVNRT) included: septal VA time < 70 ms with a concentric pattern of atrial activation; ventricular overdrive pacing advancing the atrial electrogram after the transition zone; VAHV response after cessation of ventricular overdrive pacing. Ablation of the rightward inferior extension of the slow pathway was performed. Following ablation, no tachycardia was inducible. The patient was discharged with an event monitor. He had no recurrent symptoms, and no arrhythmias were detected on his monitor.

Conclusion: We postulate that the TAVR valve impingement on AV nodal extensions provoked changes in slow and fast pathway refractoriness resulting in incessant AVNRT.

SILENT PROGRESSION OF CALCIFIC AORTIC STENOSIS DETECTED BY ARTIFICIAL INTELLIGENCE ELECTROCARDIOGRAM: A CASE REPORT

David Harmon MD; Awais Malik MD; Michal Shelly BSc; Zachi Itzhak Attia MSEE, PhD; Jae K. Oh MD; Saki Ito MD; Paul A. Friedman MD, FHR and Rick A. Nishimura MD

Background: We have previously developed an algorithm to detect moderate to severe aortic stenosis by application of