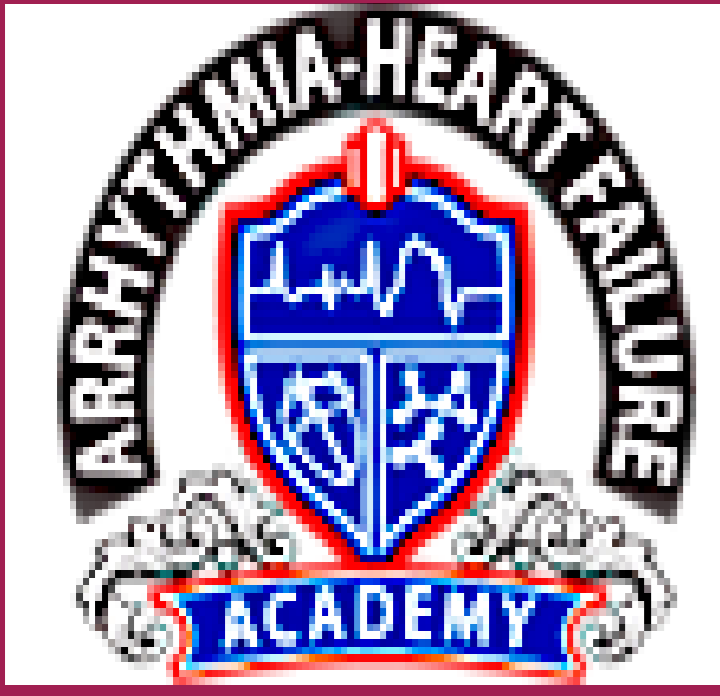


RFA FOR SYMPTOMATIC ACCELERATED IDIOVENTRICULAR RHYTHM

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INTRODUCTION

Idioventricular rhythm is an ectopic ventricular rhythm with ≥ 3 consecutive premature beats at the rate of 30 to 40/min. When the rate exceeds to between 60 and 100/min, it is considered as accelerated idioventricular rhythm (AIVR). It is usually hemodynamically stable and no treatment is needed. Rarely, AIVR can be symptomatic, drug refractory in a normal heart.

CASE PRESENTATION

A 50-year-old female with no known comorbidities presented with 5 months history of recurrent palpitation associated with giddiness despite metoprolol and amiodarone. CAG, Cardiac MRI and echocardiogram were normal.

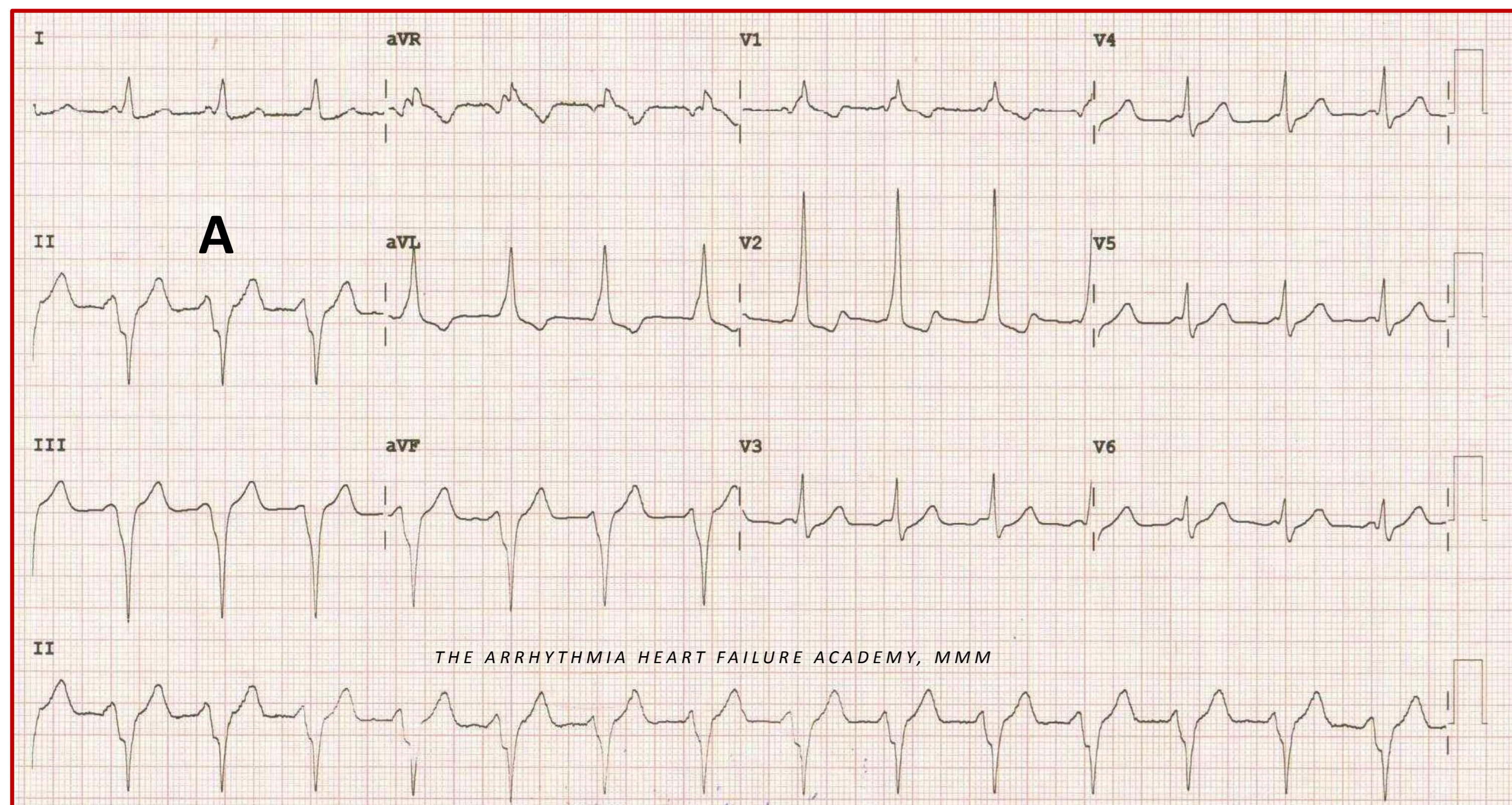


Figure A: 12-lead ECG suggested AIVR at rate 83 bpm with isorhythmic AV dissociation. R in V1 and the leftward axis suggested arrhythmia originating from posterior fascicular region.

ANALYSIS OF SURFACE QRS: The slur in the QRS complex was suggestive of PVC originating from epicardial origin accessible through middle cardiac vein or posterior cardiac vein or by direct epicardial origin. However endocardial origin was also suspected.

MAPPING: Her intracardiac electrogram showed isorhythmic AV dissociation with negative HV interval of 25 ms. Middle cardiac vein and posterior cardiac vein was mapped for earliest ventricular activation. However no early ablation signals observed. By retrograde transaortic approach, the region surrounding distal left posterior fascicle was mapped.

At the base of the posteromedial papillary muscle the ventricular activation was 25 ms earlier than onset of QRS. Satisfactory pacemap was observed at the site

ABLATION: A single RF lesions using Flexibility™ BI-D Irrigated Ablation Catheter D-F, St. Jude Medical (40W, 50°C, 60-90 secs) delivered at the region resulted in termination of tachycardia within 5 sec.

Further there was no recurrence of PVCs even on Isoprenaline. At 6 months follow-up, there were no PVCs and the patient remained in sinus rhythm.

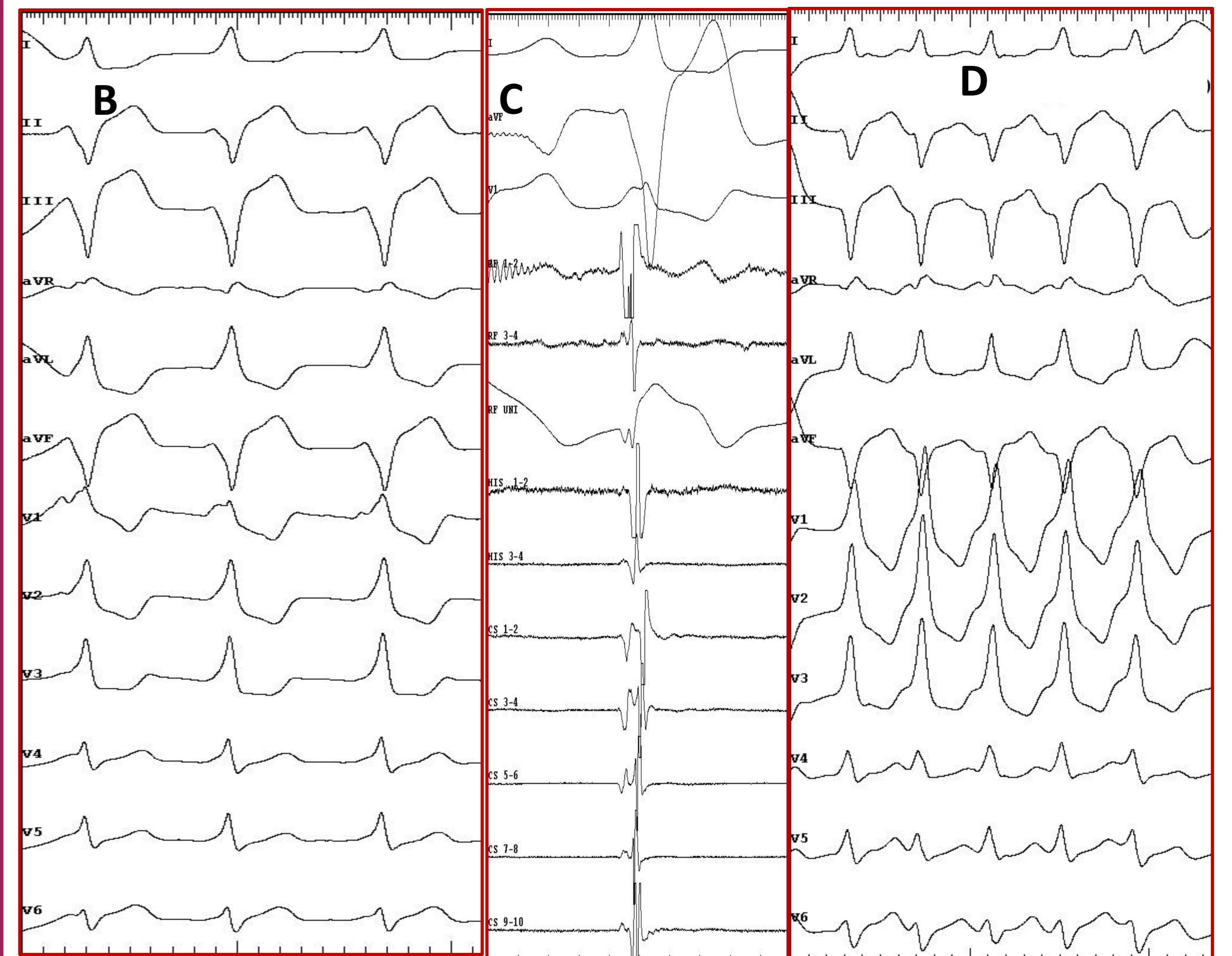


Figure B: Clinical PVC

Figure C: RF catheter signals 20 ms earlier than the surface QRS in the region of posteromedial papillary muscle

Figure D: Pace map at the region of left posterior fascicular region

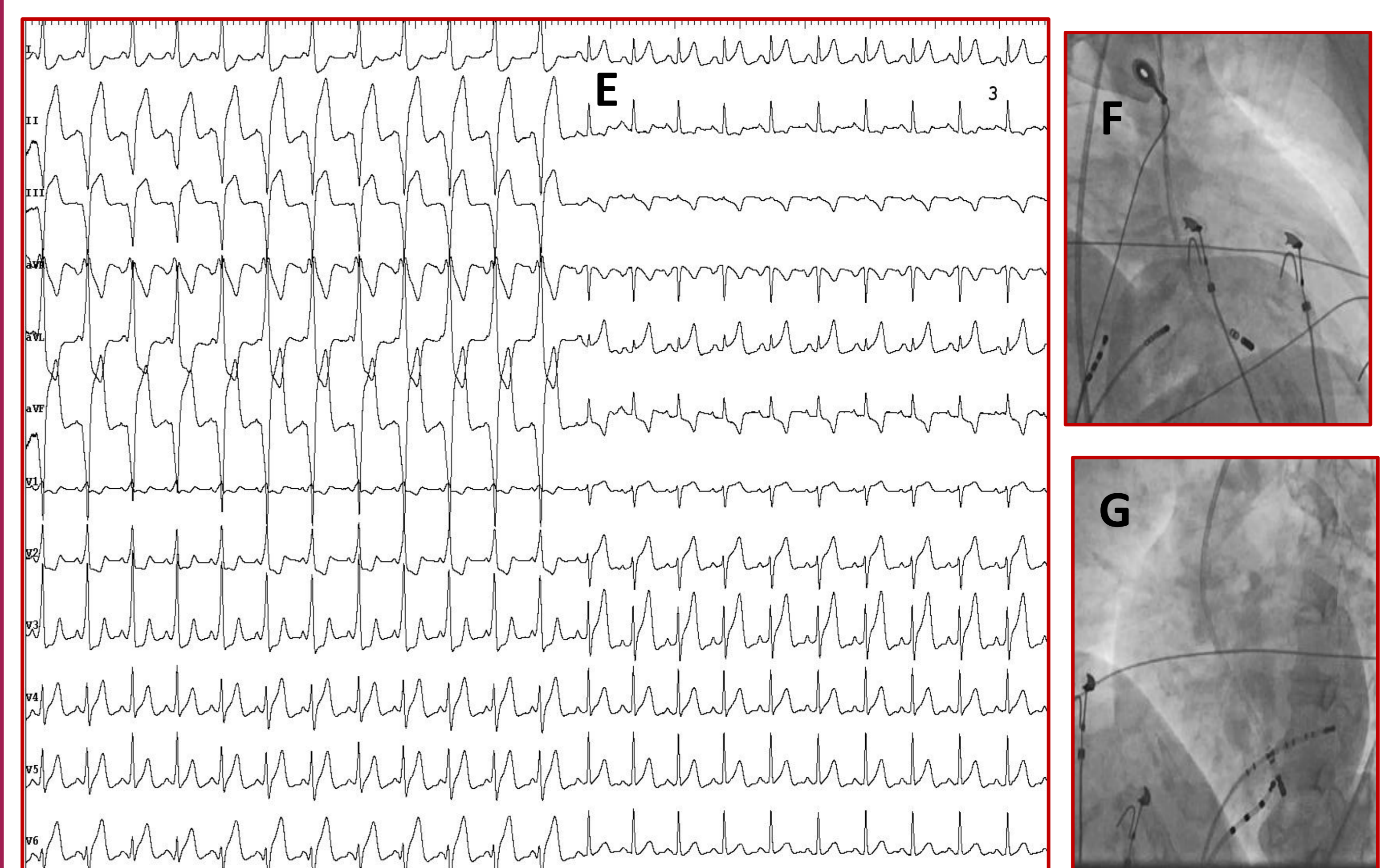


Figure E: Successful termination of AIVR during RF ablation

Figure F and G: Fluoroscopic images of successful ablation site in RAO and LAO view respectively

CONCLUSION

AIVR arising from posterior fascicular/ posteromedial papillary muscle region is an unusual form of ventricular arrhythmia. Higher arrhythmia burden in idioventricular rhythm can worsen the clinical course. Patients who experience presyncope or syncope, who had an arrhythmia burden of $>20\%$ on Holter monitoring shall undergo ablation.