DUAL TACHYCARDIA- AN EP CHALLENGE

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Introduction: Atrioventricular nodal reentrant tachycardia (AVNRT) is the most common regular supraventricular tachycardia (SVT) in clinical practice. Coexistence of more than one SVT in an individual patient is a well-known but infrequent phenomenon. The most frequently observed dual tachycardia is the combination of AVNRT with atrial fibrillation followed by atrial tachycardia (AT) and atrio-ventricular reciprocating tachycardia. We report an uncommon case of dual tachycardia- AVNRT with focal AT and the challenges faced during successful ablation of the tachycardia.

Methods: A 63-year-old female with no comorbidities and a structurally normal heart presented with recurrent palpitations. The baseline 12-lead ECG was normal and during palpitation it was short RP tachycardia. Patient was taken up for radio frequency (RF) ablation. Clinical tachycardia was induced with critical AH prolongation on atrial extra stimulus. While doing pacing maneuvers to establish the mechanism of tachycardia, it was converted to another narrow QRS tachycardia with long RP with P wave morphology similar to sinus rhythm. Transitions between 1st and 2nd tachycardia posed difficulties while assessing the arrhythmia mechanism as well as while testing for inducibility post ablation. First tachycardia was induced with critical AH prolongation and there were echo beats suggestive of AVNRT. Post ventricular overdrive pacing response for 2nd tachycardia was VAAV with earliest A at high crista region and was defined to be focal AT

Result: While performing slow pathway modification, 2nd tachycardia was induced and so ablation was interrupted. After terminating the tachycardia few more RF energy delivered and successful modification of slow pathway was demonstrated. Activation mapping during atrial tachycardia showed earliest activation in the high crista region. Phrenic nerve capture was tested, RF energy delivered at the earliest site. Initial acceleration followed by termination of tachycardia occurred. Tachycardia could not be induced even with isoprenaline facilitation.

Conclusion: It has to be carefully determined whether concomitant atrial tachyarrhythmias are of clinical significance for further patient management or a nonspecific finding related to pacing maneuvers
or pharmacological provocation. Some coexisting arrhythmias may no longer be inducible after successful slow-pathway ablation. Transition between the tachycardias poses challenges while establishing mechanism of tachycardia with pacing maneuvers as well as while ablating.