Lesion Maturation in AVRT ablation by RFA---How Long Do we Wait?

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Introduction: Radiofrequency (RF) catheter ablation is an established modality of therapy in symptomatic AVRT (Atrioventricular re-entrant tachycardia). The accessory pathways are unevenly located in both tricuspid and mitral annuli. Among the existing locations left-sided fibres are most common. These can be accessed by antegrade transeptal, retrograde trans-aortic or very rarely via coronary sinus. All of these approaches have specific risks. We are discussing a case where after detailed consideration we avoided repeat transeptal puncture and also noticed RF lesion maturation after 12 hours. This emphasises need of proper post-ablation protocols to achieve good result.

Methods: 27 year old, male, patient suffered an episode of syncope with palpitation while working in office. He demonstrated WPW-syndrome with left sided pathway by baseline ECG (Electrocardiogram). The patient gave consent for RF ablation. He was taken for electrophysiologic study after stopping antiarrythmic drugs for 5 half lives under conscious sedation. Ketamin, Midazolam and propofol were used under anaesthetist supervision as needed. A 6-F decapolar catheter was positioned inside the coronary sinus. Other diagnostic catheters (6-F quadripolar) were placed in the right ventricular apex and bundle of His region and 5-F small sheath in right femoral artery. The baseline measurements of conduction and refractoriness were performed in sinus rhythm. The PR, QRS, QT, AH, and HV intervals, basal cycle length, and atrioventricular and ventriculoatrial Wenckebach cycle lengths were measured. Tachycardia got initiated while manipulating catheters. It was a narrow QRS tachycardia (NQRST) suggestive of orthodromic tachycardia. It started without jump and terminated with “a”. The pathway was mapped in sinus rhythm looking for early “v”.

Result: The pathway disappeared within 3 beats of energy (60˚ C, 40Watts). The lesion was further consolidated. We waited for 30 minutes and then performed “v” pacing and induction protocols post isoprenaline. While trying to get the catheter in left ventricle we lost access. When we tried to reassess with adenosine the antegrade pathway activity reappeared. We were not able to induce any tachycardia even after aggressive attempts. At this stage we were confident that this patient will not have tachycardia and repeat transeptal puncture had additive risk. We terminated the procedure and accepted reduced antegrade pathway conduction. The next morning ECG revealed total nodal conduction and 2 months phone follow-up reveals asymptomatic status.

Conclusion: The above case stresses role of post ablation aggressive induction protocols to rule out future recurrences. This is our first case where we noted lesion maturation after 12 hours of index procedure reconfirming the practice of extensive mapping and meticulous first energy delivery.