Outcome of Failed index and Redo procedures in Catheter Ablation for Arrhythmias - A single centre experience

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Introduction: Catheter ablation for arrhythmias can be difficult, challenging and compelling to demand repeat procedure (Redo) in some patients. This observational study was done to evaluate the reasons of failed index procedure and final outcome of redo procedure at a tertiary care centre.

Methods: Retrospective data of patients who underwent catheter ablation of arrhythmias at our centre from Aug 2012 to Nov 2016 was reviewed and a detailed analysis was done for the patients who failed initial index procedure and underwent redo procedures to study the procedural, technical or patients specific reasons for difficult ablation and its outcome.

Result: Over 4 years and 4 months, a total 265 patients underwent catheter ablations for arrhythmia at our centre, of whom 63 procedures (45 patients) were categorised as redo procedure after initial failed ablation or recurrences after standard EP procedure. This cohort (age 24±19 years, 56% male) had NQRST in 20 (44%) and WQRST in 25 (56%) of which 7 (16%) has initial ablation in other centres. The spectrum of arrhythmia and their success is summarised in Image -1 and the reason of success or failure in redo procedure is shown in Image -2. One patient with left fascicular VT masqueraded as AVNRT with aberrancy, was successfully ablated after review of previous ablation tracings. Of the 17 (40%) failed cases, 9 (20%) were further planned for repeat with alternate approach or under 3D navigation but failed to undergo repeat procedure. In 3 patients (7%) the ablation was abandoned being high risk being close to LM, AV node and inside GCV. The true failure was in 5 (11%) patients only. The overall success was achieved in 251/256 (98%) whereas for redo procedures it was 31/36 (86%) with average procedural attempts of 1.4 times and fluoroscopy time of 22.88±4.55 mins against overall 18.8±7.4 mins.

Conclusion: Redo procedure after failed index procedure have improved outcome with change in strategy. Trans-septal access for left sided pathway, and 3 Dimensional Navigation in localisation of focus resulted in maximum success. Postero-septal location of ablation was associated with maximum failure of ablation. Redo procedure are safe and can be achieved with comparable overall success rate with the use of additional hardware, and extra fluoroscopy time.