

## Voltage bridge mapping in atrioventricular nodal reentry tachycardia ablation in adult population: results from a multicenter registry

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**Background:** The presence of Low Voltage Bridge (LVB) in Atrioventricular Nodal Reentry Tachycardia (AVNRT) ablation has been described in children populations. Slow pathway ablations visualizing and targeting the LVB has been described to be safe and effective. However, the incidence of LVB in AVNRT ablation has not been widely explored in adult population.

**Purpose:** We aim to investigate the presence of LVB in adult patients (pts) undergoing AVNRT ablation, and the relationship between the LVB and the successful ablation site. We have also investigated the correlations between the Koch's triangle (KT) anatomy and biophysical pts data.

**Methods:** The observational registry prospectively collected data of 165 pts. undergoing AVNRT ablation guided by 3D electroanatomical mapping system (EnSite - Abbott, St Paul, MN) in 6 EP centers. Gender: 90F - 75M (55% - 45%) - Age:  $57 \pm 17$  ys (min 15 - max 87) - Weight:  $73 \pm 15$  kgs (min 42 - max 150) Prior of ablation a voltage map of KT was created using diagnostic and ablation catheters.

We define as Type I LVB a clear, long area of low voltage within the KT between the CS ostium and the AV node with the base on the edge of the tricuspid annulus and Type II LVB a narrow low voltage channel between normal-voltage regions with the base on the edge of the tricuspid annulus.

The relationship between LVB and successful site was evaluated at the end of the procedure. KT anatomical data were correlated to gender, age and weight.

**Results:** The LVB was identified in 134 pts (81%) with a prevalence of type I (91 - 68%) over type II (33 - 25%). In 10 pts (7%) the LVB did not match type I nor type II. When an LVB was identified, the correspondence between the LVB and the successful ablation site was verified in 117 pts (87%). In addition, a shorter RF time was applied when an LVB was found (396s vs 298s;  $p = 0.03$ ). Strong correlations between KT anatomy and biophysical pts data were not identified. The distance between His electrograms and the successful ablation site weakly correlated ( $\rho = -0.24$ ,  $p < 0.01$ ) with pts age suggesting a shortening in the distance with age progression.

**Conclusion:** The visualization of the Low Voltage Bridge may be a helpful tool to guide AVNRT ablation in a large cohort of pts; furthermore it is associated with reduced RF applications time. The KT characteristics are difficult to be predicted a priori according to patient gender, age or weight.