

A LOOK INTO LV SUMMIT PREMATURE VENTRICULAR CONTRACTIONS IN PEDIATRICS: A SINGLE CENTER NON-RANDOMIZED RETROSPECTIVE ANALYSIS

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OBJECTIVE

We analyzed pediatric patients with symptomatic ventricular tachycardia (VT) originating from left ventricular outflow tract (LVOT). We predicted origin of VT and our approach to mapping and ablation using proposed electrophysiologic criteria from existing literature in adult electrophysiology.

METHODS

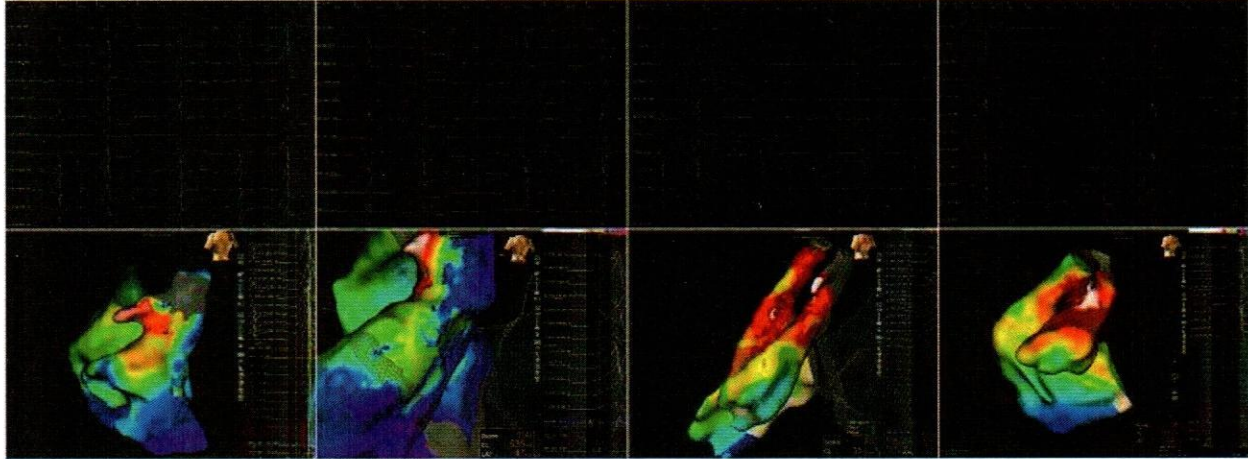
Over one-year period we studied 4 pediatric patients (3 females, 1 male, ages 11 to 16) with documented symptomatic VT. Left Branch Block Morphology (LBBB), R wave transition in lead 3 and 4 were exhibited in 2 patients. No R wave transition was seen in 2 patients. The ablation sites were determined by mapping in the right and left ventricular outflow tract. We utilized the Advisor HD grid for mapping in the RVOT. The Flexability SE catheter was utilized to map the LVOT, coronary cusps and origin of coronary arteries.

RESULTS

Radiofrequency ablation (RF) of the VT was successful in all 4 patients. Ablation catheter was positioned at the aortomitral continuity (AMC), just under the aortic valve. VT/PVC were completely eliminated in < 10 seconds (2-10 seconds). During the 12 months follow up there was no recurrent VT and no ectopy. The electrographic characteristics were consistent with aortomitral continuity in 2 cases and with the basal left ventricular summit in 2 cases.

CONCLUSION

The electrocardiographic characteristics of the AMC and intramural left ventricular summit (LVS) can be used to predict ablation sites. The mapping and ablation of LVS area can be limited in young patients. Despite difference in 12 lead EKGs, we successfully eradicated VT from AMC area in our patients. Further studies and correlation of 12 lead EKG and ablation sites in LVOT in pediatric population are suggested.



REFERENCES

Left ventricular summit arrhythmias with an abrupt V3 transition: Anatomy of the aortic interleaflet triangle vantage point (Hongtao Liao, MD,*†1 Wei Wei, MD, PhD,*1 Kevin S. Tanager, MD,† Frank Miele, AS,‡ Gaurav A. Upadhyay, MD, FHRS,‡ Andrew D. Beaser, MD,‡ Zaid Aziz, MD,‡ Hemal M. Nayak, MD, FHRS,‡ Cevher Ozcan, MD,‡ Takuro Nishimura, MD, PhD,‡ Ruhong Jiang, MD,‡ Dalise Shatz, BA,‡ Aliya N. Husain, MD,† Roderick Tung, MD, FHRS) HRS 2020

Eccentric Activation Patterns in Left Ventricular Outflow Tract during Idiopathic Ventricular Arrhythmias Originating from the Left Ventricular Summit (Takumi Yamada, MD, Vineet Kumar, MD, Naoki Yoshida, MD, Harish Doppalapudi, MD)

Road to the Summit May follow an Eccentric Path (Kara Motonaga, MD, Henry H Hsia, MD)

Epicardial ablation of the left ventricular arrhythmias originating from the left ventricular summit area without fluoroscopy (Guram Imnadze, Thomas Zerm, Mustapha El Hamriti, Leonard Beragu, Martin Braun, Moneed Khalaph, Christian Sohns, Philipp Sommer) Cardiology Journal 2022