

3-D mapping localization of Junctional Ectopic Tachycardia.

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Intro: Junctional ectopic tachycardia (JET) is an arrhythmia that is characterized by a rapid heart rate due to increased automaticity in the area of the triangle of Koch. Due to the proximity to the AV node and the general unresponsiveness to anti-arrhythmia medications in many of these patients, it has historically been difficult to treat. With the use of transcatheter cryothermal ablation technology using 3-D mapping systems we have been better able to localize and treat this arrhythmia. In this study, we have looked at a subgroup of patients with structurally normal hearts that have JET to determine if the location of their ablation has an effect on the outcome of the procedure as well as the cryothermal ablation time and number of ablation lesions that were needed.

Methods: A retrospective review of patients undergoing ablation for JET at the University of Iowa was performed. Patient demographic, 3-D mapping and procedural information was collected.

Results: In this group of 12 patients, 10 underwent cryoablation ablations lesions placed in the middle or lower third of the triangle of Koch, whereas 2 needed them in the upper third, near the AV node. All of the 10 patients that had lesions in the middle or lower third had a successful ablation procedure and on follow-up were found to be in normal sinus rhythm, whereas the 2 that had ablations in the upper third were not successfully ablated and one needed an additional ablation one month later. In addition, the 2 patients with ablations in the upper third of the triangle of Koch had many more ablation lesions and had much longer procedure times. There were no complications.

Conclusion: The majority of patients with JET have their arrhythmia source in the lower 2/3 of the TOK. Those with the focus near the His bundle are at greater risk for longer procedural time and more extensive lesion placement.