Letter by Yamada and Kay Regarding Article, “Ventricular Arrhythmias Arising From the Left Ventricular Outflow Tract Below the Aortic Sinus Cusps: Mapping and Catheter Ablation via Transseptal Approach and Electrocardiographic Characteristics”

We read with great interest the most recent publication by Dr Ouyang et al1 on the transseptal approach in catheter ablation of ventricular arrhythmias (VAs) arising from the left ventricular outflow tract (LVOT) below the aortic sinus cusps (ASCs). We congratulate the authors for their interesting findings obtained during mapping and catheter ablation of VAs arising from the LVOT below the ASCs via an antegrade transseptal approach, although this approach was reported previously.2 We agree with the authors that mapping and catheter ablation in this region is challenging via a retrograde transaortic approach for several reasons. First, the relatively rigid aortic valve leaflets can limit catheter manipulation. Second, vigorous movements of the aortic valves can render a contact of the mapping catheter on the tissue in this region unstable. However, we would suggest that a catheter inversion technique via the retrograde transaortic approach might overcome these challenges and thus should be attempted before the transseptal approach. In the catheter inversion technique, the tip of the looped mapping catheter can reach underneath the ASCs by pulling up the catheter. When the loop is released appropriately, a good contact of the tip of the mapping catheter on the tissue in this region can be obtained without any disturbance from the movements of the aortic valves. When the looped catheter is rotated, the tip of the mapping catheter can be positioned underneath any ASC. The looped mapping catheter with the inversion technique in the LVOT looks the same as the distal half part of the reverse S curve with the antegrade transseptal approach.

We agree with the authors that some VAs arising from this region may require the antegrade transseptal approach for their elimination. However, the transseptal approach cannot map above the ASCs. The available electrocardiographic algorithms have not been able to accurately discriminate VAs arising from below from those above the ASCs. Therefore, the retrograde transaortic approach should probably be attempted first during mapping and catheter ablation of LVOT VAs. In addition, the transseptal procedure with a Brockenbrough needle is not always safe, and anticoagulation might have to be reversed when the transaortic approach is switched to the transseptal approach. Therefore, we would recommend that a feasible and useful technique of catheter inversion with the retrograde transaortic approach should be attempted before the antegrade transseptal approach when mapping, and catheter ablation of VAs arising from the LVOT below the ASCs are challenging and suggest that the antegrade transseptal approach might be required in a limited number of VAs arising from this region.

Disclosures

None.

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References

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Circ Arrhythm Electrophysiol. 2014;7:993
doi: 10.1161/CIRCEP.114.002205

Circulation: Arrhythmia and Electrophysiology is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
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Print ISSN: 1941-3149. Online ISSN: 1941-3084

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