Introduction: The origin of pulmonary sinus cusp (PSC)-derived ventricular arrhythmia (VA) is a highly specialized anatomical structure; therefore, insertion of the radiofrequency ablation catheter tip to the target site to ensure safe ablation is a major challenge for clinicians.

Methods: A retrospective analysis and summary of the clinical data of 15 patients undergoing catheter ablation for PSC-derived VA in Cardiac Intervention Therapy Center, The Second Xiangya Hospital of Central South University between January 2013 and July 2015 was conducted.

Result: For the 15 patients, the PSC-derived VA originated from the lower regions of the pulmonary sinuses, leading from the right, left, and anterior sinuses of the PSC in 4, 6, and 5 patients, respectively. Nine patients with PSC-derived VAs originating from the right and anterior sinuses underwent successful reversed U-curve catheter ablation, while the other six cases with arrhythmias originating from the left sinus underwent successful ablation with the conventional method (nonreversed U-curve catheter ablation). All the patients were followed-up for 6–31 months, and no cases of recurrence or complications occurred.

Conclusion: Reversed U-curve catheter ablation is suitable for VAs originating from the right and anterior PSCs, while conventional ablation can also be used for those originating from the left PSCs.