Rare Accessory pathway between Giant Left Atrial Appendage and Left Ventricle

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Introduction: An accessory pathway (AP) between left atrial appendage (LAA) and left ventricle (LV) is rare and only 14 cases have been reported. It features a potential of ventricular fibrillation due to short effective refractory period (ERP) of the AP, coexistence of multiple APs or an AP between right atrial appendage and right ventricle, and difficulty of endocardial ablation. We report a 6-year-old boy with multiple APs including LAA-LV AP, a giant LAA, and noncompaction of LV (NCLV). Little has been reported on LAA-LV AP associated with a giant LAA.

Methods:

Result: Case summary A 6-year-old boy presented with WPW syndrome in a school cardiac screening. The Holter ECG exhibited a PSVT at 279 bpm. The echocardiogram revealed a NCLV with ejection fraction of 69% and none of mitral regurgitation. The catheter ablation was performed under general anaesthesia in 6 years old. EPS exhibited several kinds of delta waves, the effective refractory shortest period of the APs was 200 ms. The multiple APs were ablated at left anterior, left lateral, left posterior, and right postero-lateral via transseptal, retrograde, and inferior vena cava. However all the delta waves were not eliminated. A second session was performed at the age of 8 years old. A computed tomography exhibited a giant LAA of 12.9 ml/m2 (normal 6.32 ±2.67 1). The ECG exhibited ventricular pre-excitation in all beats and a different QRS morphology during PACs. The morphology of delta waves during sinus rhythm suggested right sided AP, whereas those during PAC suggested a left anterior AP. In the session, a 2 Fr steerable catheter was positioned to the distal of CS (anterior interventricular vein) in addition to the catheters in the first session. The earliest ventricular activation site during sinus rhythm was at the distal electrode of the CS catheter, which was near the LAA according to the angiography of the left atria. Though we could not ablate the APs along the mitral annulus during the 1st session, we successfully ablated the AP using a 4-mm non-irrigated catheter at the base of the LAA. ST changes did not occur during delivering RF energy. The distance between the successful ablation site and mitral annulus was 9 mm. Then we successfully ablated 3 other APs near the CS ostium and on the right lateral and postero-lateral sides of the tricus.

Conclusion: We report a 6-year-old boy with multiple APs including LAA-LV AP, a giant LAA, and NCLV. A LAA-LV AP should be suspected in tough case in left sided AP and a CT help us to diagnose it.