Successful implantation of pacing lead through isolated persistent left superior vena cava using fixed-curve lead delivery catheter for His bundle pacing: A Case Report

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Introduction: Persistent left superior vena cava (PLSVC) is a common congenital malformation, but PLSVC with absence of the right superior vena cava, known as isolated PLSVC, is extremely rare. We experienced the pacemaker implantation in patient with isolated PLSVC.

Methods: N/A

Result: A 71-year-old man was admitted to our hospital with complete atrioventricular block. Before pacemaker implantation, his venography from right and left arm showed isolated PLSVC. After puncture of the left subclavian vein, a fixed-curve lead delivery catheter for His bundle pacing (Model C315His, Medtronic, Minneapolis, MN, Figure A) was introduced into right atrium through PLSVC. Since the tip of the catheter turned toward the tricuspid orifice relatively easily, the ventricular pacing lead (Model 3830, Medtronic) was able to advance to the septal side of the middle right ventricle (Figure B). The atrial pacing lead (Model 5054, Medtronic) was placed at the right atrial lateral wall using manually shaped stylet. After implantation (Figure C), lead parameters were acceptable, and he remained free from bradycardia. Pacing lead implantation through PLSVC using conventional has been difficult, because it is necessary to use specialized shaped stylet. On the contrary, the method using the fixed-curve lead delivery catheter do not need special techniques and can be effective.

Conclusion: The method we described can be a new therapeutic approach with high feasibility in patients with such isolated PLSVC.