Successful Cryoablation Through Inferior Vena Cava Filter

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Introduction: Pulmonary vein (PV) isolation with the second generation cryoballoon is a common and efficient procedure. However, there was limited literature regarding using cryoballoon in a patient with an inferior vena cava (IVC) filter.

Methods: N/A

Result: A 48-year-old man with symptomatic paroxysmal atrial fibrillation (AF) was referred to our institution for cryoablation. He underwent an IVC filter implantation (CelectTM Vena Cava Filter, Cook Medical) 8 years ago because of massive pulmonary embolism caused by deep venous thrombosis. After bilateral femoral venous access was established, an 8-French transseptal sheath (SwartzTM FasthCath SL1, St. Jude Medical) was passed through the IVC filter without any resistance. Transseptal puncture was performed and we changed the transseptal sheath to a steerable 18-French sheath (FlexCath Advance™ Steerable Sheath, Medtronic), which was carefully passed through the IVC filter under the guidance of fluoroscopy (Figure 1A). PV isolation was performed with a cryoballoon catheter (Arctic Front Advance Cardiac Cryoablation Catheter system, Medtronic) and all 4 PVs were electrically isolated with no difficulty in manipulating the catheter (Figure 1B). After the procedure was completed, the catheter was withdrawn smoothly and there was no deformity nor displacement of the IVC filter.

Conclusion: There are sporadic cases reported using femoral venous access for diagnostic or therapeutic procedures in patients with IVC filters. This is the first case to our knowledge that successfully perform cryoaablation via transfemoral route. We provided this case to strengthen the safety and feasibility of manipulating cryoballoon through an IVC filter in selected cases.