

Invasive management of iatrogenic pulmonary vein stenosis is effective in patients after atrial fibrillation ablation

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Atrial fibrillation (AF) ablation has become the standard treatment of paroxysmal AF. Pulmonary vein (PV) stenosis (PVS) is a rare complication of the procedure, which can be treated with percutaneous angioplasty (PTA) and stent implantation. Safety and efficacy of PV PTA and/or stenting was investigated in the present study.

The presence of significant PVS was verified with CT angiography in symptomatic patients with effort dyspnoe, frequent coughing. In all PVS patients PV PTA was performed. After transseptal puncture selective PV angiography, pressure measurements and then balloon dilatation and/or stent implantation was performed.

Results: Out of 3875 AF ablations since 2005 altogether 12 patients were symptomatic (0.31%). Balloon angioplasty alone as first procedure was performed in 10 out of the 25 stenotized veins, in 5 patient drug eluting balloon was used, two veins were stented with BMS afterward. Furthermore, in 11 veins BMS stents Biotronik Astron 10x40x135 and in 3 patients self expanding DES stents Cook Medical Zilver 8x40x135 mm were used (4 veins). Total PV occlusion was found in 3 cases, which could also be successfully treated with PTA. In one patient rupture of the PV was noticed after the balloon dilatation of the PV, surgical patch plasty of the PV was needed. During PTA of a totally occluded PV distal rupture occurred after balloon dilatation causing massive haemoptoe, but it could be effectively treated with balloon reinflation. Restenosis could be observed after the first intervention in 4 patients, all of them were treated with reintervention, 3 out of 4 required a third intervention. 7 veins were affected, in 4 pts balloon dilatation, in 2 pts DES implantation and in 1 case BMS implantation was performed. After re-intervention no significant restenosis could be observed. All patients became asymptomatic, and all of them were put on combined antithrombotic and anticoagulant therapy for one month, after it only clopidogrel and warfarin therapy was continued for one year, when clopidogrel was stopped, and warfarin only was continued.

Conclusion: PV PTA seems to be a feasible method in the treatment of iatrogenic PVS, however the risk of specific complications remained

notable. In the presence of verified PVS self expanding DES implantation seems to be the most effective method of treatment, however multicenter studies would be preferable for the better therapy selection.