Percutaneous Transcatheter Management of Giant Coronary Aneurysms

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A 61-year-old man with a history of coronary artery aneurysms was referred to our institution for evaluation of dyspnea on exertion. Coronary artery bypass of the aneurysms had been performed 2 years earlier. Although it was reported that the aneurysms had been ligated, coronary angiography revealed large residual aneurysms of the right and left circumflex arteries (top left, Figures 1 and 2), with patent bypass grafts. Computed tomography (CT) of the chest demonstrated that the aneurysms were >7 cm in diameter and lined with considerable thrombus (top right, Figures 1 and 2). Furthermore, impingement on the pulmonary artery by the enormous right coronary artery aneurysm was noted. Elevated pulmonary artery pressures of 45/25 mm Hg were documented during right heart catheterization.

The patient was considered to be at high risk for surgical reintervention; therefore, an endovascular approach was pursued. Two detachable latex balloons (Nycomed) were used to occlude the right coronary artery aneurysm (bottom left, Figure 1). One detachable balloon and several pushable, detachable coils (Target) were used to occlude the left circumflex aneurysm (bottom left, Figure 2). Additional coils were introduced via the saphenous vein graft to occlude the residual retrograde flow into the left circumflex artery aneurysm (Figure 3). Follow-up CT demonstrated complete thrombosis of both coronary aneurysms (bottom right, Figures 1 and 2). The patient was discharged with significant improvement in his symptoms. Six months after the procedure, the patient remains well, without any complaints.
Figure 1. Top left, Angiogram of giant right coronary artery aneurysm (RCA, arrowheads). Top right, CT of aneurysm (arrowhead). R indicates right ventricle; L, left ventricle. Bottom left, Two detachable balloons (arrows) occluding ostium of RCA aneurysm. Bottom right, Follow-up CT shows complete thrombosis of RCA aneurysm (arrowhead).
Figure 2. Top left, Angiogram of left circumflex artery aneurysm (LCx, arrow). Top right, CT of aneurysm (arrow). A indicates ascending aorta; P, pulmonary artery. Bottom left, Balloon (arrow) and coils (arrowhead) occluding ostium of LCx aneurysm. Bottom right, Follow-up CT shows complete thrombosis of LCx aneurysm (arrow).
Figure 3. Left, Selective angiography of saphenous vein graft to distal left circumflex artery (arrow) demonstrating retrograde filling of aneurysm (arrowhead). Right, Coils (arrowhead) occlude further flow.
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