Stent-assisted Coil Embolisation of Wide-necked Renal Artery Aneurysms

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Introduction: A wide-necked saccular renal artery aneurysm (RAA) arising from the left posterior segmental was not reported before and can be treated by stent-assisted coil embolisation.

Case report: A 69-year-old man presented with RAA arising from left posterior renal segmental artery, which was a saccular wide-necked RAA that was 2.5 cm in size. He underwent endovascular coil embolisation assisted with a self-expanding nitinol stent that originally had been constructed for the treatment of intracranial aneurysm. Distal renal infarction occurred in stented segmental artery.

Discussion: Distal infarction after stent-assisted coil embolisation should be considered as a possible complication in the treatment of RAA in relatively small renal segmental artery.

INTRODUCTION

Stent-assisted coil embolisation is a well-described technique for the treatment of wide-necked intracranial aneurysms1 which has been transferred to treatment of the renal arteries.2–4 The report of treatment of renal artery aneurysm (RAA) arising in segmental artery is very rare. We present a case of complicated stent-assisted coil embolisation of wide-necked saccular RAA arising in left posterior segmental artery.

CASE REPORT

A 63-year-old man presented with a RAA which was found during evaluation of intermittent vague abdominal pain. Computed tomography (CT) angiography defined a 2.5 × 2.1-cm-sized saccular RAA with partial wall calcification and mural thrombus arising from the ostial portion of the left posterior segmental renal artery. The aneurysm neck was 17 mm in diameter and located 6 mm from the renal artery bifurcation (Fig. 1A and B).

For endovascular intervention, the main artery was first catheterised with a 6-Fr guiding catheter (RDC, Cordis, Warren, NJ, USA). At the beginning of the procedure, 5000 U of heparin was given intravenously and heparinised saline solution (1000 U/500 mL) was infused through the guiding catheter throughout the entire procedure. A 300-cm-long 0.016-inch guidewire (Transend, Boston Scientific, USA) was navigated under road-mapping fluoroscopy control from the main artery into the posterior segmental renal artery. A detachable, bare-metal stent (length, 30 mm; diameter, 6 mm; Solitaire, eV3, CA, USA) was placed over the aneurysm neck extending to the distal branch. A 2.8-Fr microcatheter (Progreat, Terumo, Tokyo, Japan) was carefully advanced with a guidewire through the stent mesh into the aneurysm. The aneurysm was filled with platinum detachable microcoils (14*30 × 2, 12*30 × 2, 10*30 × 1, 12*20 × 1, 10*20 × 1, 8*20 × 4, Interlock IDC, Boston Scientific, USA). Free blood flow to the distal arterial branches was confirmed by repeated angiography during the intervention. However, the posterior segmental artery was not visualised with partial infarct despite thrombolysis (100,000 U urokinase) (Fig. 2). The patient’s symptom was minimal. Six months after the procedure, a follow-up CT confirmed occlusion of the aneurysm and revealed partial atrophic change with renal perfusion defect.

DISCUSSION

This is the first report of treated aneurysm arising from the left posterior segmental renal artery according to authors’ literature review. Wide-neck aneurysms require additional...
protection with balloon remodelling technique or bare-stent-assisted coil embolisation to prevent potential coil migration.3,4 Partial infarction of posterior segmental artery was found during the procedure despite thrombolysis (100,000 U urokinase). This procedure-related complication of thrombo-embolism, which was confirmed on the CT scan follow-up at 6 months, was also associated with some kidney atrophic events. This deleterious effect of the technique is known to occur in the treatment procedure of brain aneurysm. Premedication is known to be important to prevent thrombo-embolic complications.1

CONCLUSION

The author experienced wide-necked RAA, which was treated with stent-assisted coil embolisation. Partial infarction of distal segmental artery after embolisation can occur.

CONFLICT OF INTEREST/FUNDING

None.

REFERENCES