TCTAP C-215

Endovascular Treatment of Type 2 Endoleak After EVAR for Aortocaval Fistula

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[Clinical Information]
Patient initials or identifier number:
hs case 1 / tctapic001

Relevant clinical history and physical exam:
In July 2013, a 67-year old male was presented at the emergency department with the triad of an abdominal continuous bruit, a pulsatile abdominal mass and severe congestive heart failure. CT-scan revealed a ruptured infrarenal aortic aneurysm into the inferior vena cava. This was treated with a aorto-bi-iliac stentgraft. On the final angiogram at the end of this procedure, there was no evidence of an important endoleak. Nine days later, the patient left the hospital in good condition.

In November 2013, a first follow-up CT-scan was performed and this showed an important type II endoleak sustained by a patent inferior mesenteric artery and a persistent aortocaval communication. The aneurysm diameter was reduced, but it was deemed necessary to treat the aortocaval fistula. Therefore, a transvenous embolization of the aneurysmal sac was performed with glue and coils. The day after the procedure however, a new CT-scan was performed, and this showed a persisting endoleak through inferior mesenteric artery and the aortocaval fistula. The next day, a new successfull embolization of the inferior mesenteric artery was performed through a translumbar puncture.

Relevant test results prior to catheterization:
Clinical examination and CT scan on admission.
CT scan on follow up

[Interventional Management]
Procedural step:
Balloon (20mm diameter-40 mm) through 11F sheath and positioning into inferior vena cava, at the level of the fistula
Insufflation of the balloon: temporary occlusion of inferior vena cava and aortocaval fistula
Placement of coaxial microcatheter through the cobra catheter into the aneurysm sac
Embolization with several wire coils and injection of Lipiodol® – Histoacyrl® mixture into the aneurysm sac
Escape of some embolic agent into the inferior vena cava: to retain this, placement of a Wall stent (24mm-70mm) at the level of the aortocaval fistula into IVC is performed
Postdilatation of the stent with the 20mm balloon
Contrast injection shows good patency of the inferior vena cava and entrapment of embolic agent between the wall of the inferior vena cava and the Wall stent.
End of procedure
CT scan one day later shows persistent type II endoleak, sustained by patent AMI with outflow through patent lumbar arteries and median sacral artery, and a persistent aortocaval fistula
New procedure under general anesthesia and ventral decubitus
Translumbar puncture of the endoleak cavity with 18G needle
Contrast injection shows persistent endoleak with inflow from the inferior mesenteric artery and outflow through aortocaval fistula
Advancement of microcatheter (Progreat 2,7) into the inferior mesenteric artery
Obliteration of inferior mesenteric artery by placing several microcoils
Additional injection of Lipiodol®-Histoacyrl® mixture into the aneurysm sac until it is completely obliterated

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Successful Endovascular Intervention of Chronic Total Occlusion with Severe Calcification in the Superficial Femoral Artery Using 0.035 Inch Wire Terminal End

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[Clinical Information]
Patient initials or identifier number:
R.T 01860676

Relevant clinical history and physical exam:
An 85-year-old female had previously received femoral-femoral bypass (F-F bypass) surgery for left common internal artery occlusion, and femoral-popliteal artery bypass (F-P bypass) surgery for left superficial femoral artery (SFA) occlusion.

She admitted for left toe pain which showed cyanosis and gangrenous change. Duplex showed F-P bypass was occluded. Therefore, we decided to perform endovascular therapy for left superficial femoral artery.
Relevant test results prior to catheterization:
Duplex ultrasonogram revealed her F-P bypass was occluded, and SFA was also occluded with severe calcification. Her left skin perfusion pressures were 9mmHg at plantar and 26mmHg at dorsal artery.

Relevant catheterization findings:
Her F-P bypass and distal SFA was occluded.

[Interventional Management]
Procedural step:
We inserted a 6Fr guiding sheath in the F-F bypass body. Firstly, we tried to cross the CTO lesion in the superficial femoral artery with antegrade approach, using 0.014-inch stiffness wire with microcatheter. But it was too difficult to cross the lesion because of severe calcification. Then, we punctured the distal posterior tibial artery and inserted a soft wire with microcatheter. We tried to cross the lesion with bidirectional approach, but could not cross. IVUS showed the antegrade wire into the sub intimal space. Because we thought reentry was necessary for recanalization, we needed more stiffness wire. Then, we used a 0.035-inch wire terminal end, and finally succeeded to reenter the distal true lumen.

We performed predilatation with 4.0×40mm balloon and implanted 6.0×120mm and 7.0×100mm nitinol stents. After postdilatation, the final angiogram showed successful recanalization in the SFA CTO lesion.

Case Summary:
We sometimes experience that it is too difficult to cross the lesion with severe calcification like this case and the wire usually tends to advance into the sub intimal space, then we need to perform reentry from sub intimal space to the true lumen. In this case we needed more stiffness wire for reentry. Then, we deformed terminal end of 0.035-inch wire and used for reentry.
We think this method is useful for this situation.