VASCUPEDIA

Endovascular revascularisation of left brachiocephalic vein with covered balloon-expandable stent

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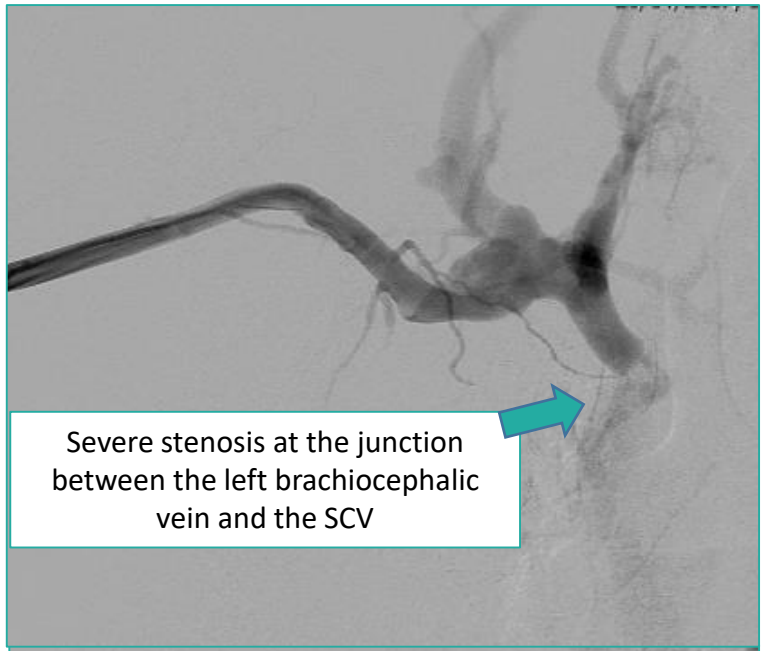
Case presentation

- 36 yr. female patient
- 2014: acute renal insufficiency
- 2014: renal biopsy: lupic glomerulonephritis IV with accentuated sclerotic component
- 2014: steroid therapy and dyalisis (right brachial-cephalic upper arm direct hemodialysis access)

- 24.04.2017: presented with symptoms of central venous hypertension (edema of right upper extremity)
- 2017: DUS – severe stenosis at the transition between the anonymous vein and the SVC

She was being dialyzed through a non-tunneled right femoral vein hemodialysis catheter as the stenosis precluded the use of her right brachial-cephalic upper arm direct access

26.04.2017: angiography

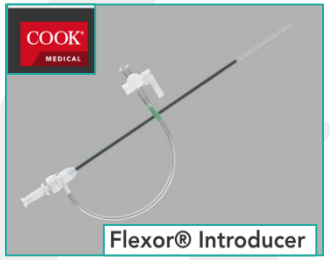


STEP 1: right cephalic vein access

- 5F sheath Radifocus® Introducer II Terumo
- Radifocus® Guidewire M Standard Type, Terumo

STEP 2: right cephalic vein access

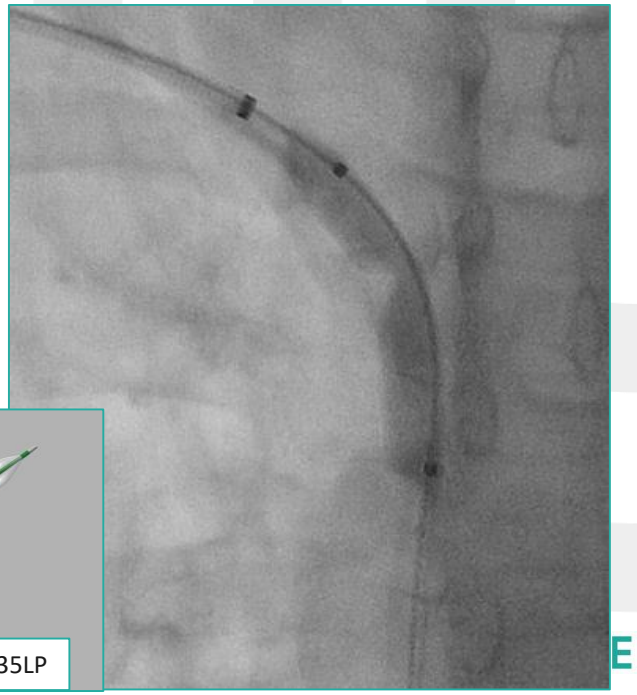
- 6F – 45 cm Flexor® Ansel Guiding Sheath (Cook Medical)

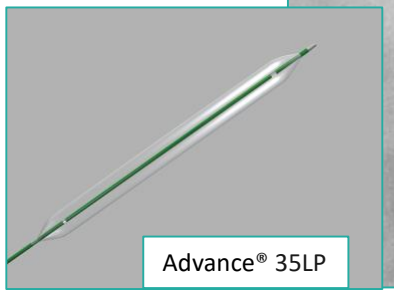


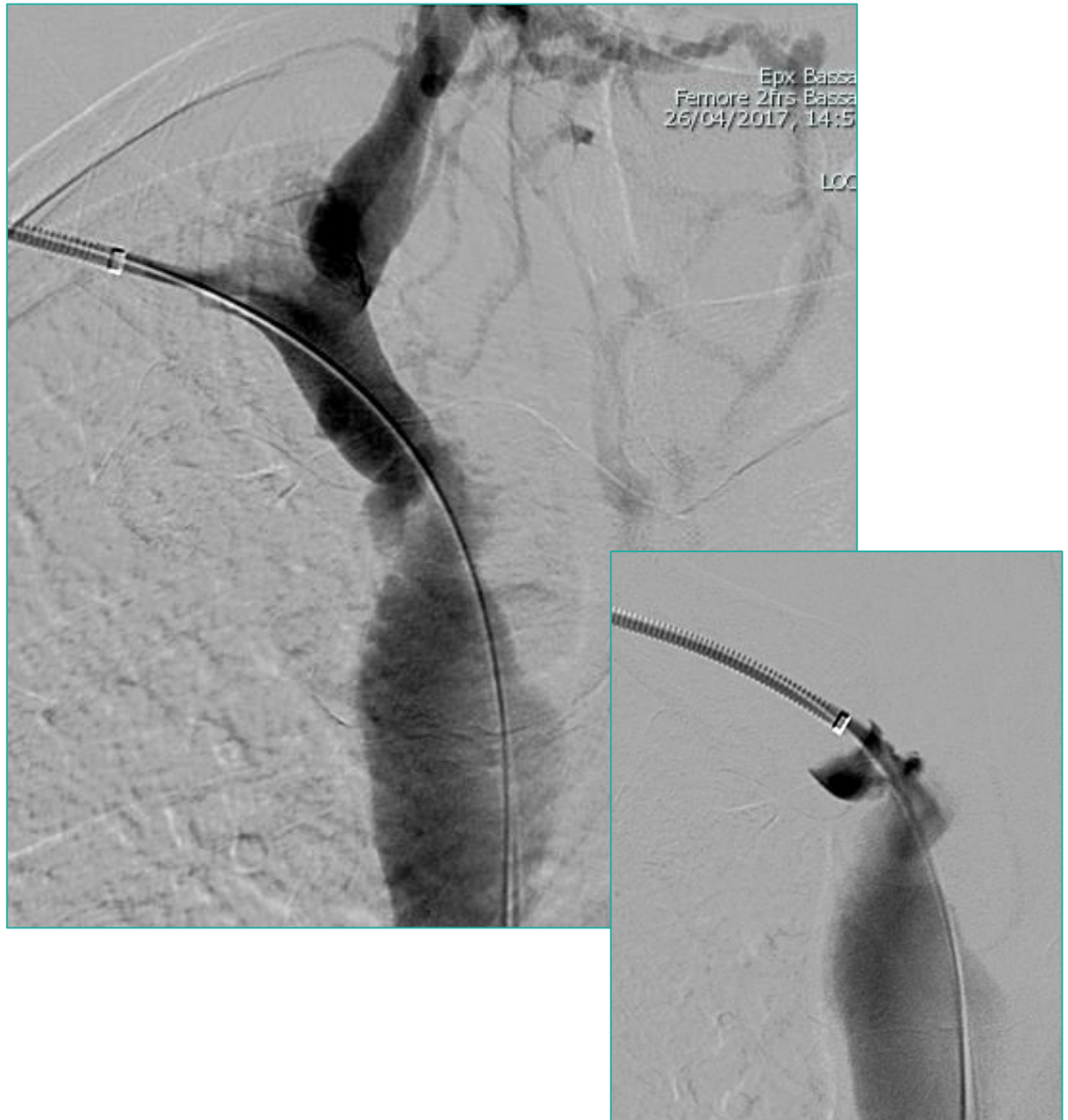
STEP 3: right cephalic vein access

- predilation with a 8 x 40 mm PTA (Advance® 35LP, Cook Medical)

The patient reports intense back and thoracic pain during the PTA







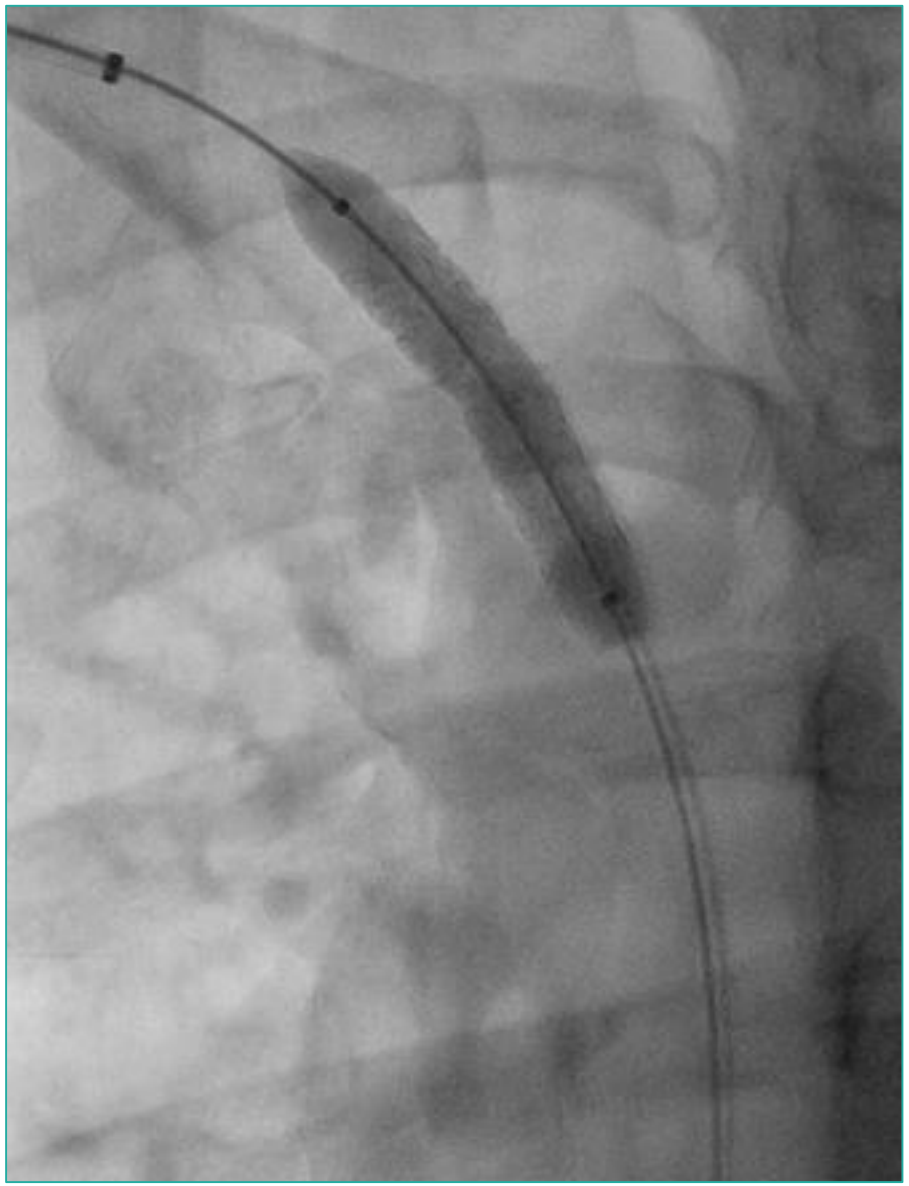
RESIDUAL STENOSIS

STENTING

with a balloon-expandable covered stent

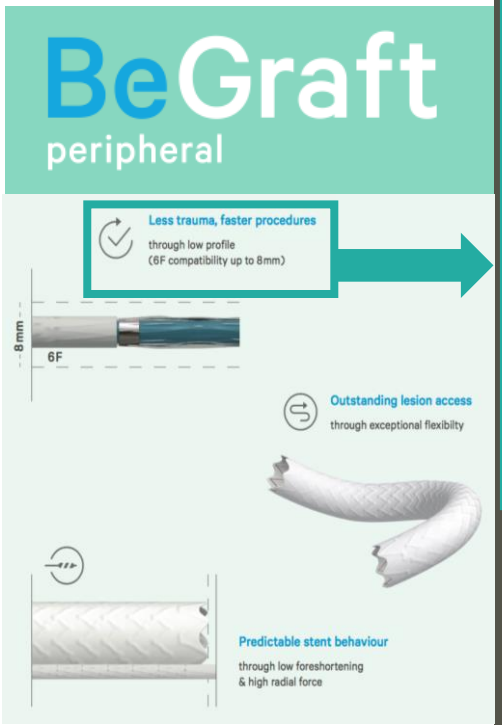
- Accurate deployment
- High radial force
- PTFE coverage in case of rupture

Since the patient reported back and thoracic pain during the predilation at 8 mm, we decided to implant a stentgraft of the same diameter



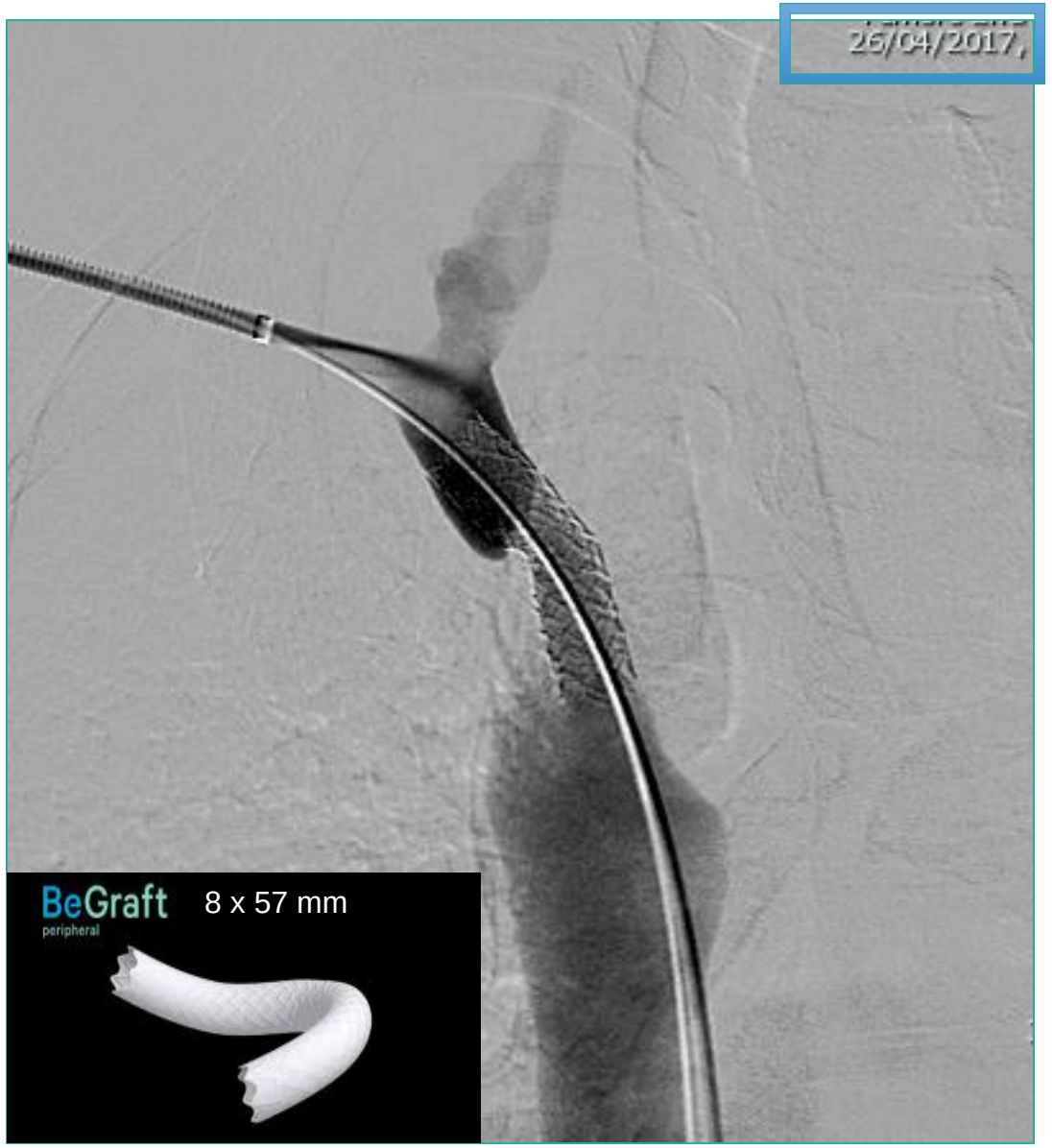
STEP 4: deployment of a balloon-expandable covered stent

- BeGraft Peripheral, Bentley, 8 x 57-mm



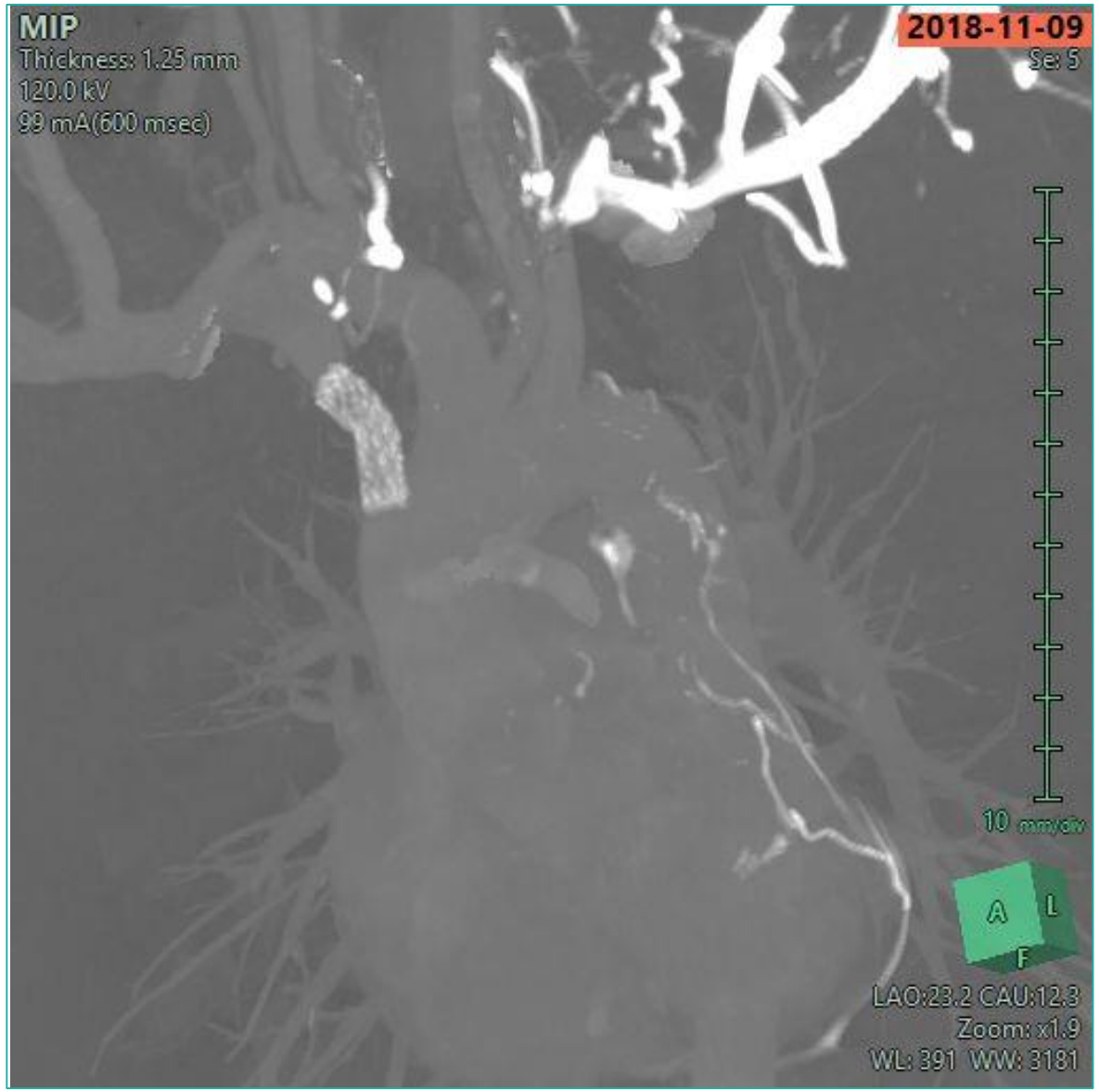
Expanded Stent Graft Diameter	Nominal Stent Graft Length	Introducer Sheath Size	Catalogue Number for Catheter Length	
			75 cm	120 cm
5 mm	18 mm	6 F	BGP1805_1	BGP1805_2
	22 mm		BGP2205_1	BGP2205_2
	28 mm		BGP2805_1	BGP2805_2
	38 mm		BGP3805_1	BGP3805_2
	58 mm		BGP5805_1	BGP5805_2
6 mm	18 mm	6 F	BGP1806_1	BGP1806_2
	22 mm		BGP2206_1	BGP2206_2
	28 mm		BGP2806_1	BGP2806_2
	38 mm		BGP3806_1	BGP3806_2
	58 mm		BGP5806_1	BGP5806_2
7 mm	18 mm	6 F	BGP1807_1	BGP1807_2
	23 mm		BGP2307_1	BGP2307_2
	27 mm		BGP2707_1	BGP2707_2
	37 mm		BGP3707_1	BGP3707_2
	57 mm		BGP5707_1	BGP5707_2
8 mm	27 mm	6 F	BGP2708_1	BGP2708_2
	37 mm		BGP3708_1	BGP3708_2
	57 mm		BGP5708_1	BGP5708_2
9 mm	27 mm	7 F	BGP2709_1	BGP2709_2
	37 mm		BGP3709_1	BGP3709_2
	57 mm		BGP5709_1	BGP5709_2
10 mm	27 mm	7 F	BGP2710_1	BGP2710_2
	37 mm		BGP3710_1	BGP3710_2
	57 mm		BGP5710_1	BGP5710_2

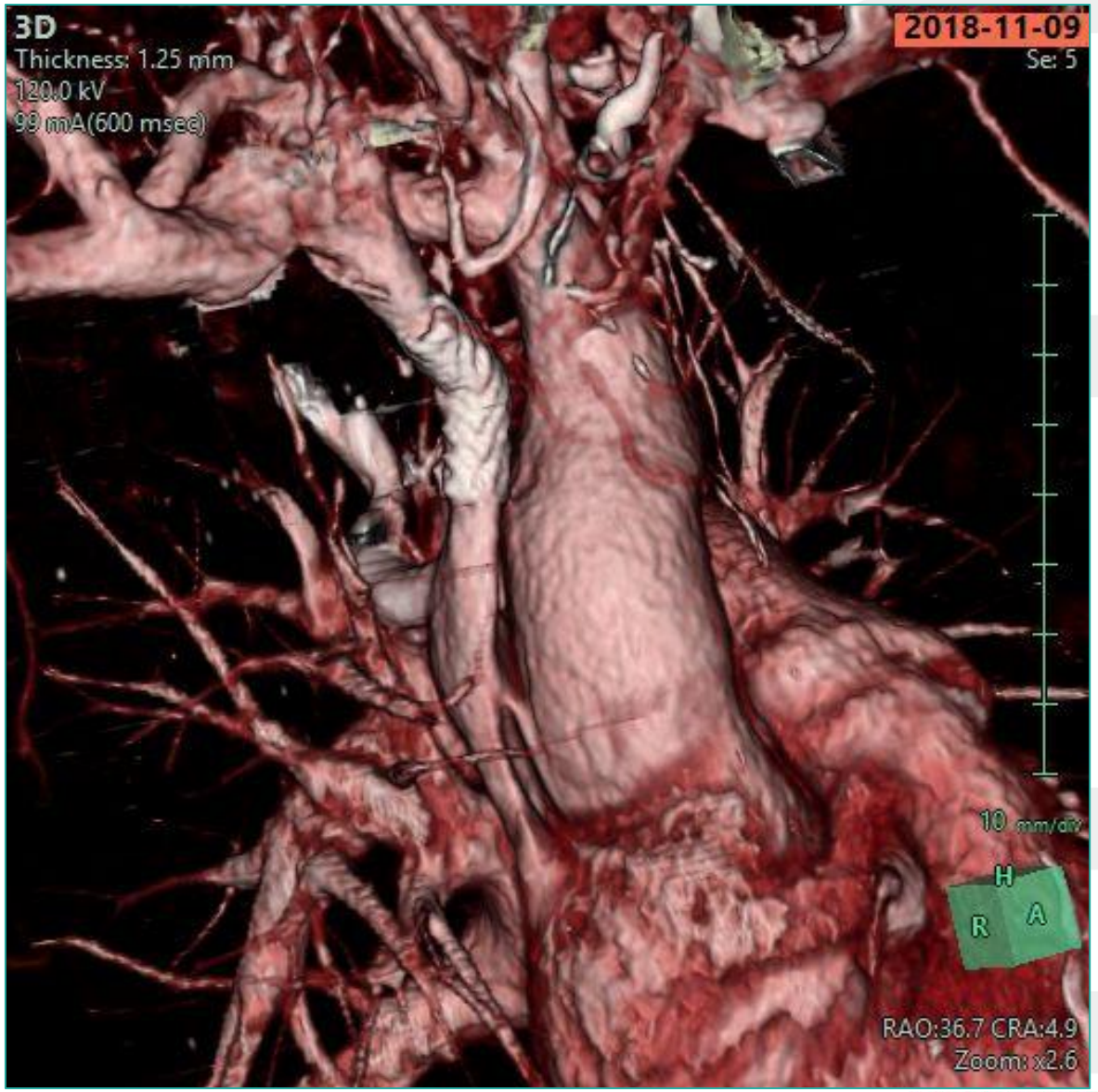
VASCUPEDIA



Since the patient reported back and thoracic pain during the deployment of the stentgraft and based on the good wall apposition of the distale part, we decided not to post-dilate the proximal side of the stent to avoid potential complications

09.11.2018: CTA confirmed the patency of the stentgraft at 19 months





SUMMARY

- Central vein stenosis has an high incidence of recoil, recurrence and occlusion after angioplasty with consequent arm swelling when an ipsilateral vascular access is present
- Retrospective studies suggest that SGs significantly delay the recurrence of stenosis when compared to BMS and PTV
- In a 10-year retrospective evaluation of 70 patients on dialysis, Quaretti et al. compared three cohorts of patients (PTV alone, BMS, and SG). SG patency at 1 and 2 years was 100% and 84%, respectively, BMS was 75% and 46%, respectively, suggesting better mid-term results fo SG in the treatment of central venous access
- The most seriuos complications of SG placement are stent thrombosis and migration
- In particular, undersizing a SG in a high-flow venous circuit can result in migration of the device with occlusion of adjacent venous conduit (i.e. controlateral brachio-cephalic vein) or migration into the heart and pulmonary artery with severe consequences, in particular in case of deployment of short stent
- A proper sizing of the stentgraft is than mandatory

SUMMARY

- Covered balloon-expandable stents are our first-line strategy in case of failure of PTV in central vein stenosis or occlusion reducing the risk of venous rupture
- The accurate deployment of the BeGraft stentgraft through low foreshortening and high radial force allows the treatment of stenosis or occlusion close to adjacent venous conduits reducing the risk of their occlusion
- The fact that the Bentley stentgraft has a good trackability, a low profile (6F up to diameter 8mm), flexibility and conformability makes it our workhorse in the hospital for the treatment of the central venous access stenosis or occlusion