Sharp Recanalization of Symptomatic Central Venous Occlusions in Hemodialysis Patients

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January 25, 2017, Leipzig, Germany
Disclosure

- I do not have any potential conflict of interest
Introduction

Central venous occlusions in hemodialysis patients is an important cause of morbidity, as massive swelling and dysfunctional dialysis vascular access¹.

Introduction

- Endovascular intervention, including balloon angioplasty alone or with stent placement, is the treatment of choice\(^2\), it can relieve the symptoms and maintain the patency of dialysis access.

Introduction

Aim

- But failure rate is still high using conventional techniques. In this situation, an alternative as the sharp recanalization could improve success rate³.

Materials and Methods:

- Retrospective Study.
- From November 2013 to May 2016.
  - 14 Symptomatic hemodialysis patients (8 men; mean age 58.6 years)
  - Mean vascular access loss 5.1 (range 3-12)
  - Mean occlusive length 3.8mm (range 2.1-7mm)
- Underwent endovascular recanalization.
Methods:

Technique:

- First, we tried to overcome the occlusion by using soft tip of hydrophilic wire 0.035" under angiographic catheter.

- If failure we changed to sharp was made using back end of hydrophilic wire to puncture the occlusion cap and it was created a channel that was crossed by the soft tip the same hydrophilic wire.
Case 2

LTCS, 56yo, 11 vascular access loss, right arm swelling and pain.

Complete right subclavian vein occluded.
Case 2

Dual injection: Length the occlusion, both venous stumps and collaterals.

Soft tip of hydrophilic wire under MP catheter 4F.
Case 2

Pre procedure.

After balloon angioplasty and nitinol self-expandable stent placement.
Case 2

Pre procedure.

24h after procedure.
Methods:

Technique:

- First, we tried to overcome the occlusion by using soft tip of hydrophilic wire 0.035" under angiographic catheter.

- If failure we changed to sharp was made using back end of hydrophilic wire to puncture the occlusion cap and it was created a channel that was crossed by the soft tip the same hydrophilic wire.
Case 4

JEF, 56yo, 12 vascular access loss, right arm, neck swelling, venous hypertension and pain

Complete right subclavian vein occluded. Anterograde blunt (no tapered) stump.
Case 4

Dual injection: Length the occlusion, both venous stumps and collaterals.

Retrograde attempt after anterograde failure. The wire only went to the collaterals.
Case 4

Puncture the occlusion with back end of hydrophilic under MP catheter 5F.

After the MP catheter tip into the occlusion, and switch to soft tip of glidewire to cross it.
After crossing the occlusion, serial dilations are performed with increase balloon sizes. After balloon angioplasty and nitinol self expandable stent placement.
Case 4

Pre procedure.

24h after procedure.
Case 11

LCF, 61yo, 8 vascular access loss, left arm, breast swelling, pain, skin wound and bleeding.

Access by right braquial arterial and femoral vein. (Leriche Syndrome)
Case 11

Dual injection: The level and length of occlusion and retrograde stumps and collaterals. Retrograde puncture the occlusion with back end of hydrophilic under MP catheter 5F.
After crossing the occlusion, serial dilations are performed with NC balloons at higher pressures.

After balloon expandable stent placement.
Case 11

Pre procedure.

24h after procedure.
Results:

- The occlusion can be traversed by using conventional technique only in 28.6% of cases.

- Add Sharp recanalization, we have achieved success rate for 85.7%, which were then implanted with stents.

- Success: residual lesion <30%, maintain the patency, relieve the symptoms and without major complications.
Results

Mean follow up: 12.8 (range 8-38) months

- Primary patency: 75%
- Secundary patency: 83.3%*

*One patient died, none of the facts related to the procedure.
Conclusion

- Sharp recanalization of symptomatic central venous occlusions in hemodialysis patients was effective and safe to maintain the patency of dialysis access and relieve the symptoms.
Thank you!

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