Tips And Tricks To Treat Complex Central Venous Occlusion

Chronic Venous Recanalization with conventional technique

Sharp recanalization techniques
RF wire technique

DISCLOSURE
Consultant
- Terumo Interventional Systems
- Baylis Medical
- GE
- Guerbet

Advisory Board:
- Medtronic
- Boston Scientific

1. Understand the CVO anatomy

Variations of the anatomy?
Adjacent organs?

Procedure planning

- Generator:
- RF energy = perforation
- No trauma to adjacent tissues
- Display:
  - Max Potency: up to 25 W
  - Impedance
  - Time (sec.)
- Grounding pad
- Activated by a pedal or pushing the yellow button
2. Simultaneous central venogram
- Collaterals
- Length of the occlusion
- Diameter of the venous stumps

Simultaneous central venograms through the brachial and femoral accesses = DEFINE THE CENTRAL VENOUS OCCLUSION

2. Simultaneous central venogram
- Multiple views
- Venous stumps - same plane?

3. Support sheath/guiding catheter
- Unstable Access
- Fibrotic tissue

Caudal-cranial direction
(+) Lower risk of cardiac tamponade
(-) Unstable: heart beats

Cranio-caudal direction
(+) Stable access
(+) Larger target area
(-) > risk of cardiac tamponade

3. Support sheath/guiding catheter

4. Reduce the length of occlusion with conventional technique
- Technical detail, basic principle...
- Minimize the occlusion length to be crossed by the Power wire
5. Make sure: Catheter and snare (target) alignment

3 views are fundamental: AP, 30° RAO, 30° LAO

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6. SVC occlusion? Get ready for cardiac tamponade

- Subxyphoid window marked. Prep and draped
- Pericardium drainage tray handy
- Chest drain handy
- All under general anesthesia

7. Floss + Single wire technique

Over the same wire, 4mm balloon PTA followed by stent placement

8. Do not jail out important collaterals
9. Cone beam CT to define the recanalization path

10. Fusion of Image and Integrated Registration

3D model for CVO recanalization with Power wire

Orange line: accuracy for the power wire advancement
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65 yo Female
Morbid obesity
Diabetes
Bilateral nonhealing ulcers
> 12m

Prior attempted Venogram-
“unsuccessful”

Congenital Absence of IVC

Left Femoral vein access

Right Femoral vein access
• Left sided catheter just below the hepatic IVC
• Reference for the advancement of the R sided catheter

5-Fr Tegtmeyer catheter + 0.035” Hydrophilic glide wire

Alignment checked in 3 views

Right IJ access

10 mm snare at the level of the renal veins

Alignment checked in 3 views

RF wire used a re-entry device

First RF wire snared out

Alignment checked in 3 views

Simultaneous Venograms to define the stumps and occlusion length

2Viatorr stents 10 mm x 10 cm

2 long 10-Fr introducer sheaths