A novel hybrid technique for inferior vena cava and bilateral iliac vein revascularization in the setting of a thrombosed Bird’s Nest Filter

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Disclosure

Speaker name: Michelle Maneevese, MD

I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☒ I do not have any potential conflict of interest
Almost half of the patients with venous thromboembolic disease (VTE) who are potential candidates for catheter-directed thrombolysis (CDT) also have contraindications for receiving thrombolysis. (1)

There are few mechanical thrombectomy devices available for effective removal of both inferior vena cava (IVC) and iliofemoral clots. ClotTriever by Inari Medical (Irvine, CA) is one of the newest devices with specific indications for lytic-free iliofemoral mechanical clot removal.

However, the design of the device does not allow its use when an IVC filter is present.

We would like to describe a case in which a new reverse sheathing technique allowed for safe thrombectomy in the presence of an IVC filter.
Case

An 84 year-old obese (BMI 32) woman with a permanent Bird’s Nest Filter for 13 years was admitted to the hospital for the second time in two weeks for progressive bilateral lower extremity edema worse on the right. The patient initially presented with bilateral lower extremity edema nine days before. She was sent to a nursing facility with compression dressing on daily Enoxaparin therapy, followed by bridging to twice daily Apixaban. She came back with progressive edema that made it impossible for her to ambulate that took her independence away.
Imaging
Imaging
Imaging
Imaging
Treatment Plan

We did not find her the right candidate for catheter-directed thrombolyis (CTD) due to her advanced age and also the extent of her IVC and bilateral clot burden. We planned pharmacomechanical thrombectomy using AngioJet for removal of IVC clot and bilateral thrombectomy using the CloTriever device.
The ClotTriever
Post Procedure

- On post-procedural day 2, the patient was bridged from heparin drip to twice daily enoxaparin.
- She was discharged to a rehabilitation facility on this regimen the following day.
- Bilateral lower extremity duplex ultrasound was obtained at post-procedural day 19, which demonstrated patent and compressible bilateral external iliac, common femoral, and profunda femoris veins.
Conclusion

- Treatment of patients with ileocaval thrombosis can be challenging and even impossible if the patient is not a candidate for catheter-directed thrombolysis.
- AngioJet device with or without using tPA is an option in this situation. However, it might not be entirely useful or feasible for extensive clot burden.
- The Inari ClotTriever system is a good option for lytic free iliofemoral thrombectomy, however it can not be used when an IVC filter is present due to design of the device and opening of its collection bag in the IVC.
- Using at least a 12 French sheath to protect the collection bag allows using the device even in the presence of an IVC filter. Use of this new technique may help in other similar cases in patients with iliocaval thrombosis with or without IVC filters.
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