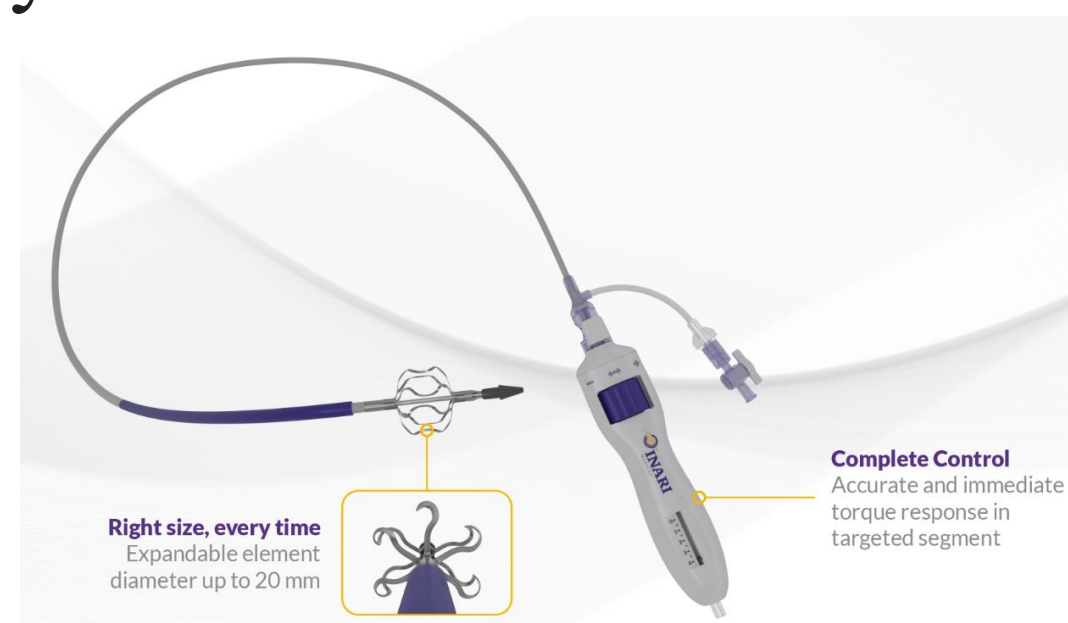


Nora Dunlap DNP & Khanjan Nagarsheth MD

Introduction:

- Chronic iliac vein and inferior vena cava occlusion caused by long standing venous thrombosis can lead to chronic venous insufficiency and venous ulcerations.
- Endovascular technologies have emerged as the first line treatment for deep venous occlusions, but venous bypass can be considered if endovascular treatments fail.
- We report the first two cases in the world, of chronically occluded femoral-caval bypasses that were successfully thrombectomized using a new technology designed for occluded iliofemoral venous stents.



Methods:

Retrospective chart review was performed & identified two patients with post-thrombotic syndrome and venous ulcers, who were treated for thrombosed femoral-caval bypasses for chronic iliac vein and vena cava occlusions using a novel mechanical thrombectomy device between March 2023 and October 2023.

Baseline demographic data was obtained including patient age, past medical history, preoperative diagnoses, clinical symptoms, CEAP classification and imaging. Postoperatively clinical symptoms were examined through chart review. Venous ulcers went on to heal in both patients following revascularization.

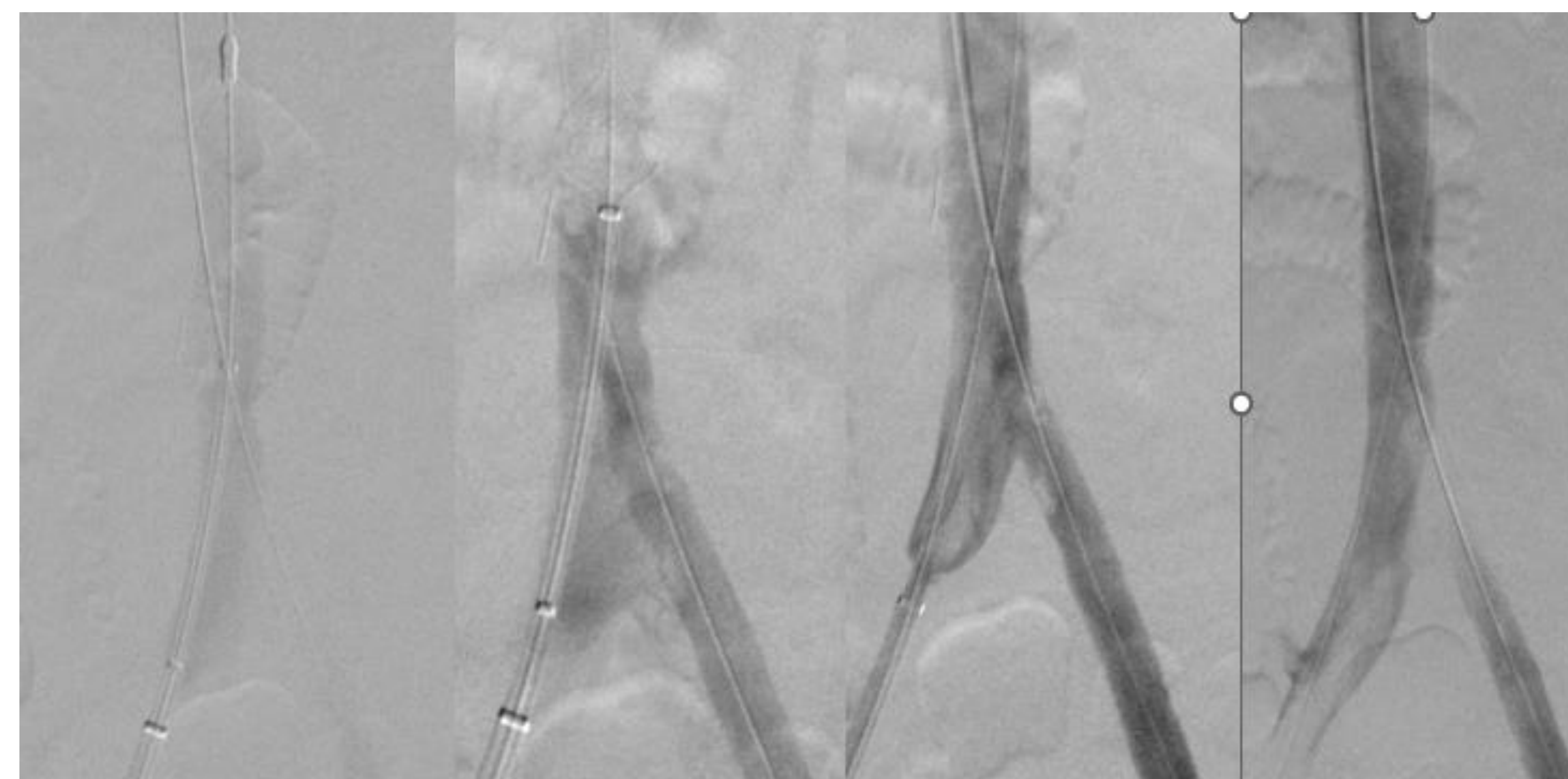
Patients:

- Male age 44 and 52 years old.
- Both patients:
 - Longstanding history of post-thrombotic syndrome with venous stasis ulcers
 - Prior iliac vein stent placement with failure due to thrombosis
 - undergone femoral-caval bypasses to restore venous outflow, manage edema, and heal chronic venous ulceration, however, despite therapeutic anticoagulation for the polytetrafluoroethylene (PTFE) bypasses, both bypasses thrombosed

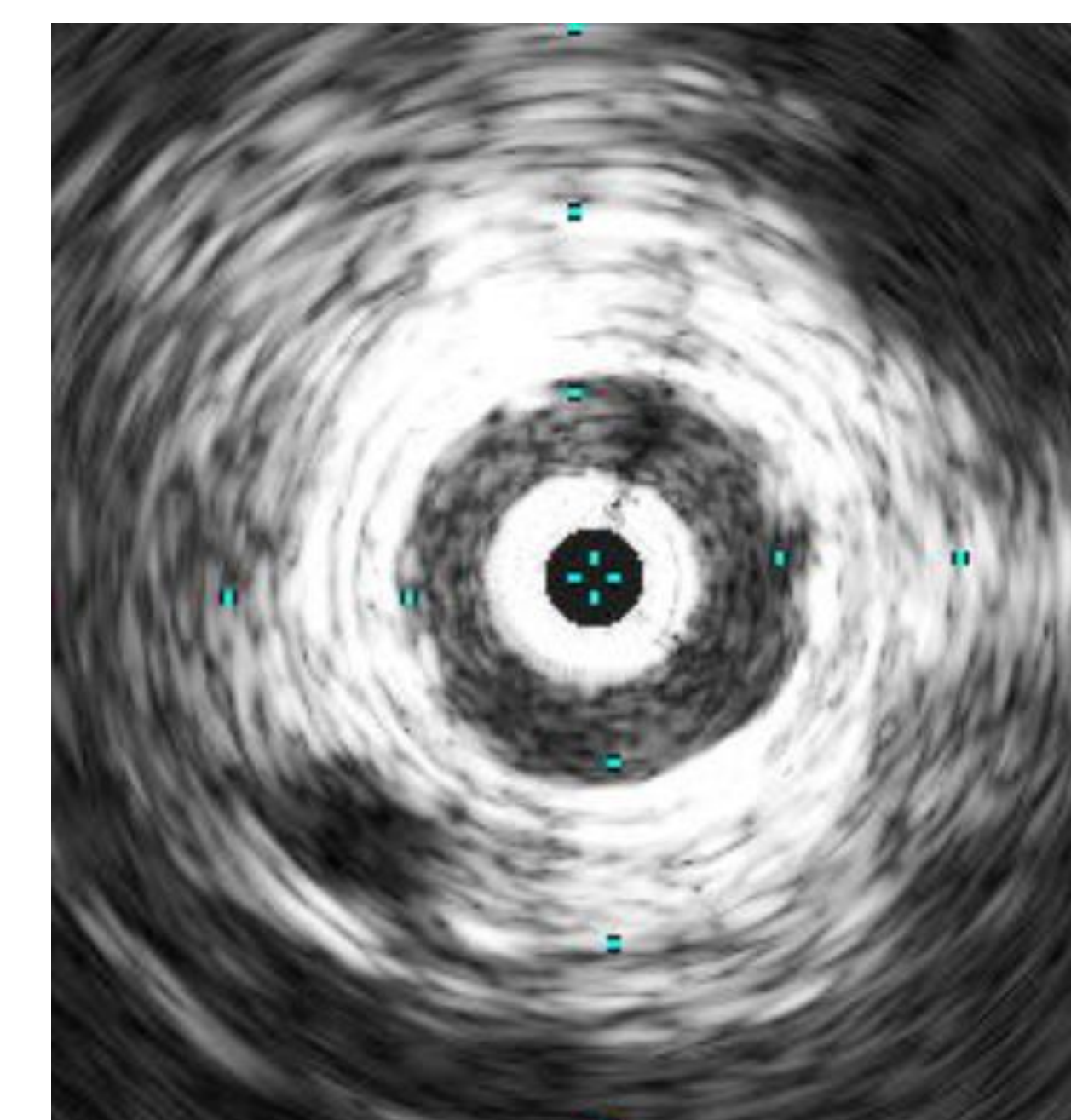
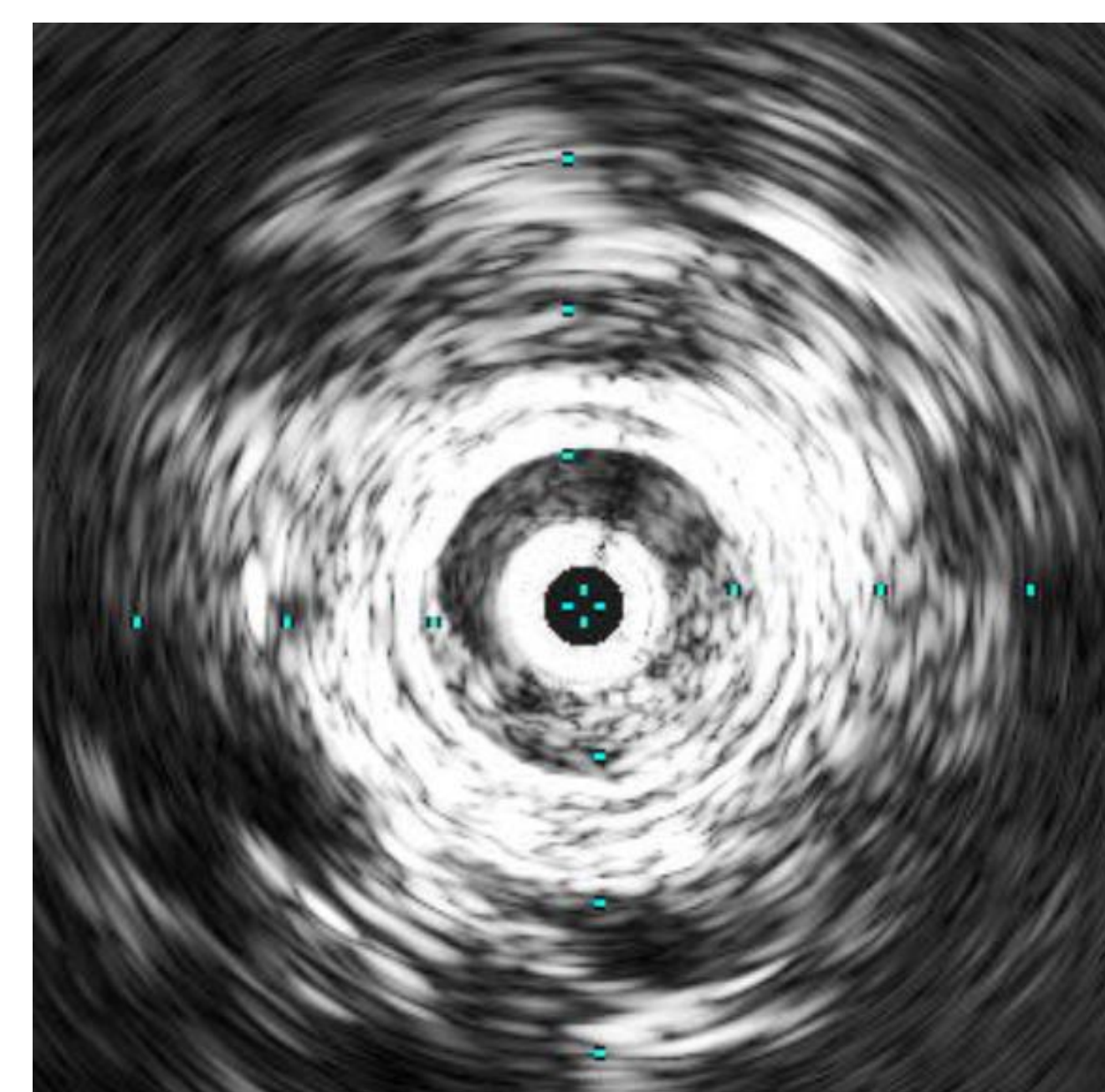
Femoral-Caval bypass



Mechanical Thrombectomy:



IVUS Images Pre and Post:



Discussion:

This novel mechanical thrombectomy device was used to perform mechanical thrombectomy of the chronically occluded femoral to caval bypass, thereby restoring venous return to the caval system. Both patients went on to rapidly heal their lower extremity ulcers and resolve their swelling.

Literature:

- Dexter et al. (2022) Reported on mechanical thrombectomy resulted in positive thrombus removal, procedural outcomes, and safety outcomes at 30 days that were sustained in the long-term outcomes at 6 months.
- Maldonado et al. (2022) showed that 49.0% of extracted thrombus was more chronic than the patient symptom duration had suggested, mechanical thrombectomy was effective in removing thrombus of all chronicity's.
- Mouawad (2022) reported a care of a patient with chronic thrombus who had experienced complete resolution of decades-long ulceration and avoided amputation after successful treatment with mechanical thrombectomy, demonstrating the promise of this procedure.

With recent literature citing extracted thrombus will often be older and more chronic than the DVT symptoms would suggest, the use of RevCore for in-stent thrombosis regardless of chronicity will allow for more effective thrombus removal.

Conclusion:

These cases exemplify the ability to use novel mechanical thrombectomy devices to revascularize chronically occluded PTFE bypasses and restore venous outflow for patients who suffer from post thrombotic syndrome.

We present the first two cases performed in the world of this kind to aid in healing venous ulceration from post-thrombotic syndrome.

References:

- Dexter D.J., Kado H., Schor J., Annambhotla S., Olivieri B., Mojibian H., et al. Interim outcomes of mechanical thrombectomy for deep vein thrombosis from the All-Corner CLOUT Registry. *J Vasc Surg Venous Lymphat Disord.* 2022;10:832–840.e2
- Maldonado T.S., Dexter D.J., Kado H., Schor J., Annambhotla S., Mojibian H., et al. Outcomes from the ClotTrier Outcomes Registry show symptom duration may underestimate deep vein thrombus chronicity. <https://doi.org/10.1016/j.jvs.2022.04.015>
- Mouawad J. Chronic venous ulcer resolution and post-thrombotic syndrome improvement after percutaneous mechanical thrombectomy of a 42-year-old deep vein thrombosis. *J Vasc Surg Cases Innov Techn.* 2022;8:196–200.