Case Study: Crossing a Difficult Venous Occlusion with the TriForce® Peripheral Crossing Set

Physician
George Erbacher, DO

Affiliation
Oklahoma State University Medical Center

Clinical History
The 55 year-old female is member of the US military with a history of deep venous thrombosis. Several years ago she developed a DVT in her left lower extremity during a long flight from the United States to Guam. She was treated with classic anticoagulation therapy and her symptoms resolved.

Recently, she presented to the ER with a massively swollen left lower extremity and was immobile.

The ultrasound showed she had an occlusion of the venous system from her left common femoral vein that extended through her entire left lower extremity. (Figure 1)

Procedure
The left popliteal vein was accessed using Micropuncture® Introducer Set, and a 6-French short sheath was placed. A Kumpe catheter/stiff-angled, hydrophilic-wire combination made rapid progress in recanalizing up to the iliocaval junction, where the wire buckled and would not cross into the inferior vena cava. After several attempts with a multitude of support catheters and wires, recanalizing into the inferior vena cava was unsuccessful.

The patient was then placed supine and the right internal jugular vein was accessed with a flush catheter placed in her right iliac vein. A cavogram showed no thrombus in the IVC and an ostial occlusion of the left iliac vein. The Kumpe/hydrophilic-wire catheter from the right internal jugular vein was successful at crossing into the occluded left iliac vein. This system was left in place as a reference and the patient was again placed in the prone position.

From the left popliteal approach, there was another failed attempt to cross the iliac occlusion using Kumpe/hydrophilic-wire combination. The TriForce Peripheral Crossing Set with Curved Tip Sheath and Curved Tip Catheter (G56415) was then chosen. Applying torque to both the inner and outer catheters as a system while keeping the tip of the angled inner catheter medial, TriForce easily crossed into the IVC. (Figure 2)

Pharmacomechanical therapy and overnight thrombolytic therapy were performed. The next day CT venogram showed resolution of all

Figure 1 – Occluded femoral vein, pre TriForce.

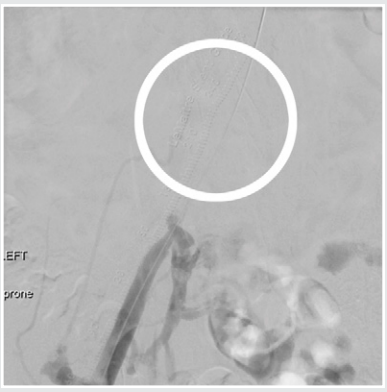

Figure 2 – Occluded left iliac vein post TriForce crossing.

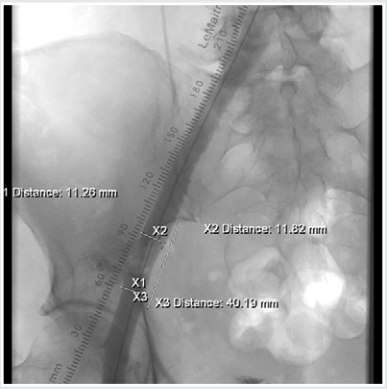

Figure 3 – First stent after TriForce crossing.

Continued on next page.

the thrombus with classic May-Thurner syndrome of the left side. Balloon angioplasty and two overlapping stents were placed and venography showed excellent results. (Figure 3)

Conclusion

As seen in this case, TriForce was the difference in crossing the chronic venous obstruction and ultimately allowing the physician to effectively treat the patient. The device is an ideal choice for crossing difficult vascular lesions.