UNIVERSITY OF TORONTO

Tibioperoneal Stent Assisted Thrombectomy post TPA drip Thrombolysis

Case courtesy of Drs Ruba Kiwan and Arash Jaberi
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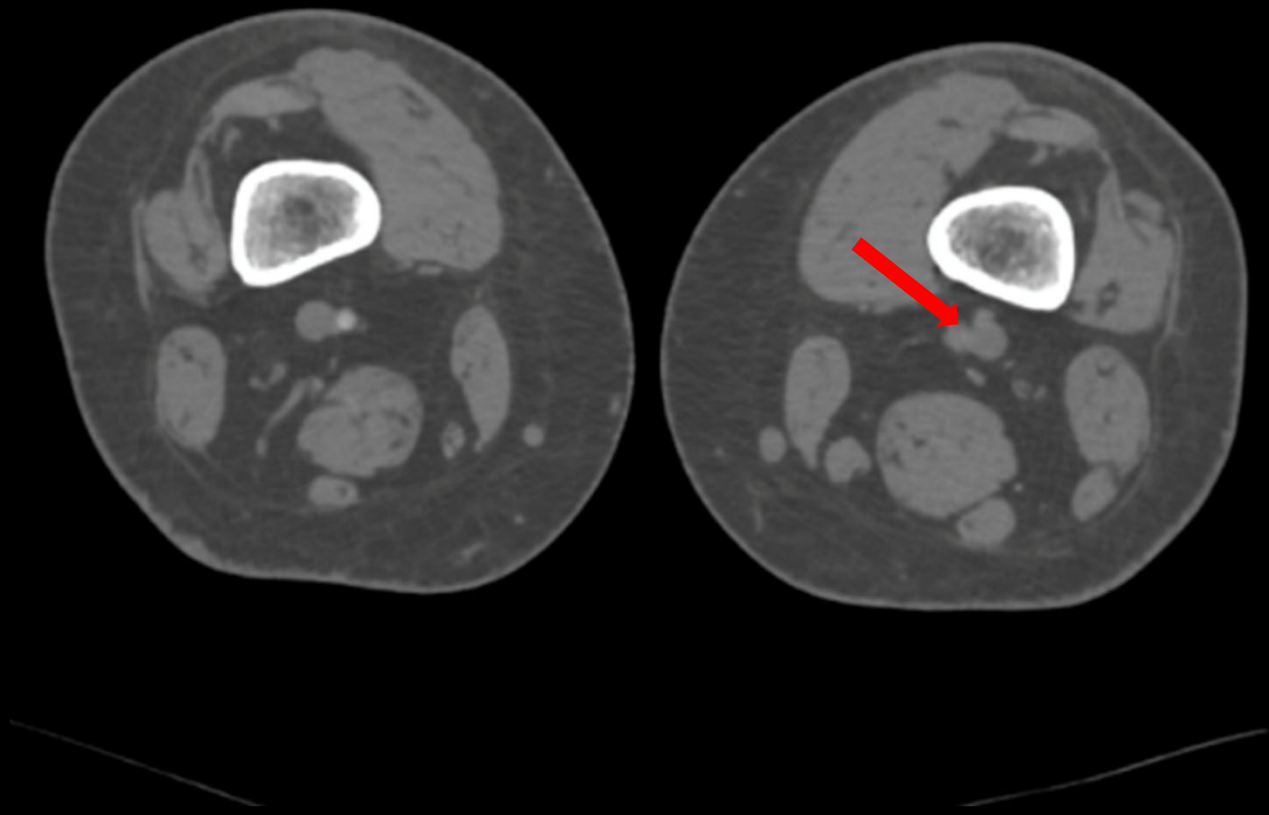
Clinical History

- 48-year-old female
- Left lower extremity short distance claudication
- Pertinent past medical history
  - Hypertension
  - Dyslipidemia
  - Active smoker

Imaging

- 3.5cm area of severe to total occlusive stenosis in the proximal segment of the left popliteal artery (arrow)



Angiography

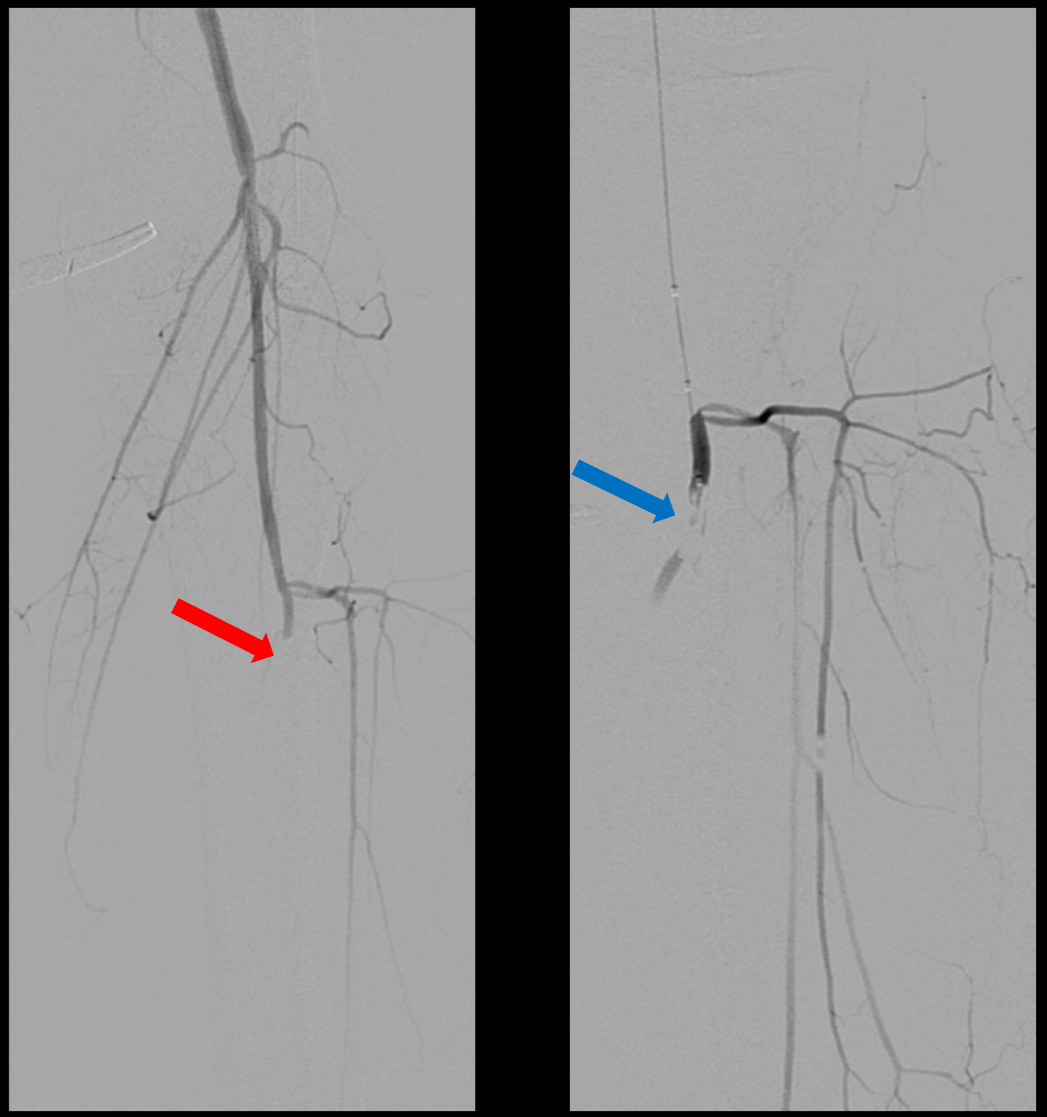
- Occlusion within the proximal popliteal artery (arrows)
- Three vessel tibial arterial runoff (not shown)

Procedure

- Access to right CFA was obtained and 6 Fr sheath was placed up and over in the distal left external iliac
- P1 occlusion was crossed, and position confirmed
- Over a V18 wire, a stent was deployed (arrow)
- Post intervention angiography demonstrated good stent position

Procedure

- Distal embolism noted at level of tibioperoneal trunk (red arrow) with occlusion of the proximal posterior tibial and peroneal arteries
- Unsuccessful attempt at aspiration via 5 Fr DAV catheter
- TPA was instilled across both peroneal and posterior artery thrombi, yet angiography showed residual thrombus (blue arrow)



Procedure

- Proceeded with overnight TPA via crossing catheter (tip buried in the thrombus – red arrow)
- Plan to repeat angiogram in 24 hours to check for persistence of thrombus

Check at 24 hours

- Persistent filling defects noted (red arrows) within proximal peroneal/posterior tibial arteries
- Decision made to attempt stent assisted thrombectomy as there was no access to other thrombectomy devices and aspiration/TPA did not resolve the thrombus

Procedure

- 6 Fr sheath upsized to 7 Fr sheath
- React 68 6.3 Fr catheter was placed within the popliteal artery P3 segment, and a Marksman 3.2 Fr micro-catheter was passed through this and placed over a V18 wire that was past the suspected thrombus to the level of the proximal peroneal

Procedure

- 6mm x 40mm revascularization device was positioned to level of micro-catheter tip and deployed by retracting the micro-catheter
- Both the revascularization device and micro-catheter were then simultaneously removed through the React catheter

Solitaire Platinum device deployed

Thrombus and Solitaire device successfully removed

Procedure

- Post-embolectomy angiography revealed vasospasm
- Post-verapamil angiography revealed a satisfactory appearance with no residual thrombus

Post-embolectomy, showing spasm within the tibioperoneal trunk

Post-verapamil, satisfactory resolution of the vasospasm

Clinical Outcome

Immediately post-procedure:

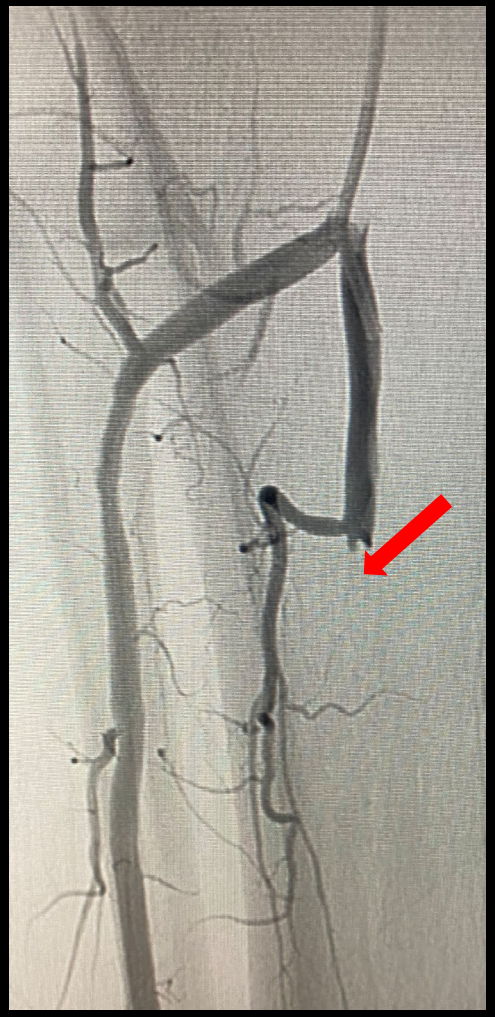
- Preserved three vessel tibial arterial runoff was demonstrated with rapid flow through the posterior tibial artery and diminished flow within the peroneal and anterior tibial arteries, likely secondary to micro embolism.
- The patient was placed on IV heparin overnight.

Following day:

- Palpable posterior tibial pulse. No pain and good capillary refill.
- Discharged on ASA and Plavix

Case #2

- Similar patient presentation with tibioperoneal trunk occlusion (red arrow)
- Subsequent successful stent assisted thrombectomy.



Occlusion in tibioperoneal trunk

Angio post clot removal and post verapamil

Thrombus and Solitaire device successfully removed

Discussion

- Stent retrievers as thrombectomy devices are first line technique in the treatment of ischemic stroke large vessel occlusions.[1-5]
- However, data on revascularization with these devices in the treatment of critical limb ischemia are limited.
- Recent reports investigating safety and effectiveness of the technique in below-the-knee arterial occlusions are promising – the devices are achieving safe, rapid, and effective revascularization.[6]
- Stent retriever revascularization devices may have a place in treating patients with thrombotic or embolic arterial occlusion in whom aspiration has failed, while also being an additional endovascular tool that can successfully treat critical limb ischemia.

References

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