Efficacy of CT fusion 3D-roadmap for iliac artery chronic total occlusion

Introduction
There still exists some difficult cases such as long CTO in the iliac intervention. When performing intraluminal angioplasty, it tends to require more procedure time and the number of wires. We recently performed EVT for iliac CTO with CT fusion 3D-roadmap (CTf3D-RM). Our 3D-roadmap method is to visualize the detail of the occluded vessel as a virtual occluded vessel. It is possible to understand the correct position of the guide wire in patients with CTO in real time.

Method
Angiography system: PHILIPS AZURION 7 M20C
Workstation: VINCENT (FUJIFILM), Interventional Tools

We retrospectively analyzed 36 patients undergoing EVT for iliac CTO from January 2017 to September 2019. We classified them into two groups: EVT using CT fused 3D-roadmap (3D group, n=14) and conventional EVT (standard group, n=22).

Pre eCT
Fusion (CT and angiography)
Blue zone: pre CT, Red zone: Angiography data

Representative case; Lt CIA-EIA CTO

Discussion
• Several reports have described the feasibility of image fusion of preoperative multidetector CT, cone-beam CT, or MRA with intraprocedural fluoroscopy for creation of a roadmap during EVT.

• The most important point of our method is to visualize the details of the occluded vessel, mainly using the creation of a 3D roadmap as a support tool in precise wiring for the CTO lesion.

Conclusion
• CT fused 3D-roadmap technique for iliac CTO reduced the number of guidewire and wiring time.
  • This technique can provide effective and safe treatment for complex iliac lesions without any special CTO devices.