SUMMARY

The Carnelian Support HD shows excellent straight insertability, but tracking performance in flexion is not so high, and it is not suitable for wiring through the pedal arch and bypass as in this case. On the other hand, the Carnelian Support BTA has a thin diameter of 1.6 Fr at the top 30 cm and is made very flexible, which gives it excellent tracking performance in flexion and reachability to the periphery.
In this institution, antegrade wiring is frequently performed separately by the Carnelian Support HD and by the Carnelian Support BTA for Trans-pedal or Trans-collateral.
As characteristics common to the Carnelian Support series, moreover, there are good tip visibility and easy wire rendezvous.
Both support catheters can be used in the 4.5 Fr guiding sheath without stress, but since the risk of intracatheter thrombus formation increases, measures such as appropriate heparinization and flushing as needed are required.

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TOKAI MEDICAL PRODUCTS
CASE REPORT

Utility of Carnelian Support in Below-the-Knee Intervention

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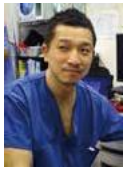

INTRODUCTION

In Japan today, below-the-knee arterial catheterization is principally limited to patients with severe lower ischemia showing tissue defect or ischemic pain at rest. The patient's background is generally poor, and particularly, many diffuse lesions and calcified lesions due to dialysis and diabetes mellitus are technically problematic.
The Carnelian Support (Japanese name: Prominent) series is a support catheter developed supposing use as catheter treatment in the leg, and Carnelian Support HD is a product with particularly high shaft strength and improved straight insertability and supportability.
By describing recent cases treated in our facility, I will discuss the utility of the Carnelian Support HD, its difference from other products, and precautions for use.

CASE 1

A female patient in her 80's with diabetes mellitus who was undergoing maintenance dialysis. She was introduced because of a right second toe ulcer and pain. In her below-the-knee arteries, anterior tibial arterial (ATA) occlusion, posterior tibial arterial (PTA) occlusion, peroneal arterial (PA) stenosis and severe blood flow disturbance were observed, but the dorsalis pedis artery and plantar artery were patent (Figure 1).

In order to attempt the treatment of PTA occlusion, firstly, antegrade wiring with a polymer jacket wire having a tip load of 3 g was started with the help of the Carnelian Support HD. The wire was advanced little by little using calcification shown by fluorography as a marker, and by advancing the Carnelian Support HD when the wire had advanced to some extent to maintain the controllability and backup of the wire (Figure 2). The lesion was an occluded one with severe calcification, but the Carnelian Support HD proceeded easily into the lesion and supported the wiring.

Fortunately, the wire reached the true lumen on the peripheral side, and when the Carnelian Support HD was advanced by applying a tension to the wire, it could pass through the occluded part while feeling strong resistance (Figure 3). Subsequently, the lesion was expanded by a balloon of 2.0 mm diameter and 20 cm length, PA was also expanded, and the procedure was completed (Figure 4).

Figure 1.
Angiography before treatment

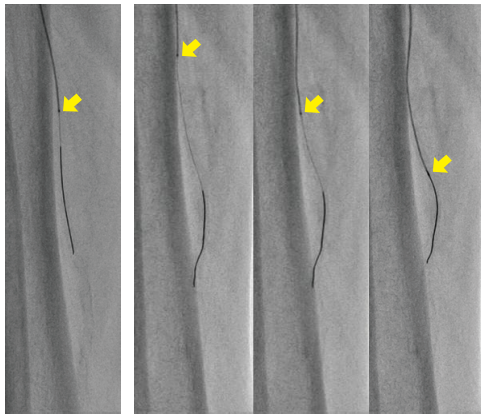

Figure 2.
PTA Wiring. The Carnelian Support HD easily proceeded into and passed through the occluded part
(arrow: tip of microcatheter).

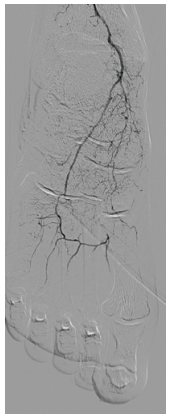

Figure 3.
Angiography of tip

Figure 4.
Final angiography. Good blood flow of the PTA/PA was obtained, and the procedure was completed by confirming direct flow into the wound.

CASE 2

A male patient in his 70's with diabetes mellitus who was undergoing maintenance dialysis. Revascularization was performed before amputation of a toe because of a right fifth toe ulcer and osteomyelitis. In angiography before treatment, severe stenosis and short range occlusion of the ATA/PTA/PA were observed (Figure 5), and endovascular treatment was performed.

In angiography after expansion of ATA/PTA/PA stenosis, good blood flow to the periphery was obtained in the ATA, but the PTA showed delayed imaging because of poor peripheral runoff (Figure 6). Therefore, it was decided to add treatment from the distal PTA to the plantar artery.

Since antegrade wiring to the external plantar artery was difficult, it was decided to perform retrograde wiring from the dorsalis pedis artery to the external plantar artery through the pedal arch. The hydrophilic coating wire passed through the arch, and when the Carnelian Support BTA (Japanese name: Prominent Bta) was advanced as a retrograde microcatheter, it passed without resistance and encountered the antegrade Carnelian Support HD advanced into the occluded site of the external plantar artery (Figure 7). After the occluded site was expanded with a balloon, since the pedal arch was delineated well and the blood flow in the PTA improved, the procedure was completed (Figure 8).

Figure 5.
Angiography before treatment. Delineation from the end of ATA to the dorsalis pedis artery is good, but that from the distal PTA to the plantar artery is unclear.

Figure 6.
After expansion of the ATA/PTA. The blood flow in the ATA was good, but since that in the PTA was poor peripheral runoff, angiography was delayed.

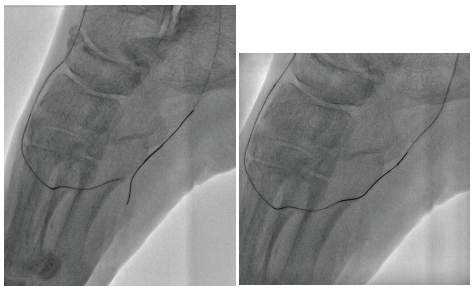

Figure 7.
Pedal arch wiring. Black arrow: Tip of Carnelian Support HD
White arrow: Tip of Carnelian Support BTA

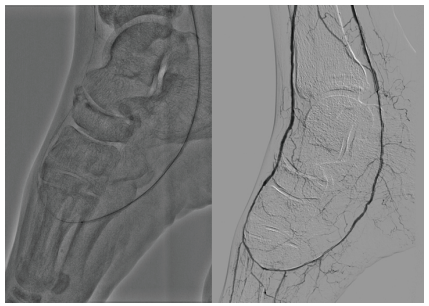

Figure 8.
Final angiography after pedal arch angioplasty