CASE SPOTLIGHT

JADE® Rx
PTA BALLOON CATHETER

Dr. Takashi Miura

Assistant Professor
Cardiovascular Medicine, Shinshu University Hospital
Nagano, Japan

CASE STUDY 1

A Case in which JADE PTA was Effective in a Diffused Severe Stenosis Below-the-Knee Lesion with Severe Calcification

CASE DETAILS

- 76-year-old male patient
- Critical right limb ischemia (Rutherford Stage 5)
- Previous history: Maintenance dialysis was implemented at the age of 70 for diabetic nephropathy. Patient subsequently suffered from posteroinferior wall MI at age 72.
- Present history of illness: An ulcer appeared on the first toe of the right foot in early November 2014. Respective SPP values of 32 mmHG and 22 mmHG were recorded for the dorsum and the planter, and the patient was admitted for detailed examination.

PROCEDURE

From pre-operative sonography of the lower limbs, no lesions were observed from the region of the iliac artery to the superficial femoral artery but there was suspicion of disease at the inferior genicular artery. Upon angiography via a 4F sheath, occlusion was identified at the right posterior tibial artery (PTA) along with diffused severe stenosis at the anterior tibial artery (ATA) with circumferential calcification [Fig. 1 and 2] near the injection port. Given the condition of the disease and especially for dialysis patients, the chance of encountering hemostasis issues would be high during antegrade puncture using large diameter sheaths. Therefore, a smaller 3F parent sheath was selected and introduced with a 0.035" stiff wire via ipsilateral antegrade approach. As the ulcer was on the first toe, the right anterior tibial artery was treated first. Although the procedure started with a Corsair PV microcatheter and a Cruise wire, the catheter could not pass the lesion. The Corsair was exchanged with an X-tream PV which successfully crossed the lesion. IVUS was then used to confirm a continuously circumferential and calcified lesion [Fig. 3a, 3b, and 3c] from the proximal site of the lesion where the imaging catheter could not be advanced any further, possibly, due to the weak backup from the 3F system. To gain lesion access, a 2.5 × 80 mm JADE balloon was used which passed the proximal lesion site with relative ease. During balloon inflation, however, the lesion could not be opened fully at nominal pressure but at 22 atm [Fig. 4]. Despite being a 80mm non-compliant balloon, JADE balloon achieved uniform balloon over 3 balloon inflations to dilate the lesion and obtained good perfusion as per final angiogram [Fig. 5].

Fig. 1

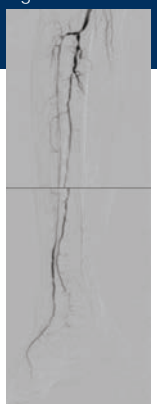


Fig. 2

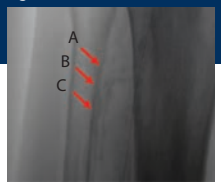


Fig. 3a

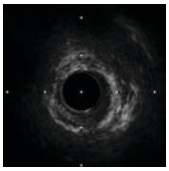


Fig. 3b

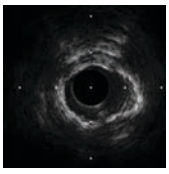


Fig. 3C

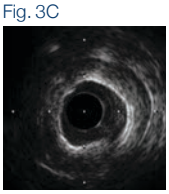
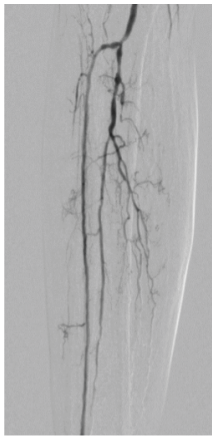


Fig. 4

Fig. 5



DISCUSSION

For dialysis patients, antegrade puncturing often results in hemostasis issues, therefore use of a smaller sheath that accommodates treatment strategy would be desirable. Also, lesions in dialysis patients often involve severe calcification, therefore, having stronger backup from the sheath (in longer length) would help with balloon delivery. In many cases, conventional semi-compliant balloons are able to cross the lesions but fail to effectively open the lesion fully. JADE being low profile, non-compliant and adopting the Sapphire II tip technology, was able to perform against calcified lesions with excellent deliverability and expansion force. Furthermore, its long balloon working lengths allows for shortened treatment time in long, diffused and diseased lesions as typically seen in dialysis patients.

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