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A successful CLI case by trans collaterals approach using the novel method of EVT for CKD patient with diluted contrast medium digital subtraction angiography

There are many problems about EVT for CKD patient. Especially in the CLI patient, we are often needed the repeat intervention and have to use a large amount of contrast medium. Carbon dioxide angiography is gold standard method now. But there are some problems such as complications and insufficiency of imaging quality. So in order to resolve these problems we made a novel method of EVT using diluted contrast medium digital subtraction angiography (DSA). We adjusted the parameters of DSA specialized for diluted contrast angiography, and basically used a 10% diluted contrast. We named this method low concentration DSA(LC-DSA). We report on a 88-year-old male with a large wound in his left foot. He had CKD and his eGFR was under 30ml/min. Control angiography showed total occlusion from superficial femoral artery to infra-popliteal arteries. We performed EVT and could get sufficient antegrade flow by stenting in the superficial femoral artery (SFA) and ballooning in the bellow the knee (BTK) lesions. However the restenosis was happened before the complete wound healing even if we performed four times EVT. So we had to perform 5th EVT for his BTK lesions again. In this time we pused only diluted contrast DSA for EVT because his renal dysfunction was slightly progressed. His ABI was 0.66. Control angiography showed severe stenosis of ostial ATA and total occlusion from proximal to distal ATA. The imaging quality was acceptable. The main vessels was very clear, and small collaterals was clear too. The patient didn't feel any pain from the diluted contrast shot. We could find a good collateral branch from proximal to distal ATA. So we decided to perform trans-collaterals approach with LC-DSA. We used Cruise wire and Prominent micro catheter. The collateral channel was very clear even if the contrast was 10% diluted. And we could reach distal ATA. Finally we could achieve 'rendez-vous' in the CTO lesion and wire was passed the lesion . After the ballooning, final angiography showed acceptable flow to left leg and wound. Total contrast was only 25ml. Finally we could get sufficient direct flow to his wound. And his renal function was well preserved. After that his large wound was well improved. Recently we often use this method in CKD patients and we will report the efficacy of diluted contrast angiography.