Successful Endovascular Debulking using the Rotarex®S Endovascular System in a Patient with Critical Limb Ischemia of the Lower Limb

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Background:
Patients suffering from peripheral artery disease (PAD) present with a broad spectrum of symptoms ranging from asymptomatic vascular disease over intermittent claudication to critical limb ischemia (CLI). CLI has a poor prognosis with an amputation rate of 14-20% and a death rate of 25% within the first year after diagnosis and 50% within five years.

Clinical presentation:
Herein we present an 84-year old patient with critical limb ischemia with ulcerations of her right leg and persistent strong ischemic pain since more than 4 weeks. The patient exhibited a blunted monophasic flow of the right popliteal artery and no detectable flow in the peroneal and tibial artery.

Endovascular Procedure & Follow-up:
Digital subtraction angiography (DSA) showed a total chronic occlusion of the right distal SFA (blue arrows in 1A) with collateral filling in the P2 popliteal level (blue arrow in 1B) and subsequent occlusion of all crural arteries (green arrows in 1B&C).

The occlusion was crossed using a 0.018 hydrophilic guidewire, which was subsequently followed by 2.0*200mm balloon angioplasty. Subsequently, several filling defects were noticed in the popliteal artery suggestive of thrombi (blue arrows in 2A), so that mechanical thrombectomy was performed using a 6F Rotarex®S catheter system (2B). This resulted in complete resolution of the observed thrombi (2C). The final angiographic result was good after 6.0*120mm DEB balloon PTA in the popliteal and 2.5*200mm balloon PTA in the anterior tibial and in the peroneal artery.

Follow-up duplex sonography: Peripheral thromboembolism was not observed. Duplex sonography after one day and at 6 weeks of follow-up showed biphasic flow signal in the left popliteal and in the crural arteries and an ABI of 0.94.

Conclusion:
Currently, little data is available for the use of mechanical thrombectomy in chronic peripheral occlusions. In our case, mechanical thrombectomy resulted in efficient debulking, preventing embolism of thrombotic or soft tissue during treatment of complex femoro-popliteal and below the knee lesions.