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Ultrasound-guided Thrombolysis for Thrombotic Occlusion of the AVF Using the CHAMELEON PTA Balloon Catheter: A Case Report

Toshihide Naganuma, Tomoaki Iwai, Yoshiaki Takemoto, Junji Uchida
Department of Urology, Osaka Metropolitan University, Japan

Case Study : (Background) In Japan, a new VAIVT device, the CHAMELEON PTA balloon catheter with injection port, will be available in 2021. The CHAMELEON is characterized by its ability to hold a guidewire, inject fluid through the injection port while the balloon is expanded, and drain fluid into the vessel through the outlet port in front of the balloon. In this report, we describe our experience with CHAMELEON ultrasound-guided thrombolysis in a case of thrombotic occlusion of an AVF. (Case) The patient was an 84-year-old male hemodialysis patient with a complete occlusion of the midline AVF of the forearm, and a thrombus was observed approximately 15 cm downstream of the AVF anastomosis to the outflow tract. First, a 6Fr. sheath was placed near the anastomosis and a 0.035" guidewire and 6mm CHAMELEON were advanced through the thrombus under ultrasound guidance. After the guidewire passed through the thrombus and reached the site of blood flow, the balloon was advanced. The balloon was advanced and inflated from the furthest end of the thrombus to collapse the thrombus and dilated the stenosis, and urokinase (60,000 units dissolved in 20 CC normal saline solution) was injected through the outlet hole near the proximal end of the balloon. The procedure was repeated until the thrombus was lysed near the anastomosis. Finally, the procedure was terminated after the resumption of blood flow was confirmed by ultrasound. (Conclusion) The CHAMELEON is a device that can simultaneously crush a thrombus, dilate a stenotic site, and dissolve a thrombus., and we believe we were able to achieve a high thrombolytic effect. We believe that ultrasound-guided thrombolysis with CHAMELEON is a useful treatment modality for thrombotic AVF occlusions.