

Abstract Type : Poster
Presentation No. : PDL 006

Salvage Treatment of Dysfunctional Forearm Arteriovenous Fistula Due to Small Caliber Inflow Artery by Percutaneous transluminal Angioplasty

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Objectives:

Although distal arteriovenous fistula (dAVF) is considered as the 'gold standard' vascular access for hemodialysis, dAVF with small caliber inflow artery require frequent intervention for maintaining its patency. However, in such cases, the whole inflow arterial PTA is not performed because of worries about possible arterial rupture in clinical practice. Therefore, we investigated its safety and efficiency in our center.

Methods:

From March in 2013 to February in 2018, 48 dAVF salvaged by the whole inflow arterial PTA as a treatment group and 121 with dAVF salvaged by the other conventional PTA not involving the whole inflow artery as a control group were compared.

Results:

The group with the whole inflow artery PTA were older (years, 69 vs. 59; $p < 0.001$) and otherwise unremarkable. In the treatment group, there is only one case where a significant arterial dissection was encountered with flow limitation that was successfully managed and rescued by balloon tamponades. As a result, no dAVF was abandoned due to complication after the whole artery PTA. After indexed procedure, Primary patency seems to decrease in the treatment group with the whole artery PTA compared with the control group with conventional PTA, but which is not significant ($p = 0.072$). However, primary assisted patency and secondary patency were comparable between these two groups ($p = 0.350$ & $p = 0.590$).

Conclusions:

The whole inflow artery PTA is thought to be effective and safe for dAVF salvage.