Failed Deep Venous Arterialization Performed without Dedicated Devices

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A 64-year-old male was admitted to the hospital with right diabetic foot. Right big toe and 5th toe were amputated and wound had necrotic change, color change, tenderness and swelling.

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DSA showed complete occlusion in entire BTK arteries at the level of ankle and arterial supply to foot is very poor. Therefore, we tried to do balloon angioplasty in stenotic segment of proximal to mid posterior tibial artery and negotiate guide wire over BTA arteries. However, we failed to pass the guide wire over the lesions.

We decided to do deep venous arterialization to save the limb. We punctured posterior tibial vein with micropuncture set under ultrasound guidance.

Using Outback reentry catheter, successful penetration into posterior tibial vein from posterior tibial artery was obtained after putting 2mm balloon catheter in posterior tibial vein.

Two 4mmX19mm stent-grafts were deployed in the track between artery and vein. Then we put three 5mm bare metal stent to crush the venous valve. Balloon dilation with 2mm to 4mm balloon was performed several times up to the forefoot.

A 0.014 inch guide wire was inserted into posterior tibial vein over tibioperoneal trunk. We performed balloon dilation with 3mm balloon catheter in the track between artery and vein.

The final angiogram failed to show successful revascularization and finally, patient underwent below-the-knee amputation.

Even though successful puncture and stent implantation were completed during deep venous arterialization, inappropriate valvuloplasty resulted in failure to salvage the limb.

Conclusion