

Sutureless endovascular bypass technique in long femoropopliteal occlusions

This letter details an experience with a novel technique, similar to the one described by Sarradon et al,¹ and published as a pioneering work in Brazil by Beck et al in 2020.² In 2017, Beck et al performed a sutureless femoropopliteal bypass using a percutaneous approach and a subcutaneous route using Viabahn. The patient, a 60-year-old with multiple comorbidities, presented prolonged occlusion of the superficial femoral artery with a trophic lesion (Rutherford V). A minimally invasive 'In-Out-In' technique was performed, which yielded excellent surgical results, maintained patency in the 6-month follow-up, and wholly healed the lesion. The technical steps are very similar between the studies, with some device variations. Notably, this includes the use of a urological clamp introduced subcutaneously at the puncture site in the work of Sarradon et al.²

Sutureless telescoping anastomosis was initially described as VORTEC (Viabahn Open Rebranching Technique) in 2008 by Lachat et al.³ In this study, the authors performed hybrid revascularization of the renal arteries, based on renal arterial puncture.³ In 2010, Donas et al reported successful clinical outcomes using a VORTEC technique for debranching supra-aortic vessels, allowing for safe and fast-track revascularizations without strokes.⁴ The technique is a significant advancement in treating thoracoabdominal and pararenal aortic aneurysms by hybrid procedure revascularization.⁵

The transition of the technique to the femoropopliteal territory began with Greenberg et al in 2011. The VORTEC technique is utilized for distal anastomosis of a prosthetic femoropopliteal bypass to the above-knee popliteal artery.⁶ Percutaneous treatment began with publications in 2019⁷ and 2020,⁸ with percutaneous transvenous access with the trajectory of the stents within the superficial femoral vein.⁸ Di Primio et al⁹ reported a technique in which the route was extravascular in the perivascular tissue. The main differences were the proximal type of the stent located in the deep femoral artery rather than in the origin of the superficial femoral artery.

Beck et al² complement Di Primo⁹ and Sarredon's¹ case series, highlighting the improvement and reproducibility of the 'In-Out-In' technique. This technique, with low morbidity and acceptable patency, is a viable alternative for high-risk patients with long occlusions and without autologous grafts.

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