physical functionality scores was 27.6 in the vertebroplasty group and 36.1 in the other group which was statistically significant ($P = 0.005$). The mean amount of cement injected was 4 ml in vertebroplasty group and 5.1 in the other group. The mean change in anterior vertebral height was 0.63 mm in the vertebroplasty group and 2.47 mm in the other group which was significantly higher ($P < 0.001$). There was cement leak seen in 20% patients in the vertebroplasty group which was minor and mainly involved the paravertebral and intradiscal regions. In the other group, no intradiscal leak was seen. **Conclusion:** Balloon vesselplasty is superior to vertebroplasty in terms of disability scores, increase in anterior vertebral body height, and volume of cement injected with low complication rate.

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Outback LTD Re-Entry Device for Endovascular Recanalization of Central Venous Occlusions Associated with Failing Hemodialysis Access

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Objectives: To report our experience with the Outback LTD re-entry device for endovascular recanalization of central venous occlusions associated with dysfunctional arteriovenous fistulas. **Methods:** Between January 2013 and January 2019, 11 patients (4 males and 7 females, mean age: 61.8 years) with dysfunctional fistulas secondary to central venous occlusion underwent endovascular treatment using the Outback LTD re-entry device. Reasons for referral were increased venous pressure during hemodialysis ($N = 5$), arm swelling ($N = 5$), and graft thrombosis ($N = 1$). The mean age of the fistulas was 58.1 months, during which time nine patients had prior history of at least one salvage endovascular procedure. In all patients, the Outback LTD re-entry device was used as a bail-out measure after failed attempts to cross the occluded central vein using conventional wiring techniques. A retrospective review was performed to assess the clinical outcome of these patients. **Results:** The site of occlusion was at the junction of the subclavian and innominate veins ($N = 9$), in the right innominate vein ($N = 1$), or in the subclavian vein ($N = 1$). The re-entry device was introduced via the outflow vein of the arm ($N = 6$), femoral vein ($N = 4$), or internal jugular vein ($N = 1$). Technical success was achieved in ten patients (90.9%), seven of whom required provisional placement of bare metallic stents. All ten patients underwent successful hemodialysis immediately after the procedure. Five patients with arm swelling were relieved of their symptoms. Excluding four patients who were lost for follow-up, the mean intervention-free period in the remaining six patients was 6.8 months, while the mean functional period of the fistula circuit after assisted procedures was 33.3 months. No complication related to the procedure was reported during this period. **Conclusion:** The Outback re-entry device can be safely and effectively used as a bail-out measure in patients who fail conventional wiring techniques during the endovascular treatment of central venous occlusions.

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Retrograde Access for Lower Limb Revascularization

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Objectives: To assess the efficacy and success of the retrograde approach as the first line for arterial revascularization or as an adjunct to the antegrade approach in patients with critical limb ischemia at a high-volume vascular institution. **Methods:** A prospective cohort study was performed to evaluate the success rate of using a retrograde approach to revascularize patients who had a failed previous attempt at antegrade angioplasty or as primary attempt if noninvasive imaging showing a patent pedal or popliteal artery. The approach was decided at the time by the interventionist who was doing the procedure. The access vessels used were the popliteal, posterior tibial and anterior tibial arteries. Under ultrasound guidance, access to the chosen artery was secured with 4–6 F sheath and distal access cocktail (heparin, verapamil, and nitroglycerin) used directly after gaining access. The method used to complete the intervention up to the external iliac artery. All patients have clinical and duplex scan follow according to the same pathway for antegrade angioplasty. **Results:** 32 patients with critical limb ischemia with multilevel stenoses and or occlusions had retrograde angioplasty performed. 75% patients had diabetes mellitus and 46% (15 of 32) patients had a failed previous attempt of antegrade angioplasty. 3 (9%) patients had both antegrade and retrograde access performed, with the retrograde wire snared. 7 (21%) had popliteal access, 17 (53%) had posterior tibial access, and 8 (25%) patients had the anterior tibial artery used as the primary access vessel. 21 of 23 (91%) patients were successfully revascularized with good results with two cases being abandoned, one no target vessel and one unable to re-enter proximal inflow. There were no periprocedure complications, but one patient developed pseudoaneurysm at the access site (injected with thrombin). **Conclusion:** This cohort showed that retrograde access in the right choice of patients can have an excellent success rate and should be considered as a primary access site or an adjunct to the antegrade approach.

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Anterior Tibial Artery-Anterior Tibial Vein Deep Vein Arterialization: A Potential Option for Limb Salvage: A Case Report

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Background: Critical limb ischemia (CLI) is considered the end-stage of peripheral arterial disease and is characterized by rest pain, ulceration, and gangrene. CLI has an annual incidence of 50–100 cases per 100,000 and has a poor prognosis with mortality rates exceeding 20% at 1 year after presentation and overall cumulative incidence of CLI patients with major amputation