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Five-Year Results of Percutaneous Endovascular Bypass From the DETOUR I Study

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Objective: In the present single-center study, we have reported the 5-year safety and durability of the percutaneous endovascular bypass DETOUR system.

Methods: Procedures were performed on 23 limbs in 21 patients from September 2015 to June 2017 in our center as a part of a larger, multicenter DETOUR I study.

Results: In the treated group of patients with superficial femoral artery occlusions >20 cm, the technical success of the procedure was 100% without in-hospital major adverse events. During the 5-year follow-up period, we observed three unrelated deaths, no amputations, no deep vein thrombosis, and no other venous adverse events. Four patients (17.4%) had required clinically driven target vessel revascularization. The primary, primary-assisted, and secondary patency rates were 78.2%, 82.6%, and 91.3%, respectively, during the follow-up period.

Conclusions: These long-term, single-center results have confirmed the excellent durability of this novel percutaneous bypass procedure at 5 years for long and calcified femoropopliteal occlusions. The results of endovascular femoropopliteal bypass were similar to those expected for standard open bypass at this anatomic position.

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Atherectomy With Drug-Eluting Balloon for Common Femoral Artery Occlusive Disease: Early Experience

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Objective: Previously, the reference standard treatment of occlusive lesions of the common femoral artery was endarterectomy. In recent years, interest in endovascular treatment of the common femoral artery has been increasing. Stenting of the common femoral artery is possible; however, we believe it is better to avoid it. Calcified arterial lesions cannot be treated well with drug-coated balloons alone. Vessel preparation with rotational atherectomy, followed by drug-eluting balloon usage, could be a good option. In the present study, we have reported our first experience.

Methods: Between June 2021 and October 2021, six patients with eight sites of occlusive disease of the common femoral artery had been treated with rotational atherectomy, followed by use of a drug-coated balloon. These patients were reviewed prospectively.

Results: Of the six patients, three were men, including two with bilateral lesions, and three were women. Their mean age was 74 years. All six patients (100%) had had arterial hypertension, 50% used to smoke, 33% had had diabetes, and 83% had had dyslipidemia. Two patients had had chronic kidney disease. All patients had had preoperative Rutherford stage 3 peripheral arterial occlusive disease, except for one, who had had Rutherford stage 2. The mean preoperative ankle brachial index was 0.79. The mean length of the lesions was 4.2 cm. All lesions were heavy calcified. Two chronic total occlusions were present. All procedures were performed with the patient under local anesthesia. Six procedures were anterograde with a contralateral femoral puncture and two were retrograde with an ipsilateral superficial femoral puncture. No filters were used. The technical success rate was 100%. One case of asymptomatic embolization had occurred in the deep femoral side branch. None of the six patients had died. One patient had experienced a non–ST-elevation myocardial infarction on the first postoperative day. Another patient had developed a false aneurysm at the puncture site that was treated surgically on the fifth postoperative day. The other four patients had had no complications. In the very short term, the primary patency rate was 100%. Of the six patients, three (50%) had had postoperative Rutherford stage 0 peripheral arterial disease and three (50%) had had Rutherford stage 1. The mean postoperative ankle brachial index was 0.9. Enrollment and follow-up are on-going.

Conclusions: These early results have shown that rotational atherectomy with drug-coated balloon angioplasty for common femoral calcified occlusive disease is feasible and safe. It has the advantages of avoiding the potential complications of surgical treatment, with no residual stent.

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Impact of Anticoagulation/Antiplatelet Strategies on Femoropopliteal Bypass Graft Outcome

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Objective: Anticoagulant and antiplatelet (AC/AP) medications have been reported to improve bypass graft patency; however, the optimal AC/AP strategy has remained unclear in the heterogeneous peripheral artery disease population.

Methods: A multi-institutional retrospective review of the Research Patient Data Registry database from 1995 to 2020 was performed for all patients who had undergone femoropopliteal bypass procedures (identified via Common Procedural Terminology codes). The electronic medical records were used to obtain demographic information, comorbidities, smoking status, operative details (bypass target), postoperative AC/AP medications, postoperative complications, and long-term outcomes. The Cox proportional hazards model was used to determine the independent risk factors for major adverse limb events (MALE) after bypass. MALE were defined as reintervention for patency or major amputation of the index limb (above- or below-the-knee amputation). The median follow-up period was 2 years.

Results: A total of 1421 patients had undergone femoropopliteal bypass from 1995 to 2020 in five institutions included in the present study. Complete data were available for 1292 of the 1421 patients (90.9%). The

Table. Risks factors for adverse limb events after femoropopliteal bypass

Risk factor	HR (95% CI)	*P* value
Indication		
Nonatherosclerotic	Reference	
Claudication	1.18 (0.85-1.64)	.317
Rest pain	1.34 (0.99-1.81)	.058
Tissue loss	1.40 (1.04-1.88)	.028
Hematoma	1.46 (0.99-2.14)	.055
CKD	1.26 (1.01-1.58)	.043
Bypass target		
Above-the-knee	Reference	
Below-the-knee	1.25 (1.04-1.52)	.019
Conduit type		
GSV	0.84 (0.70-1.01)	.06
Prosthetic	Reference	
AC/AP regimen		
None	Reference	
MAPT	0.82 (0.53-1.29)	.403
DAPT	0.94 (0.58-1.51)	.79
AC	1.09 (0.64-1.87)	.747
AC + MAPT	0.97 (0.61-1.55)	.906
AC + DAPT	0.97 (0.52-1.80)	.924

AC, Anticoagulation; *AP,* antiplatelet; *CI,* confidence interval; *CKD,* chronic kidney disease; *DAPT,* dual antiplatelet therapy; *GSV,* great saphenous vein; *HR,* hazard ratio; *MAPT,* monoantiplatelet therapy.