INTRODUCTION

Chronic limb-threatening ischemia (CLTI) is a highly morbid disease, incurring significant mortality, limb loss, pain, and diminished health-related quality of life (HRQoL) among those afflicted. CLTI causes an unavoidable amputation unless there is an intervention that increases arterial perfusion.

CLTI is defined as ischemic rest pain, tissue loss, or gangrene in the presence of peripheral artery disease (PAD) and hypoperfusion of the lower extremity, such as ulcers or gangrene that do not heal and objectively proven arterial occlusive disease. The pathophysiology of CLTI is related to inadequate arterial limb perfusion that is below the threshold needed to meet the metabolic demands of the limb, resulting in resting ischemia with skin breakdown and eventual tissue necrosis.

The diagnosis of CLTI is defined by clinical findings associated with objective peripheral examination such as ankle-brachial index (ABI), systolic toe pressure and transcutaneous oxygen pressure (TcPO2). CLTI is considered in case of ischemic rest pain with ankle pressure.

Revascularization is the cornerstone of therapy for CLTI and has a class I recommendation by all professional guidelines, can reduce the rate of amputation. The effectiveness of open peripheral bypass grafts and percutaneous transluminal angioplasty is recognized both in saving the extremities.

As clinical syndrome defined by the presence of peripheral artery disease in combination with ischemic rest pain, gangrene, or lower limb ulceration more than 2 weeks of duration. The goal of CLTI treatment is to relieve pain, allow wound healing, improve patient's function, prevent limb amputation, and reduce mortality. Lower limb revascularization is the first-line treatment in CLTI patients that can tolerate this procedure. In few cases, CLTI patients with multiple comorbidities or low chance of successful revascularization may require a primary amputation. A simultaneous medical intervention is required for pain management, control of cardiovascular risk factors and optimization of glycemic control.

CASE PRESENTATION

A diabetic type II 68-year-old female patient presented with complaints of pain, swelling, and itching in the left leg that was felt for approximately 1 month ago. The wound persists although the ankle was already amputated.

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CASE REPORT

The patient was discharged from hospital 4 days after procedure. Followed up after 3 months, she did not complain any ischemic pain at left leg.

DISCUSSION

Globally, peripheral artery disease (PAD) is a common condition. An estimated 202 million people worldwide had PAD in 2010. In patients over 40 years old in the United States, the prevalence of lower extremity PAD was 5.9%. 1% to 2% of patients with lower extremity PAD have Chronic Limb Threatening Ischemia (CLTI). 20% of patients with CLTI will have an amputation, and 25% will pass away within a year. Consequently, CLTI is a condition with significant implications for morbidity, mortality, and public health.7

CLTI is a condition characterized by chronic (≥2 weeks) ischemic rest pain, nonhealing wound/ulcers, or gangrene in 1 or both legs attributable to objectively proven arterial occlusive disease. The diagnosis of CLTI is a constellation of both symptoms and signs. The arterial disease can be proved objectively with ABI, TcPO₂, or skin perfusion pressure.12

The primary treatment for the femoropopliteal disease has been surgical revascularization, which was thoroughly reviewed in Inter-Society Consensus for the Management of Peripheral Arterial Disease (TASC II).13 Due to the patients’ advancing age, comorbidities, and frailty, effective revascularization currently presents an additional challenge. Pure endovascular treatment is still associated with high amputation rates and frequently fails to achieve effective and long-lasting revascularization.14

Femoropopliteal lesions account for a significant proportion of endovascular interventions for peripheral artery disease in patients with disabling claudication or chronic limb ischemia. The femoropopliteal artery crosses two joint structures (hip and knee joints) and courses through the muscular adductor canal in the thigh, which places the artery at increased biomechanical stress. Stents in the femoropopliteal system have historically been associated with increased rates of stent fracture, which is associated

![Figure 1](image1.jpg) Blackened wound initially spread from toe to ankle within 1 week (white arrow).

![Figure 2](image2.jpg) (A) Victory 14 wire 0.014” was inserted but recanalization did not penetrate, (B) continued with Victory 18 wire the lesion could penetrated, (C) DSA evaluation found significant residual stenosis on left popliteal artery, (D) thus continued with 6mm balloon angioplasty to open the intimal occlusion, (E) using Abbott supera peripheral stent in-stent system was delivery successfully, (F) the final DSA was shown a very good result.

the ankle was already amputated.

CT-angiography showed total occlusion in 1/3 distal of left femoral artery and no visualization of left popliteal artery. She was diagnosed as left CLTI femoral popliteal Rutherford VI TASC II type D with ischemic rest pain. Spinal anesthesia was performed, a puncture in left femoral artery was performed, carried out Digital Subtraction Angiography (DSA) that showed total occlusion in the 1/3 distal of left femoral artery and there was no visualization of the left popliteal artery. Victory 14 wire 0.014” was inserted to left superficial femoral artery but recanalization did not penetrate, continued with 18 wire the lesion could penetrated. Pre-dilated angioplasty expansion from left femoral artery to left popliteal artery using mustang balloon size 6.0 x 80 x 75 conservatively done with 10 atm pressure within 3 minutes. DSA evaluation showed significant residual stenosis. However cannulation was performed once again with mustang balloon size 3.0 x 60 x 75 inserted from proximal to distal of left peroneal artery with 10 atm pressure balloon inflation pressure for 3 times within 3 minutes. Recanalization performed in left femoral artery to left popliteal artery for 3 times within 3 minutes.

DSA evaluation found significant residual stenosis on left popliteal artery, thus continued using Abbott supera peripheral stent in-stent system. Evaluation result using DSA after stenting showed PTA in left femoral artery was seen well visualized with TIMI flow 3, left popliteal artery was still seen 50% no significant residual stenosis with TIMI flow 2, left peroneal artery was seen well visualized with TIMI flow 3. The patient was discharged from hospital 4 days after procedure. Followed up after 3 months, she did not complain any ischemic pain at left leg.
with high restenosis rates and decreased primary patency rates during long-term follow-up. There is a critical need for stent platforms with a reduced risk of stent fracture while maintaining patency during long-term follow-up.15

Even though many types of stents have been tested in superficial femoral artery (SFA) and popliteal artery (PA), most of these devices have provided an unsatisfactory outcome, probably due to their unsuitable anatomical and physiological characteristics. The Supera peripheral stent (Abbott Vascular, Santa Rosa, CA, USA) is a braided interwoven nitinol device specifically designed for treating atherosclerotic lesions of the femoropopliteal segment. Four Italian hospitals performed one hundred-five endovascular procedures on 99 patients for femoro-popliteal stenting with Supera. Supera stent showed excellent safety, effectiveness profile and high durability for treating PAD patients with femoropopliteal artery disease.16

CONCLUSION

We successfully performed revascularization using supera stenting, and the femoropopliteal artery showed good TIMI flow results. In CLTI patients, stenting may be an option to lower the risk of major lower limb amputation.

CONFLICT OF INTEREST

All author declares there is no conflict of interest regarding publication of current report.

ETHICAL CONSIDERATION

The patient had received signed written informed consent regarding publication of current report in medical journal with confidentiality regarding personal information.

AUTHOR CONTRIBUTION

All authors had contributed to manuscript writing and agreed for the final version of publication.

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REFERENCES


