Hybrid approach for chronic limb-threatening ischemia (CLTI): case report

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INTRODUCTION

CLTI is a clinical syndrome defined by the presence of peripheral artery disease (PAD) in combination with rest pain, gangrene, or a lower limb ulceration more than 2 weeks duration. CLTI represents the end stage of PAD. The incidence of PAD is increasing year after year, reaching 202 million people worldwide in 2010 et 236 million in 2015 [1]. CLTI is associated with high morbidity and mortality. The all-cause mortality rate of untreated CLTI reach 22%, the major amputation rate 22%, and the worsened wound or ulcer rate 35% [2]. The risk of amputation is especially present in the 1st year [3].

The management of CLTI is complex due to the extension of the involved lesions. In such cases endovascular combined with open surgical approach may be justified to treat the different levels of the PAD. Results of hybrid treatment are 91% limb salvage at 1 year, 80% survival, 76% amputation-free survival, 87% wound healing and 88% freedom from target lesion revascularization [4].

We present the case of a patient who underwent in the past several bypass procedures in the right lower limb and presented new threatening ischemia. He benefited from hybrid approach.

CASE REPORT

A 74-year-old man presented to the emergency department with W2 I3 fI2 right foot stump (figure 1). He had significant medical past-history: myocardial infarction, stage 3 chronic kidney disease, arterial hypertension, dyslipidemia and diabetes. He had 9 years earlier below the knee femoro-popliteal venous bypass, 7 years earlier femoro-posterior tibial bypass with small saphenous vein graft and transmetatarsal amputation, and 2 years earlier revision of the femoro-posterior tibial bypass using radial artery in the proximal segment and ligation of the superficial femoral artery ostium.

Computed tomography angiography highlighted thrombosis of the femoro-posterior tibial bypass, grade 4 GLASS femoro-popliteal and tibio-peroneal trunk chronic total occlusion (CTO). Run-off vessels were free (figure 2). Through retrograde posterior tibial puncture, we tried to recanalize the CTO but we were not able to get into the common femoral artery because the superficial femoral ostium was ligated (figure 3). We perfomed a short dacron prosthetic bypass between the common femoral artery and the proximal part of the superficial femoral artery (figure 4), followed by stenting of the whole superficial femoral and the proximal third of the popliteal arteries with drug eluting stents. The distal part of the popliteal artery and the tibio-peroneal trunk were treated by plain old balloon angioplasty.

During the follow up, bone infection at the foot stump was treated by 1st metatarsal resection and 6 weeks long antibiotherapy. After 8 months the femoro-politeal axis is patent and the foot stump is healed.

fig. 1

fig. 2

fig. 3

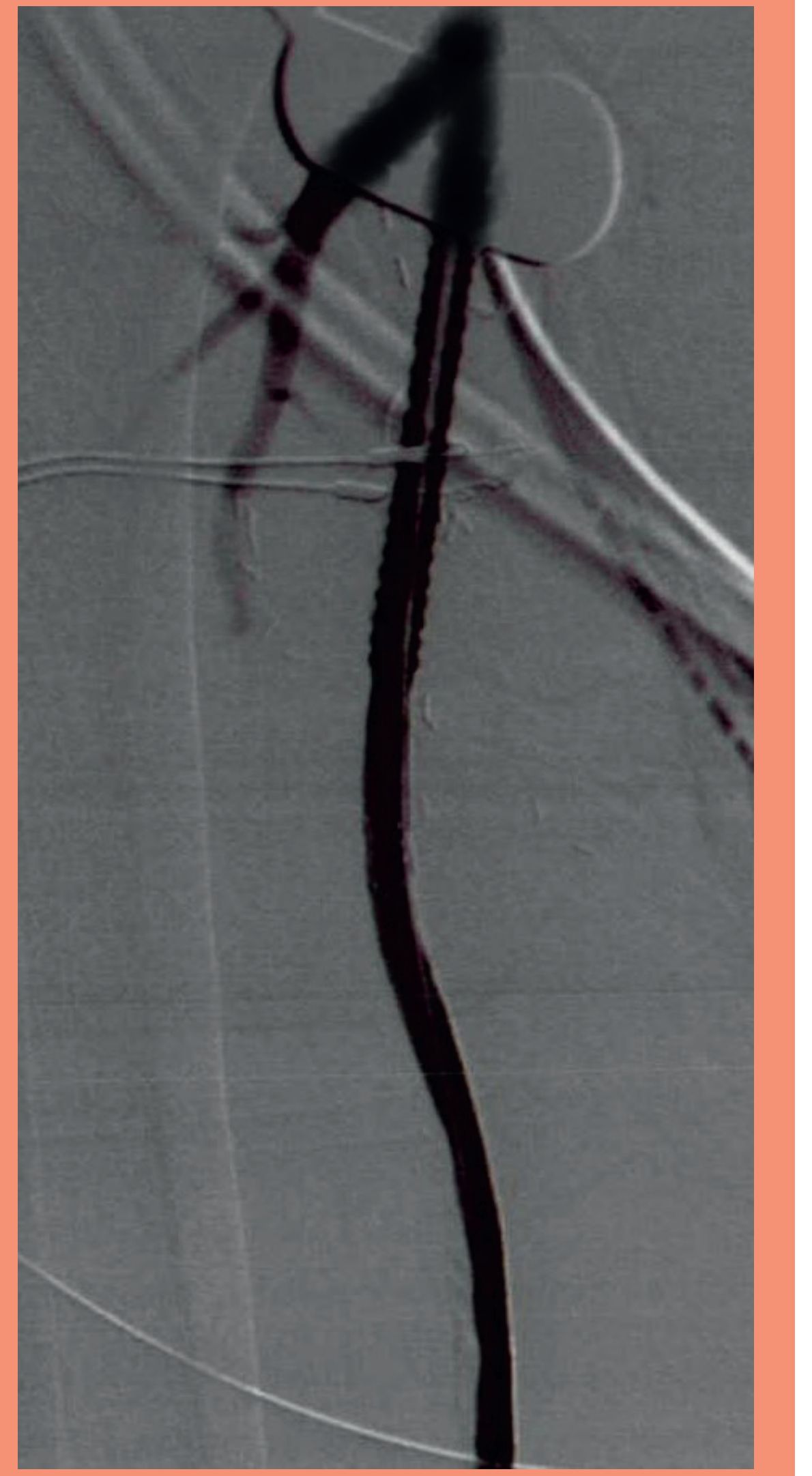

fig. 4

CONCLUSION

Revascularization techniques for CLTI are based on 3 points: patient risk, limb severity and anatomic complexity [5]. Extensive multilevel atherosclerotic disease is frequently associated with multiple medical comorbidities making patients with CLTI high risk for extensive open surgical procedures. Percutaneous treatment not always allow complete revascularization. Hybrid approach may thus be helpful to revascularize CLTI [6].

This case report emphasizes that when open surgery is realized, it is mandatory to avoid any arterial ligation to keep potential future percutaneous treatment feasible.

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