Patient with severe atherosclerosis – can we succeed? Case report

Czy możliwe jest skuteczne leczenie u pacjenta z zaawansowaną miażdżycą obwodową? Analiza przypadku

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ABSTRACT

Peripheral arterial disease (PAD) is a worldwide problem and its prevalence increases with age. Patients with chronic total occlusion (CTO) in lower limb arteries require complex treatment of all cardiovascular risk factors. 66-year old patient with PAD, after several endovascular procedures underwent percutaneous recanalization of CTO in left superficial femoral artery with distal embolization and compartment syndrome as the main complication. After successful treatment patient remains asymptomatic till last follow-up 2 years later.

Key words: atherosclerosis, PAD, peripheral endovascular interventions

Kardiol. Inwazyjna 2018; 13 (4): 18–20

STRESZCZENIE

Miażdżyca zarostowa tętnic kończyn dolnych staje się populacyjnym problemem, a jej częstość zwiększa się wraz z wiekiem. U pacjentów z przewlekłą okluzją w zakresie tętnic kończyn dolnych kompleksowe leczenie zmian miażdżycowych oraz leczenie nastawione na ograniczenie czynników ryzyka ma kluczowe znaczenie. Przedstawiony przypadek dotyczy 66-letniego pacjenta z zaawansowaną miażdżycą obwodową, po licznych interwencja wewnątrznaczyniowych, u którego wykonano skuteczną rekanalizację w zakresie przewlekłej okluzji lewej tętnicy udowej powierzchownej, powikłaną dystalną embolizacja oraz zespołem ciasnoty międzypowięziowej. Po skutecznym leczenie pacjent pozostawał bezobjawowy do czasu ostatniej wizyty kontrolnej, około 2 lata po interwencji.

Słowa kluczowe: miażdżyca, miażdżyca obwodowa, przezskórne interwencje obwodowe

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Introduction

Peripheral artery disease (PAD) is a worldwide problem and its prevalence increases with age [1]. Risk factors for PAD are similar to coronary artery disease and includes smoking or diabetes mellitus [2]. Chronic total occlusion (CTO) of arteries above the knee occurs in more than 50% of patients with PAD [3]. and endovascular treatment is a well established method of revascularization. Moreover, patients with CTO lesions needs complex treatment of all cardiovascular risk factors [4].

Case report

We report a case of 66-year old male patient with history of coronary artery disease, peripheral artery disease, diabetes mellitus on insulin, polyneuropathy, hypertension, hypercholesterolemia, renal insufficiency, smoker (50 pack-years); who was admitted to Invasive cardiology Department due to intermittent claudication with walking distance around 100 m, both legs.

Medical history

For the first time, the patient was admitted to the Cardiovascular Department due to the chest pain caused by physical activities in 2012. During hospitalization angiography and percutaneous coronary artery intervention of circumflex artery was done, also during angiography peripheral artery disease was diagnosed for the first time. Since 2012, the patient has undergone several peripheral interventions in right and left superficial femoral artery (Table 1).

Endovascular treatment

On 9th December 2015 patient underwent angiography of the vessels of the lower limb, which showed chronic total occlusion of left superficial femoral artery (LSFA) and left popliteal artery (LPA). During index procedure percutaneous recanalization of LSFA/LPA (with drug-eluting balloon, DEB) was performed in control angiography after recanalization distal embolization occurred (Figure 1). Alteplase infusion and unfractionated heparin infusion (1500 u/h under control of APTT) was administrated.

During night due to severe pain of left limb, the patient was consulted with a vascular surgeon and the medical treatment was continued. One hour later patient reported once again excruciating pain with edema of the left limb. The computed tomography scanning was performed immediately and showed (Figure 2):

— occlusion of the left popliteal artery at the level of the knee joint;

— extravasation of the contrast;

— occlusions of proximal parts of arteries below the knee;

— compartment syndrome.

The patient was consulted with a vascular surgeon and admitted to the vascular surgery department. On 11th December 2015 patient underwent

Table 1. Patient's history of endovascular treatment of peripheral artery disease

Localization of peripheral intervention	Type of treatment	Date
RSFA	PTA + stent implantation	07.2013
LSFA	PTA + stent implantation	11.2013
LSFA	PTA+ DEB+stent implantation	03.2014
LSFA	PTA + DEB	05.2014
LSFA	PTA + DEB	06.2014
LSFA	PTA+ DEB+stent implantation	07.2014
RSFA	unsuccessful CTO recanalization	01.2014
RSFA	PTA + stent implantation	08.2014
RSFA	retrograde recanalization	06.2015
RSFA	PTA+ DEB	09.2015

RSFA — right superficial femoral artery, LSFA — left superficial femoral artery, PTA — percutaneous transluminal intervention, DEB — drug-eluting balloon

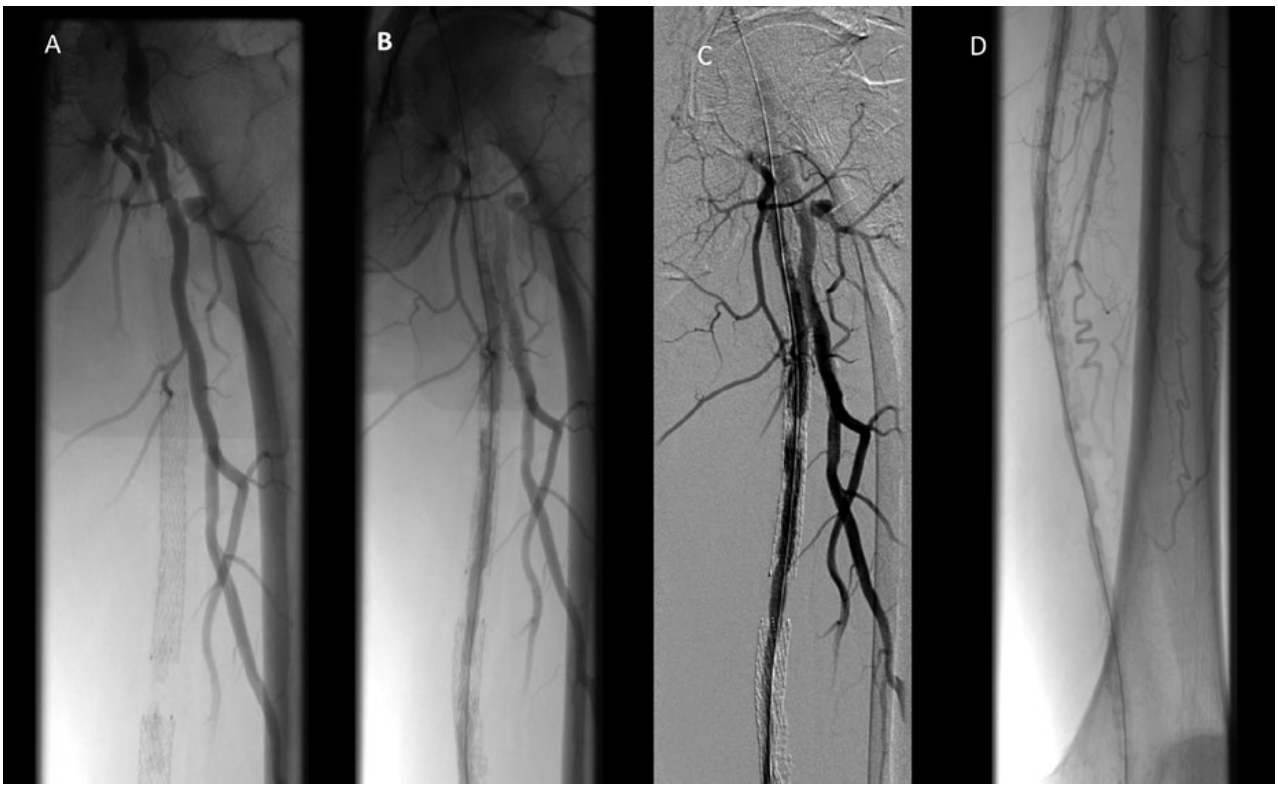

Figure 1. Angiography and recanalization of left superficial femoral artery with distal embolization. **A.** angiography, **B.** and **C.** recanalization, **D.** final effect

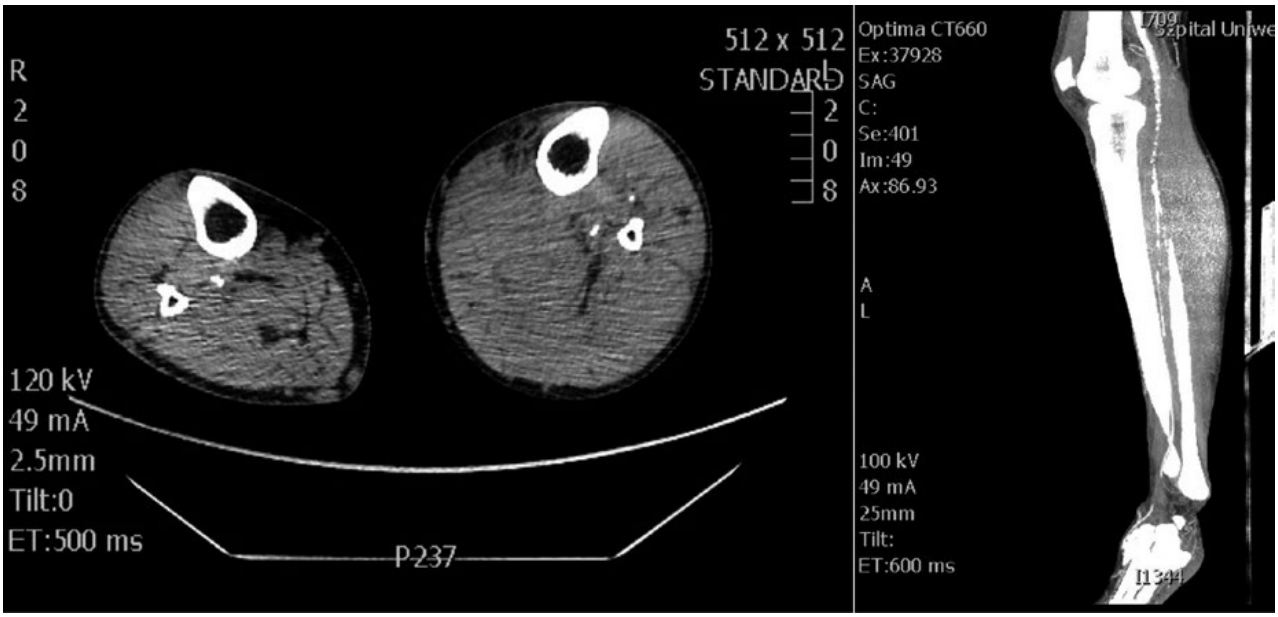

Figure 2. Computed tomography scan of lower limb after recanalization: occlusion of left popliteal artery at the level of knee joint, compartment syndrome

angiography and PTA of popliteal artery (with DEB) and a few days later was discharged home.

Since that hospitalization patient maintained in ambulatory care, he was physically active, and he quit smoking. Last follow-up visit was performed in March 2018, and the walking distance in this patient is now 3000 meters.

Conclusions

In this case, despite complications and 6th reinterventions in LSFA, final endovascular treatment occurred to be successful in treatment PAD. Physical activity and discontinuation of smoking can prolong patency of treated artery.

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