



Case report

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Leriche syndrome with coronary artery disease and lower limb gangrene: two case reports

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ABSTRACT

Leriche syndrome is characterized by atheromatous occlusion of the infrarenal aorta, common iliac arteries or both. Considering the epidemiological transition recently observed in some low/ middle income countries, primary prevention of peripheral arterial disease progression is of utmost relevance. We described two cases of severe Leriche syndrome in clinical situations of high complexity with fatal outcomes. The simultaneous presence of clinically relevant atherosclerotic lesions in two major vascular territories, requires attention not only on lesion sites and inherent invasive procedures technical difficulties, but also on the cardiovascular risk factors and comorbidities. The remarkable feature is the existence of diffuse atherosclerosis and comorbidities whose severity conditioned deference and complications of the vascular lesion treatment. Leriche syndrome has an important impact on cardiovascular and overall mortality. This case report highlights the need of re-thinking established approach to atherosclerotic disease, especially in countries with limited resources.

1. Introduction

Leriche syndrome is characterized by atheromatous occlusion of the infrarenal aorta, common iliac arteries or both.

Few data regarding the burden of peripheral arterial disease (PAD) in African countries were found. In a South African urban population above 50 years PAD prevalence was estimated at 29.3%[1]. A population-based study in central Africa highlights the elevated prevalence of PAD in the elderly, 15.0% in Bangui and 32.4% in Brazzaville[2]. Considering the epidemiological transition recently observed in some low/ middle income countries, primary prevention of PAD progression is of utmost relevance.

2. Case report

2.1. Case one

A 62-year-old black woman presented in the emergency department with complaints of right foot pain at rest for one week, exertional dyspnea and chest discomfort. She also reported intermittent claudication and paresthesias on the right lower limb. The patient was a former smoker without regular medical assistance

and had arterial hypertension, previous inferior myocardial infarction with dilated cardiomyopathy, diabetes mellitus, dyslipidemia, hyperuricemia and strong family history for cardiovascular disease. She had clinical signs of pulmonary edema. The lower pulses at left side were weak. On the right side, she had absent pulses with necrosis of the third and fourth toes. Transthoracic echocardiography revealed poor left ventricular systolic function. Doppler ultrasound revealed: 1) lower limbs with multisegmentar atherosclerosis, 74% stenosis of right femoral artery and occlusion of right tibial arteries; 2) in abdomen, prebifurcation aortic ectasia and intraluminal thrombus; 3) carotid arteries with several atheromatous plaques. CT angiography revealed aortic aneurysms (in thoracic and infrarenal segments) with thrombus, extending up to the iliac arteries. Diffuse atherosclerosis with occlusion of the right common iliac artery (image, arrow) and significant stenosis of the infrarenal aorta and the right femoral artery (Figure 1). Cardiac catheterization by right brachial artery revealed occlusion of the brachiocephalic trunk. Eighty percent stenosis of the left anterior descending artery, occlusion of the left circumflex artery obtuse marginal and the right coronary artery ostium. The presence of three vessel coronary artery disease and a threatened right lower limb required two major surgeries, for coronary and peripheral revascularization, respectively. The case complexity was further increased by her clinical condition with left ventricular dysfunction and high cardiovascular disease risk. Following adequate preoperative care, in the operating room and prior to chest incision, the patient initiated runs of ventricular tachycardia, her general condition rapidly deteriorated, culminating in cardiogenic shock and death.

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Figure 1. Diffuse obliterative and multisegmentar atherosclerotic disease with occlusion of the right common iliac artery (arrow) and significant stenosis of the infrarenal aorta and the right femoral artery.

2.2. Case two

A 71-year-old black woman presented cyanosis, coldness and intense rest pain in left lower limb, which had begun ten days before. She had a stent in the left femoral artery, missed follow-up assistance and was not taking any medications. On clinical examination, she was dehydrated, oliguric, pale, polipneic with sustained hypothermia, increased capillary refilling time and audible bilateral pulmonary snores. She also had an absent left femoral pulse, and bilaterally, absent popliteal, tibial and dorsalis pulses. Dry gangrene of the left foot with foul-smelling odor, loss of substance and bone exposure from the first to the third left toes. The remaining toes, bilaterally, had necrosis. Laboratory findings revealed leukocytosis, hyperlactatemia, elevated plasma C-reactive protein and creatinine. Thorax X-ray revealed mild right pleural effusion and cardiomegaly at the expense of the left ventricle. The patient was admitted with the diagnosis of distributive shock in the context of left foot gangrene and severe ischemic lesions bilaterally due to lower limb chronic PAD. Abdominal CT angiography revealed atheroma plates in the infrarenal aorta, extending to common and external iliac arteries. The patient was subjected to left limb above-knee amputation. Following the surgery, her neurological and respiratory functions deteriorated, there was bleeding from the surgical wound requiring reoperation for bleeding restraint. The multiorgan failure was sustained and the patient died on the seventh day of hospitalization.

3. Discussion

We report two cases of a common entity, atherosclerosis. The remarkable feature is the diffuse atherosclerosis and comorbidities whose severity conditioned deference and complications of the vascular lesions treatment. The goals of PAD treatment include reducing cardiovascular risk and improving functional capacity[3]. The simultaneous presence of clinically relevant atherosclerotic

lesions in two major vascular territories, requires attention not only on lesion sites and inherent invasive procedures technical difficulties, but also on the cardiovascular risk factors and co-morbidities[4]. There is no consensus on the management of patients presenting both with coronary artery disease and peripheral arterial disease. The coronary artery surgery study registry suggests a beneficial effect of coronary bypass prior to non-cardiac surgery[5]. In the first patient we proposed the coronary revascularization as the first procedure. However, she developed a non-previously registered event and her poor functional reserve may have contributed to rapid clinical condition deterioration.

Clinical manifestations of PAD limited to the lower limbs may also have high mortality, particularly in elderly patients with shock or requiring major amputation, as reported in the second case. She had multiple factors for an acute ischemia, including thrombosis of previous stenotic arteries, stent thrombosis and arterial embolism. The prognosis was further worsened by the distributive shock and post-operative bleeding. Described risk factors for early mortality following lower limb amputation include congestive heart failure, preoperative non-ambulatory status, proximal levels of amputation and sepsis[6].

Risk factors control strategies have reduced the worldwide burden of cardiovascular disease. Although there were known risk factors and previous cardiovascular events, both patients were not under regular medical assistance. In health care settings of low/ middle income countries other factors may be associated with poor outcomes. Educational, cultural and socioeconomic constraints may cause misperceptions, delay the recognition of illness or lead individuals to miss services from which they could benefit[7]. This context suggests the need of re-thinking established approach to atherosclerotic disease, especially in countries with limited resources, where patients may present with advanced leriche syndrome and severe untreated comorbidities, at admission. Leriche syndrome has an important impact on cardiovascular and overall mortality. Physicians should be aware of this syndrome to promote early treatment and prevent atherosclerosis progression.

Conflict of interest statement

We declare that we have no conflict of interest.

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