

## CASE REPORT

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# Severe difficulties in management of rare aortoiliac occlusive disease in patient with comorbidity in primary health care. Is Leriche syndrome unrecognized enough? A case report

Zvonimir Bosnic, Bozidar Kovacevic, Domagoj Vucic,  
Stjepan Kovacevic, Nikica Marinic, Silva Guljas,  
Ljiljana Trtica Majnaric

## ABSTRACT

**Introduction:** Leriche's syndrome, as a relatively rare aortoiliac occlusive disease, presents big challenge in every day practice because precise prevalence and incidence are still unknown. Identifying peripheral arterial disease (PAD) presents a challenge, as in 10% of patients, it may be asymptomatic and unrecognized. It is known that the prevalence of PAD increases in aging populations, and nowadays there are many diagnostic tests which are conducted in a number of different settings by health care professionals with varying experience of using assessment tools. There is lack of awareness of this rare condition in general practitioner (GP), and we report this case in order to highlight the importance of complex thinking of pain and claudication in family medicine practice in patients with comorbidity.

Zvonimir Bosnic<sup>1,2</sup>, Bozidar Kovacevic<sup>3</sup>, Domagoj Vucic<sup>3,4</sup>, Stjepan Kovacevic<sup>3</sup>, Nikica Marinic<sup>4</sup>, Silva Guljas<sup>2</sup>, Ljiljana Trtica Majnaric<sup>2,5</sup>

**Affiliations:** <sup>1</sup>Private Family Medicine Practice, Slavonski Brod, Croatia; <sup>2</sup>Department of Internal Medicine, Family Medicine and the History of Medicine, Faculty of Medicine, Josip Juraj Strossmayer University of Osijek, Osijek, Croatia; <sup>3</sup>General Hospital Dr. Josip Bencevic, Slavonski Brod, Croatia; <sup>4</sup>Postgraduate Interdisciplinary University Study – Molecular Biosciences, University of Josip Juraj Strossmayer, Osijek, Croatia; <sup>5</sup>Department of Public Health, Faculty of Dental Medicine and Health, Josip Juraj Strossmayer University of Osijek, Osijek, Croatia.

**Corresponding Author:** Zvonimir Bosnic, MD, PhD Student, Private Family Medicine Practice, Vatroslava Jagica 66B, Slavonski Brod 35 000, Croatia; Email: zbosnic191@gmail.com.

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**Case Report:** A 56-year-old male, with a previous history of arterial hypertension, diabetes mellitus type 2, hyperlipidemia, nicotine use, and chronic obstructive pulmonary disease (COPD) presented to family medicine doctor with symptoms of strong pain and claudication in legs. Due to physical examination, the patient was admitted to emergency department for evaluating the onset of impalpability of bilateral femoral pulses. In order to define impalpability of femoral pulses, color Doppler imaging was performed, which confirmed stenosis. Computed tomography (CT) confirmed occlusion of the abdominal aorta and iliac arteries known as aortoiliac occlusive disease.

**Conclusion:** There is lack of current clinical guidelines which provide a practical framework for managing multimorbidity. In order to early detection of PDA, GPs must be aware that limited evidence suggests that all diagnostic tools accurately diagnose severity of PAD. There is need for developing register of rare condition for primary care to expand its role in prevention, early detection and control, and management within in rare vascular disorder.

**Keywords:** Aortoiliac occlusive disease, Leriche syndrome, Management of rare disease, Multimorbidity, Primary health care

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## INTRODUCTION

Peripheral arterial disease (PAD) presents a cardiovascular disease that commonly affects around 14% of patients older than 69 years [1]. Some risk factors are common in pathogenesis of this condition, and include age, course of diabetes and time of duration, blood glucose level, hyperlipidemia, excessive smoking, and hypertension [2]. Previous reports suggest that in more than 50% of these patients, metabolic syndrome is present [3]. Patients in age 50 and more suffer from more than one diseases, one disorder may represent as early manifestation of another, and sometimes can overlap with many other disorders [4]. Observations of comorbidity among populations may be extremely useful in informing the therapist's understanding of an individual patient, especially in family medicine practice [5]. Identifying peripheral arterial disease can be a challenge in family medicine practice, as in 10% of patients, it may be asymptomatic and unrecognized. It is known that the prevalence of PAD increases in aging populations, and nowadays there are many diagnostic tests which are conducted in a number of different settings by healthcare professionals with varying experience of using assessment tools. Pathophysiology of atherosclerosis states the role of inflammation, characterized by endothelial dysfunction, vascular inflammation, and lipid accumulation in smooth muscle cells and macrophages, which eventually leads to the formation of a plaque in the arterial lumen [6]. Leriche's syndrome, as a relatively rare aortoiliac occlusive disease, presents big challenge in every day practice because precise prevalence and incidence are still unknown [7]. As it presents rare medical condition, diagnostic and holistic approach is very important, and definitive diagnosis must be confirmed by detailed medical history, appropriate physical examination, and diagnostic tools such as ankle-brachial index (ABI) index, color Doppler ultrasonography, and computed tomography angiography [8]. Still, there is lack of awareness of this rare condition in general practitioner (GP). Some studies proved that early intervention and treatment of hypertension and hyperglycemia, and quitting smoking are important in reducing the occurrence of PAD. Although there is no study that shows directly that screening and preventive treatment will reduce complications of PAD, yet a preventive approach in PAD patients is likely to improve overall survival, reduce myocardial infarction (MI), and will, perhaps, also reduce the risk of disabling leg pain and amputation. Current guidelines recommend either endovascular or surgical intervention for patients with severe comorbidities, especially in those who have

significant functional disability that is vocational or lifestyle limiting, who are unresponsive to medical or exercise therapy, and who have a reasonable likelihood of symptomatic improvement [9, 10]. Despite this, there is still lack of increasing forces to develop register of rare condition for primary care to expand its role in prevention, early detection and control, and management within in rare vascular disorder.

## CASE REPORT

A 56-year-old male with a previous history of arterial hypertension for 10 years, diabetes mellitus type 2 for 10 years, hyperlipidemia for 5 years, nicotineism for 30 years, COPD for 5 years, and back pain in last several months, presented to the family medicine doctor with symptoms of pain and claudication in legs in the last two months. Firstly that pain was intermittent, and nowadays it became strong. From his chronic therapy, he was treated with calcium channel blockers, angiotensin-converting enzyme inhibitor (ACEI), Metformin, long-acting muscarinic antagonist (LAMA)/long-acting beta2 agonist (LABA) combination, and nonsteroidal anti-inflammatory drugs (NSAID). His family history was positive for cardiovascular disease (CVD). He was heavy smoker, but he did not consume alcohol drinks. Examination was ambulatory performed and showed impalpability of bilateral femoral pulses with sign of ischemia. Due to physical examination, the patient was admitted to emergency department for evaluating the onset of impalpability of bilateral femoral pulses. Lab tests were performed and showed uncontrolled glucose level, HbA1C 9.0%, low-density lipoprotein (LDL) 4.3 mmol/L, cholesterol level of 8.0 mmol/L. D-dimer level was slightly elevated. Color Doppler ultrasonography was performed and showed no circulation in the iliac arteries. Ankle brachial index was not performed. In order to evaluate cause of ischemia, computer tomography angiography was performed and spotted complete obstructions of the subrenal aorta and bilateral common iliac arteries with collateral circulation, maintaining the vascularization of internal and external iliac arteries. The patient was properly undertaken to surgery treatment. This case highlights the importance of complex thinking of pain and claudication in primary health care in order to emphasize lack of awareness of rare PAD such as Leriche syndrome.

## DISCUSSION

Even though it is known that according to theory of aging, the prevalence of multimorbidity or multiple diseases in the same person increases, there is lack of current clinical guidelines which provide a practical framework for managing multimorbidity [11, 12]. As classic symptoms of Leriche syndrome include pain

in the lower extremities emerging during activity (claudication), impalpability of femoral pulses, and impotency in male patients, sometimes patients can present with overlapping symptoms that could make additional problem in management. In those patients with previous history of metabolic syndrome, who present with sciatica, aortoiliac occlusive disease should be considered [13]. In earlier study, Curt Diehm and his team examined prevalence of peripheral arterial disease and comorbidity in 6880 primary care patients and concluded that patients with PAD were slightly older and suffered from more than three comorbidities (diabetes, hypertension, lipid disorders) [1]. Similar results were given in the study of Lange and his team, who confirmed that the prevalence of PAD was very high in elderly diabetics in comparison to non-diabetics patients [14]. These two studies observed generally PAD, with no focus on rare form such as Leriche syndrome. As it was previous said, those patients with PAD identified in epidemiologic studies have a two- to three-fold risk in CVD morbidity and mortality, and may present with overlapping symptoms [15]. Numerous vascular conditions can mimic the symptoms of Leriche syndrome and must be considered in the differential diagnosis (e.g., arterial dissection and acute paraplegia). Similar situation was described in case report of An et al., who described first case of concomitant acute pulmonary embolism, acute myocardial infarction, and Leriche syndrome [16]. In the literature review, focus was based on the benefit of utilizing an interprofessional team to enhance patient satisfaction as well as health care outcomes, but there were not place of GPs [17]. They play vital role in the management of diabetes and general health overall. In order to early detection PDA, GPs must be aware that limited evidence suggests that Doppler ankle brachial pressure index, toe brachial index, and oscillometric ankle brachial index, accurately diagnose severity of peripheral arterial disease. On the other hand, previous reports suggest that positive ABI index is associated with the risk and development of cardiovascular diseases, overall mortality by as much as 3 times, and mortality from cardiovascular diseases 6 times, especially in excessive smokers and males [18, 19]. For more accurate estimate of extension of peripheral artery disease, computed tomography (CT) is used.

## CONCLUSION

There is important role of GPs in educating patients with confirmed PDA to report any new worrisome symptom, as these could be a significant as predictor of disease progression and requires a multidisciplinary approach. All these steps, may minimize major complications and imitate proper timely treatment, because patients with more comorbidities may present severe difficulties in early detection and management.

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### Author Contributions

Zvonimir Bosnic – Conception of the work, Design of the work, Acquisition of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Bozidar Kovacevic – Conception of the work, Design of the work, Acquisition of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Domagoj Vucic – Conception of the work, Design of the work, Acquisition of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Stjepan Kovacevic – Conception of the work, Design of the work, Acquisition of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Nikica Marinic – Conception of the work, Design of the work, Acquisition of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Silva Guljas – Conception of the work, Design of the work, Acquisition of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

Ljiljana Trtica Majnaric – Conception of the work, Design of the work, Acquisition of data, Drafting the work, Final approval of the version to be published, Agree to be accountable for all aspects of the work in ensuring that questions related to the accuracy or integrity of any part of the work are appropriately investigated and resolved

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Authors declare no conflict of interest.

### Data Availability

All relevant data are within the paper and its Supporting Information files.

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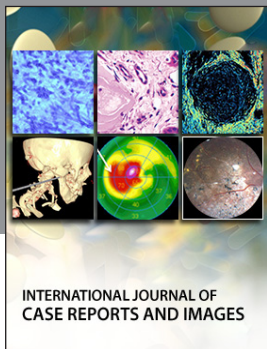
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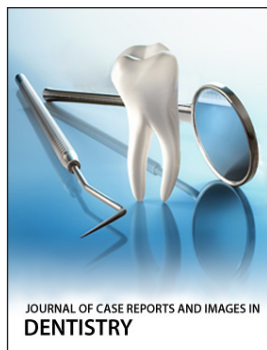
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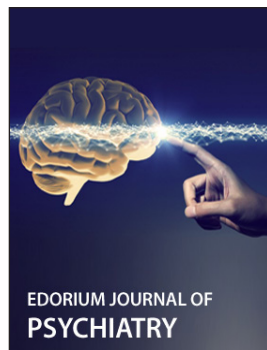
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