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**CLINICAL INFORMATION** 

## Neurolitic block of the lumbar sympathetic chain improves chronic pain in a patient with critical lower limb ischemia

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#### **KEYWORDS**

Intractable pain; Ischemia; Treatment

#### **Abstract**

Background and objectives: Sympathectomy is one of the therapies used in the treatment of chronic obstructive arterial disease (COAD). Although not considered as first-line strategy, it should be considered in the management of pain difficult to control. This clinical case describes the evolution of a patient with inoperable COAD who responded properly to the lumbar sympathetic block

Case report: A female patient, afro-descendant, 69 years old, ASA II, admitted to the algology service due to refractory ischemic pain in the lower limbs. The patient had undergone several surgical procedures and conservative treatments without success. Vascular surgery considered the case as out of therapeutic possibility, unless limb amputation. At that time, sympathectomy was indicated. After admission to the operating room, the patient was monitored, positioned and sedated. The blockade was performed with the aid of radioscopy, bilaterally, at L2-L3-L4 right and L3 left levels. On the right side, at each level cited, 3 mL of absolute alcohol with 0.25% bupivacaine were injected without vasoconstrictor, and on the left side only local anesthetic. The procedure was performed uneventfully. The patient was discharged with complete remission of the pain.

Conclusion: Neurolitic block of the lumbar sympathetic chain is an effective and safe treatment option for pain control in patients with critical limb ischemia patients in whom the only possible intervention would be limb amputation.

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#### PALAVRAS-CHAVE

Dor intratável; Isquemia; Tratamento Bloqueio neurolítico da cadeia simpática lombar melhora dor crônica em paciente portadora de isquemia crítica de membro inferior

#### Resumo

Justificativa/objetivos: A simpatectomia é uma das terapêuticas usadas no tratamento da doença arterial obstrutiva crônica (DAOP). Embora não seja considerada como estratégia de primeira linha, deve ser lembrada no manejo dos quadros de dor de difícil controle. Este caso clínico descreve a evolução de uma paciente portadora de DAOP inoperável que respondeu adequadamente ao bloqueio simpático lombar.

Relato de caso: Paciente do sexo feminino, parda, 69 anos, estado físico II, acompanhada no serviço de algologia devido a dor isquêmica refratária em membros inferiores. A paciente já havia sido submetida a diversas abordagens cirúrgicas e tratamentos conservadores, sem sucesso. A cirurgia vascular considerou o caso como fora de possibilidade terapêutica, a não ser amputação do membro. Nesse momento, foi indicada simpatectomia. Após admissão no centro cirúrgico, a paciente foi monitorada, posicionada e sedada. O bloqueio foi feito com auxílio da radioscopia, bilateralmente, nos níveis L2-L3-L4 à direita e L3 à esquerda. Do lado direito, em cada nível citado, foram injetados 3 mL de álcool absoluto com bupivacaína 0,25% sem vasoconstritor e do lado esquerdo somente o anestésico local. O procedimento foi feito sem intercorrências. A paciente recebeu alta com completa remissão da dor.

Conclusão: O bloqueio neurolítico da cadeia simpática lombar é uma opção de tratamento eficaz e segura para controle da dor em pacientes portadores de isquemia crítica, nos quais a única intervenção possível seria a amputação do membro.

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#### Introduction

Chronic obstructive arterial disease (COAD) is characterized by a reduced blood flow in the lower limbs arterial beds. It has multiple etiologies, of which atherosclerosis is the most important. Patients with this disease remain asymptomatic until the affected vessel lumen has an obstruction greater than 50%, when an intermittent claudication occurs. In the later stages of the disease, pain at rest, ulcers and gangrene, and critical signs of ischemia occur.<sup>1</sup>

Data from American studies show that a critical ischemia is found in 12% of the adult population and is more common in the elderly and in males. The treatment is based on the revascularization of affected arterial territory, either using open techniques, such as bypass surgery or through endovascular and stenting procedures.3 In some cases, the outcome is poor and it is not possible to re-establish adequate blood flow. Fortunately, less than 10% of patients with critical lower limb ischemia (CLI) require amputation. <sup>4</sup> The recommended treatment aims to relieve symptoms and consists of the use of analgesics, prostaglandins and stem cells, the latter two remain experimental.<sup>5,6</sup> In case of refractory pain, lumbar sympathectomy is recommended. The aim of this article is to report the case of a patient with CLI, successfully treated with neurolitic block of the lumbar sympathetic chain, and perform a systematic review of lumbar sympathectomy as CLI treatment.

#### Case report

JRSB, female patient, Afro-descendant, 69 years-old, presented with systemic hypertension and COAD; monitorated in the algology service due to difficult to treat lower limb pain. The pain was excruciating (numerical verbal scale 10), burning type, more severe to the right, which appeared even at rest and worsened when walking, improving when limbs were outstanding. The physical examination showed non-fixed cyanosis in right toes and absence of popliteal, fibular and tibial pulses in the ipsilateral limb.

The patient had already undergone various treatments, including multiple surgical interventions, such as stenting in common iliac arteries and femoropopliteal bypass in the right lower limb. However, there was no improvement in pain symptoms. He was taken tramadol  $(400 \text{ mg day}^{-1})$ , amitriptyline ( $25 \text{ mg day}^{-1}$ ), gabapentin ( $300 \text{ mg day}^{-1}$ ), and dipyrone (8 g day<sup>-1</sup>). Important to note that the doses of amitriptyline and gabapentin are below those recommended, as the patient had major side effects caused by these two drugs. Arteriography showed right common femoral artery obstruction and ipsilateral occlusion of the superficial femoral artery. Duplex scanning of the venous system showed thrombus in left common and superficial femoral veins and left popliteal vein. Based on the clinical picture, the vascular surgery indicated amputation of the right lower limb due to the technical difficulties of a new revascularization and the possibility of worsening symptoms of contralateral limb, also affected by vascular disease. Due to intractable pain, the algology service suggested lumbar sympathectomy.

After admission to the operating room, the patient was monitored with cardioscopy, pulse oximetry, and noninvasive blood pressure; positioned in the prone position; sedated with 1 mg of midazolam and 50 mcg of fentanyl; and maintained on spontaneous ventilation with O2 supplementation via nasal catheter. Local anesthesia was performed with lidocaine 1%. The blockade was performed with the aid of fluoroscopy, bilaterally, in the L2-L3-L4 levels to the right

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