



**ALTERNATIVE TREATMENT WHEN IMPOSSIBILITY OF ILIAC-FEMORAL
REVASCULARIZATION BY ATHEROSCLEROSIS PLAQUE**

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ABSTRACT

Peripheral obstructive arterial disease (PAOD) is characterized by an obstruction of the peripheral artery usually caused by atheromatous plaques adhered to the intima of arterial vessels, may be silent or present with a variety of symptoms and signs indicative of extremity ischemia. Faced with a case with impossibility of revascularization, the pharmacological use of synthetic prostaglandin, a PGE1 prostaglandin, capable of improving blood flow through direct vasodilation, antiplatelet and also having anti-inflammatory effects, was proposed. We report the case of a 70-year-old woman, diabetic, hypertensive, who presented extreme pain, intermittent claudication for 50 meters, non-fixed cyanosis in the plantar region, without trophic lesions. The possibility of revascularization was ruled out and treatment was started with anticoagulants, synthetic prostaglandin derivatives (prostvasin) and limb heating. The patient had a good evolution with alternative therapies to revascularization, thus avoiding possible amputations.

KEYWORDS: Prostaglandin; Peripheral Obstructive Arterial Disease, revascularization.

INTRODUCTION

Peripheral occlusive artery disease (PAOD), specifically atherosclerotic disease that leads to narrowing of peripheral arteries, can be silent or present with a variety of symptoms and signs indicative of extremity ischemia¹. The clinical manifestations of arterial insufficiency (regardless of etiology) are due to the lack of blood flow to the musculature in relation to metabolism, which results in pain in the affected muscle groups.^[1,2] The presence of an extremity ulcer is one of the most obvious clinical signs that can be caused by ischemia, but other manifestations, such as lameness and pain at rest, should be actively looked for and differentiated from non-atherosclerotic and non-vascular conditions.^[3]

Endovascular therapy has achieved good results in stenosing lesions and short occlusions of the aortoiliac segment, but it still presents limited results in extensive occlusive diseases or in cases in which the common femoral artery is affected.^[1,3] Currently, endarterectomy, iliac-femoral arterial bypass, or even aortofemoral bypass are the procedures most often performed in these cases. However, in some cases, when revascularization is not possible, drug therapy can be tried.^[3,4]

Pharmacological therapies may be useful for patients with peripheral arterial occlusive disease (PAOD) to improve the symptoms of lameness, to promote the healing of ischemic ulcers, or to alter the perception of ischemic pain in patients who are unsatisfactory

candidates or who have failed attempts to revascularization.^[5]

One of the options is synthetic prostaglandin (alprostadil), a prostaglandin PGE1, they improve blood flow through direct vasodilation, antiplatelet and also have anti-inflammatory effects. Intended for the treatment of chronic occlusive arterial disease in stages III and IV (Fontaine classification) in patients ineligible for revascularization or in those whose revascularization was unsatisfactory.^[3,6]

The Fontaine score is based on the patient's symptoms and is widely used in medicine. Stage I corresponds to asymptomatic patients, stage IIa corresponds to intermittent claudication with a walking distance limited to 200 meters and stage IIb corresponds to less than 200 meters. Stage III describes patients with severe PAOD (Peripheral Obstructive Arterial Disease) with pain at rest and stage IV describes patients with trophic lesions (ulcers/necrosis).^[4,7]

Intravenous administration for patients with stage IV chronic occlusive arterial disease is not recommended.^[8]

DOSAGE: The ampoule comes pre-cut right below the blue point (OPC system – one point cut). To break it, you must force this point back. Intra-arterial therapy with synthetic prostaglandin in stages III and IV.^[8]

Dissolve the contents of one ampoule of synthetic prostaglandin lyophile (equivalent to 20 mcg of alprostadil) in 50 ml of saline solution.

The recommended dose for intra-arterial synthetic prostaglandin therapy is 10 mcg over 60 to 120 minutes, with the aid of an infusion pump. If necessary, especially in the presence of necrosis, as long as tolerability is satisfactory, the dose can be increased to one ampoule (20 mcg). The dose is usually one infusion a day. For infusion through an indwelling catheter, a dosage of 0.1 to 0.6 ng/kg/min is recommended, administered with an infusion pump for 12 hours (around ¼ or 1 ½ ampoule of synthetic prostaglandin).

CLINICAL CASE

Female patient, 70 years old, white, hypertensive and diabetic, was admitted to the emergency room of our service complaining of pain in her right lower limb, intermittent claudication for 50 meters. Using losartan, hydrochlorothiazide, gliclazide, AAS. Physical examination of the lower limbs: presence of non-fixed cyanosis in the plantar region, no edema and no trophic lesions, absence of flow on portable Doppler in the anterior and posterior tibialis of both limbs, no signs of pvt. The abdomen was round, painless, without pulsating masses. The ankle-arm index (ABI) was not performed due to the absence of pulse in the bilateral anterior and posterior tibial artery.

Entrance laboratory tests unchanged. We initially opted for angiography (06/18/2020) which showed.

Distal abdominal aorta shows reduced caliber with moderate and calcified atheromatosis, bifurcates and provides: **RIGHT:** Common iliac artery shows moderate obstructive lesion in distal 1/3. Chronically occluded internal iliac artery in the proximal 1/3 without distal rehabilitation. External iliac artery without obstructive lesions. Common femoral arteries without obstructive lesions. Deep femoral artery without obstructive lesions. Superficial femoral artery occluded in its proximal third with important distal rehabilitation for its distal segment, which presents a severe 80% segmental lesion. Popliteal artery shows moderate obstructive lesion in the proximal third. Tibiofibular trunk shows moderate obstructive lesion in the proximal third. Anterior tibial artery exhibits severe obstructive lesion of 99% in the proximal third. Posterior tibial artery occluded in the proximal third without distal rehabilitation. Peroneal artery exhibits mild parietal irregularities.

TO THE LEFT

Common iliac artery occluded in the distal 1/3 with slight rehabilitation distal to the common femoral artery. Chronically occluded internal iliac artery.^[9] Chronically occluded external iliac artery. Common femoral artery exhibits severe diffuse atheromatosis. Deep femoral artery exhibits mild parietal irregularities. Superficial femoral artery occluded at the origin with distal

rehabilitation to the tibiofibular system that presents severe diffuse atheromatosis without opacification of its distal segments.^[10,11,12]

CONCLUSIONS: Peripheral obstructive arterial disease with described anatomoangiographic detail.

TREATMENT / WHAT WAS DONE

We chose to explore the femoral artery of the left lower limb in the operating room, under spinal anesthesia. We made an incision in the inguinal region. Dissection of the left femoral artery. Evidenced hardening of the artery and a large amount of atheroma plaques and calcification of the same, making it impossible to carry out the bypass. Closing by planes and suturing the skin. The incisions were closed and the patient did not need to be referred to the Intensive Care Unit (ICU) and remained hemodynamically stable. The patient evolved satisfactorily from a surgical point of view.^[13,14]

It was proposed for the patient and family to use synthetic prostaglandin 20mcg 1X/ day, for 21 days of 8/8 hours, after checking laboratory tests, specifically liver profile that were compatible with the use of the drug. Kept lower limbs warm with orthopedic cotton. It remained stable in the ward throughout the treatment.^[15] He was discharged after 21 days, with a prescription containing cilostazol 100mg every 12 hours, AAS 100mg once a day, simvastatin 20mg once a day. And outpatient return within 30 days. The patient is at the time of this report with 8 months of evolution, asymptomatic.

DISCUSSION

Surgical arterial revascularization may not always be a viable treatment option due to several factors, including anatomical, clinical and even material condition (lack of available endoprostheses).^[12]

In this way, clinical treatment with synthetic prostaglandin can be used, with the appropriate indication, making the patient have a significant improvement in the pain condition, gain in quality of life and even in the closure of ulcers.^[16]

Emphasizing, however, that the clinical and laboratory conditions must be adequate for this treatment to be really effective with safety and the follow-up followed by appropriate clinical measures for PAOD must be followed correctly. Furthermore, the high cost of the drug can be an important restrictive factor in this type of treatment.^[13]

CONCLUSION

The possibility of revascularization was ruled out and treatment was started with anticoagulants, synthetic prostaglandin derivatives (prostvasin) and limb heating. The patient had a good evolution with alternative therapies to revascularization, thus avoiding possible amputations.

Clinical treatment with synthetic prostaglandin proved to be a viable option in the case described, successfully reaching its proposal, becoming an option to be considered in appropriate cases in which its indication is correct.

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