Saving Lower Limbs with Critical Ischemia using drug eluting balloons in Occluded or Stenotic Infrainguinal Arteries

Jaime H Velez, Vascular Surgery1, Juan P Martinez, Radiologist1, Jose M Gonzalez, Vascular Surgery1 and Viviana Calle, Radiologist1. 1Endovascular therapy and Interventional Radiology unit., Clínica Los Remedios, Cali, Colombia.

PURPOSE

The objective is to describe the clinical evolution of lower limb ischemia in patients with obstruction and /or stenosis of the infrainguinal artery system (IAS) who underwent endovascular therapy (ET) with drug eluting balloons (DEB).

MATERIAL AND METHOD

The study prospectively describes 8 diabetic and non-diabetic patients, admitted to the interventional radiology and endovascular therapy unit at Nuestra Señora de Los Remedios Clinic , between June 2008 and June 2010. The patients presented with critical ischemia of lower limbs secondary to the obstruction and/or stenosis of IAS in stages 5 and 6 according to Rutherford's classification and ankle/braquial index (ABI) < 0.4.The revascularization strategy included an ipsilateral percutaneous anterograde approach to the common femoral artery using 0.14 mm and 0.18 mm straight micro guidewires to pass through the stenotic and obstructed areas. The guidewire was replaced with a 0.35 hydrophilic guidewire. This was followed by an angioplastic procedure using DEB containing Paclitaxel, FreewayTM (Eurocor-CPT Patients were followed up, in order to observe wound healing, pain releave, pulses and limb temperature.

RESULTS

13 IAS revascularization procedures were carried out on 8 patients. All patients received ET using DEB and none of them required stent support. At the time of admission, 7 patients were classified as stage 5 and one patient as stage 6, according to Rutherford's classification. After following up the patients for a period of 2 to 24 months, all patients featured amputation-free survival. All ulcerated lesions healed completely using therapy in a wet medium as a coadjuvant, and patients clinically regained temperature and perfusion of limbs. No immediate complications were reported and patients with an adequate IAS, distal to the lesions, regained pedal pulse, and in all cases the ABI improved to 0.8 (+ 0.2).

CONCLUSION

The usage of DEBs for patients in stages 5 and 6 according to Rutherford's classification with documented obstruction or stenosis of the IAS and associated morbidities such as diabetes, hypertension and/or renal failure is a valid alternative for the management. It allows a more extended permeability of the treated arterial system, thus suppressing pain caused by ischemia, facilitates ulcer healing, and above all avoids amputations.

MOST RELEVANT CASES

Case 1

A 68 year-old male with history of claudication in lower limbs, consulted for a 2 moth of evolution of unsuccessful healing process and pain in the site of amputation of the right 5th toe. He had absence of tibial and popliteal pulses in both limbs, and an infected ulcerate lesion in the area of amputation.
Procedure was carried out with no complications. In a period of 2 month the patient de lesion healed completelly and pcte recovered distal pulses.

A 66-year-old female with history of hypertension, type 1 diabetes and renal failure in treatment with peritoneal dialysis, consulted for an 8 month ulcerated lesion on the right heel associated to necrotic tissue.
Procedure was carried out with no complications nad there was an improvement of de ankle-brachial index (ABI) from 0.5 to 0.75.
In a period of 8 month de patient heeled completely de ulcerated lesion, improved pain and avoid amputation.

Case 2

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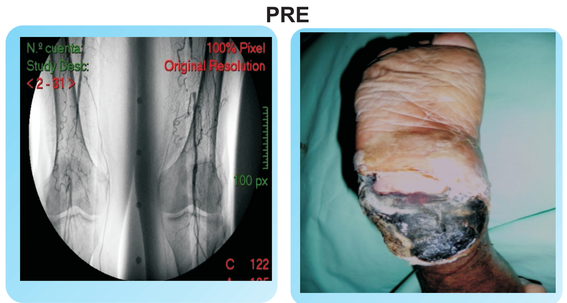

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