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10.20960/angiologia.00617

03/19/2024

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A hybrid clampless technique for aortoiliac derivation as a preparation for renal transplantation

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Recibido: 08/01/2023

Aceptado: 08/01/2023

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Conflicto de intereses: los autores declaran no tener conflictos de interés.

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Artificial intelligence: the authors declare not to have used artificial intelligence (AI) or any AI-assisted technologies in the elaboration of the article.

ABSTRACT

Introduction: renal transplantation is the treatment of choice for end-stage renal failure. Different aortoiliac reconstruction techniques have proven feasible in preparing for renal transplantation in patients with severe aortoiliac atherosclerosis. However, anatomies with heavy circumferential calcifications or shaggy arteries with extensive

thrombus can themselves be a technical contraindication for these reconstructions. The aim of the work is to present a hybrid technique of ilio-femoral bypass performing a proximal anastomosis without clamping the donor artery, serving as an option for renal transplant preparation in these patients.

Material and methods: we present the case of a 73-year-old male with end-stage renal failure deemed unsuitable for renal transplantation due to severe aortoiliac atherosclerosis. After preoperative computed tomography evaluation, he was considered eligible for a left ilio-femoral bypass using a *clampless* hybrid technique. Following dissection of the left femoral tripod, the left common iliac artery was exposed. A small non-calcified window suitable for direct puncture was found in the artery, through which a guidewire was advanced into the aorta under fluoroscopic guidance. Then, a long over-the-wire sheath with the bevelled prosthetic graft around it was inserted. The graft was sutured to the adventitial layer without any arteriotomy or clamping, mimicking the final aspect of a side-to-end anastomosis. The anastomosis was dilated with a balloon and protected with a covered stent from the graft to the aorta. After tunnelling the graft to the femoral artery, the distal anastomosis was performed in the usual fashion.

Results: this technique was successfully used, and the procedure remained patent 10 months later, without any complications related to the surgery. The patient is still waiting for the transplantation.

Conclusions: a hybrid anastomosis technique without clamping is a feasible option in patients with prohibitive atherosclerosis. Long-term durability and transplant outcomes are still unknown.