

Selected Technique

Single-Incision External Iliac Artery Endarterectomy and Patch Angioplasty

James L. Ebaugh,^{1,2} Naren Gupta,^{1,2} and Joseph D. Raffetto,^{1,2} West Roxbury and Boston, Massachusetts

An isolated external iliac artery chronic total occlusion is currently treated either with subintimal percutaneous transluminal angioplasty and stent or with a bypass. This article describes a new application of an old technique, endarterectomy and patch angioplasty, performed on the external iliac artery through a single flank incision. This novel approach can provide lasting patency with a low risk of complications. We present four cases and a review of the literature on the other available treatment options. This minimally invasive technique may provide a viable alternative that can be used alone or in combination with other open or endovascular techniques and can be applied in cases of groin sepsis.

INTRODUCTION

With the advent of endovascular and minimally invasive techniques, treatment algorithms for chronic lower extremity occlusive disease are constantly being modified. An isolated external iliac artery (EIA) chronic total occlusion (CTO) is currently treated with subintimal percutaneous transluminal angioplasty and stent (PTAS), aortoiliac femoral bypass, or extra-anatomic femorofemoral or axillofemoral bypass. We propose a new application of an old technique, endarterectomy and patch angioplasty (EA/PA).¹ Simple isolated EIA EA/PA through a single flank incision can provide lasting patency with a low risk of complications. It provides a viable alternative that can be used alone or in combination with other open or endovascular techniques for multilevel revascularizations. In selected

patients, our approach may give a better and longer-lasting result than current alternatives.

INDICATIONS FOR TREATMENT AND PATIENT SELECTION

The key to successfully performing the proposed surgical technique is attention to the specific arterial anatomy of the individual in need of a lower extremity arterial reconstruction. It can be applied to both EIA CTO or diffuse EIA stenosis involving the distal EIA. We believe patients with a stenosis localized to the proximal half of the artery are best served using a percutaneous technique.

To avoid a second incision in the groin, it is essential to have at least 1 cm of widely patent distal EIA, just proximal to the epigastric and circumflex iliac arteries (Fig. 1); otherwise, the proximal common femoral artery (CFA) cannot be controlled through the flank incision. The ipsilateral common iliac artery (CIA) must be both clampable and free of significant occlusive disease to lower the risk of recurrent symptoms or acute thrombosis. Preoperative noncontrast computed tomography can help determine the extent of mural calcifications. If there is circumferential CIA calcification making the artery unclampable, this technique may not be feasible.

¹VA Boston Healthcare System, Surgical Service, West Roxbury, MA.

²Division of Vascular and Endovascular Surgery, Brigham and Women's Hospital, Harvard Medical School, Boston, MA.

Correspondence to: James L. Ebaugh, MD, VA Boston Healthcare System, Surgical Service (112), 1400 VFW Parkway, West Roxbury, MA 02132, USA, E-mail: james.ebaugh2@med.va.gov

Ann Vasc Surg 2011; 25: 1165-1169

DOI: 10.1016/j.avsg.2011.05.032

© Annals of Vascular Surgery Inc.

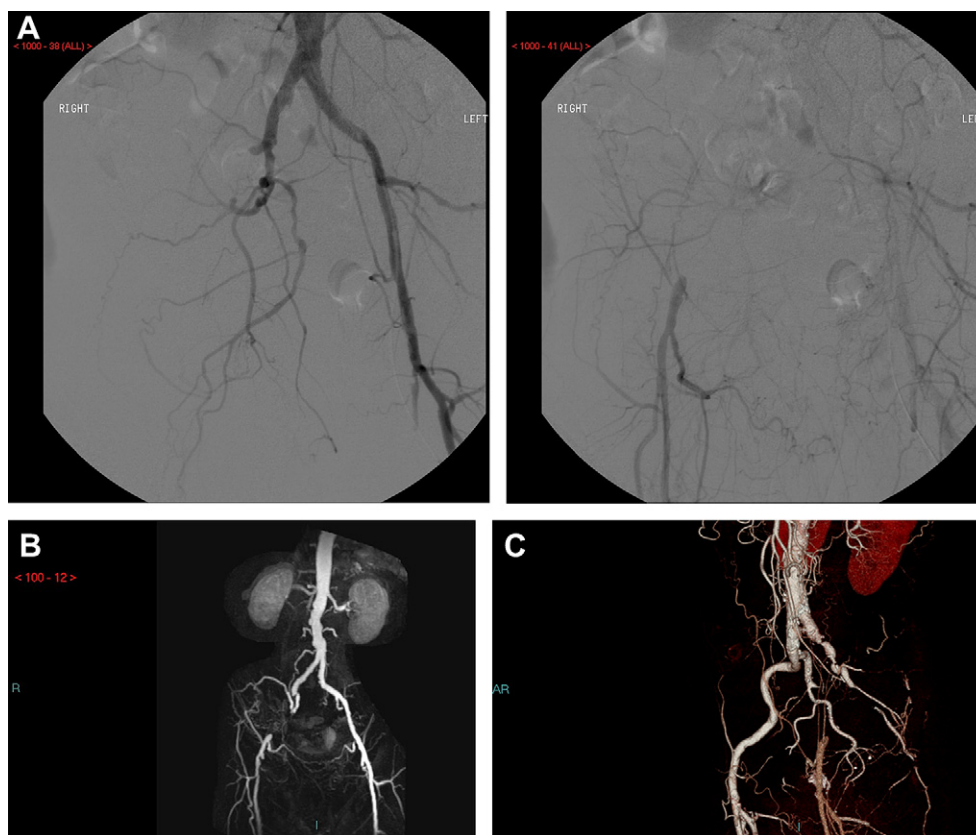


Fig. 1. Preoperative angiograms (A-C). Notice external iliac artery (EIA) chronic total occlusion, as well as proximal and distal stumps, making them ideal anatomic candidates for this technique.

OPERATIVE TECHNIQUE

Surgery is performed in a supine patient under general anesthesia. The skin incision is a standard right or left lower quadrant oblique retroperitoneal incision 10-15 cm in length, dependent on the patient's size (Fig. 2). The rectus muscle is preserved, if possible, by retracting the rectus medially and then splitting the internal oblique and transversus abdominis muscles along their fibers. Careful attention to preservation of the abdominal musculature minimizes the risk for postoperative hernias and maintains the patient's abdominal muscle strength. The retroperitoneal plane is entered, and the peritoneal contents are reflected medially to expose the psoas muscle and EIA (Fig. 3).

The entire proximal and distal EIA is exposed using a self-retaining retractor, such as an Omni-Tract® system (Omni-Tract Surgical, St. Paul, MN). Dissection of the artery extends from the mid CIA to the proximal CFA. Owing to the 12-15 cm of dissected artery needed to perform a 9-10 cm arteriotomy, the retractor may need to be repositioned at least once. The CIA and internal iliac (IIA) arteries are encircled with loops; then, the

retractors are repositioned to expose the proximal CFA, lateral circumflex iliac, and epigastric arteries, which are also looped (Fig. 4). A renal vein retractor facilitates exposure of the proximal CFA by elevating the inguinal ligament. If the proximal CFA cannot be exposed, a separate femoral incision must be made, and this single-incision technique cannot be performed.

The arteriotomy is made in the proximal EIA and is continued distally after the retractors are repositioned. The proximal plaque end point, either in the distal CIA or proximal EIA, is cut transversely, and if the origin of the IIA is visible, endarterectomy can be performed using the eversion technique. In our experience, the plaque is not densely adherent to the EIA adventitia and easily lifts off from the medial endarterectomy plane. If this maneuver thins the wall excessively, this single-incision technique may not be possible, and an alternative technique, such as an interposition graft or bypass, would need to be performed. One advantage of performing an endarterectomy instead of an interposition graft is that the distal anastomosis, especially the back wall, would be difficult to visualize in the field when not under some tension by the artery.

Download English Version:

<https://daneshyari.com/en/article/2887807>

Download Persian Version:

<https://daneshyari.com/article/2887807>

[Daneshyari.com](https://daneshyari.com)