

# Treatment of Infrarenal Penetrating Aortic Ulcer with Large Diameter Balloon-Expandable Stent-Grafts

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## Objective:

In contemporary practice, the treatment of infrarenal penetrating aortic ulcers (iPAUs) predominantly involves endovascular approaches, utilizing standard infrarenal devices or iliac limbs. This approach often results in the overtreatment of a highly localized aortic lesion. The BeGraft aortic stent, developed by Bentley (Hechingen, Germany), represents a pragmatic solution for addressing these cases, functioning as a balloon-expandable covered stent. BeGraft aortic stent graft consists of cobalt-chromium (CoCr) stent, fully covered with ePTFE. This study aims to present and elucidate the application of large diameter balloon-expandable stent-grafts in the management of iPAUs.

## Methods:

A 73-year-old female patient with a history of recent angioplasty of the right superficial femoral artery and posterior tibial artery for critical limb ischemia. During angiography, an iPAU was found with 65.9 mm<sup>2</sup> with maximum diameter of 11.1 mm, with a PAU base of 20mm, located 46 mm from the lowest renal artery and 15 mm from the aortic bifurcation (Figure 1).

## Results:

Percutaneous bilateral femoral access was obtained, with a 12 French sheath at the right femoral site. Next, a Lunderquist guidewire was used for support, followed by the deployment of two 14 x 39 mm Bentley aortic stents. A catheter and guidewire were in a crossover position during deployment. No endoleak or aortic rupture in the final angiogram in a 35 min procedure (Figure 2). At 1 year follow-up, the patient did not experience reintervention, endoleak, thrombosis, stent fracture, death or vascular-related reinterventions.

## Conclusion:

The utilization of BeGraft aortic stent-graft therapy for treating iPAU in specific patients has been found to be viable with a low incidence of perioperative morbidity and mortality. Balloon-expandable stent-grafts offer the advantage of effecting repairs on iPAUs in a shorter duration, and they facilitate shorter aortic coverage while utilizing a low-profile sheath. This enables treatment in the presence of small access vessels and short distances to aortic bifurcations.

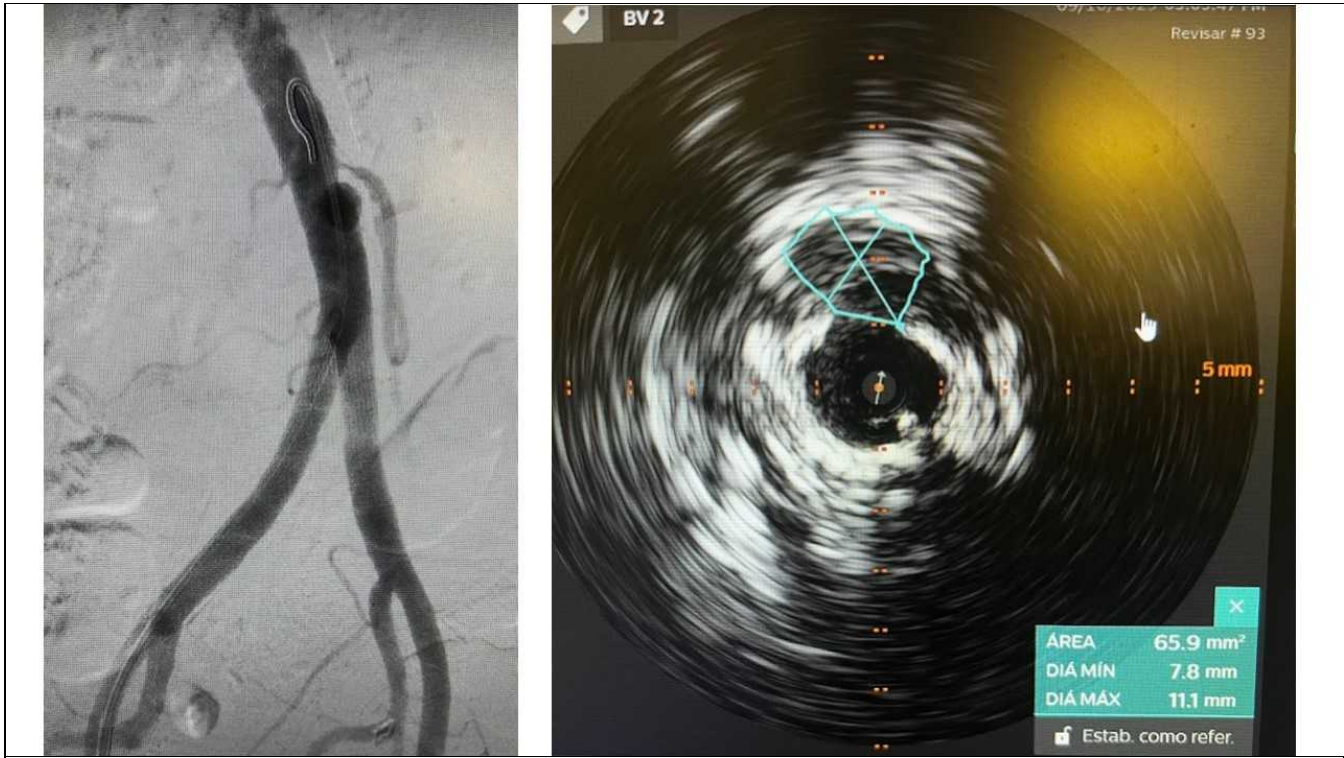


Fig 1 Initial angiogram of index procedure and intravascular ultrasound of iPAU



Fig 2 Completion angiogram