

Use of balloon-expandable stents to support the efficacy of ultra-low profile endografts in the treatment of abdominal aortic aneurysms with challenging iliac anatomy

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Dear Editor,

We read with great interest the article by Mazzaccaro et al. (1) reporting on early results of ultra-low profile endografts, for which the authors should be congratulated. In quest of broadening the instructions-for-use range of endografts to treat abdominal aortic

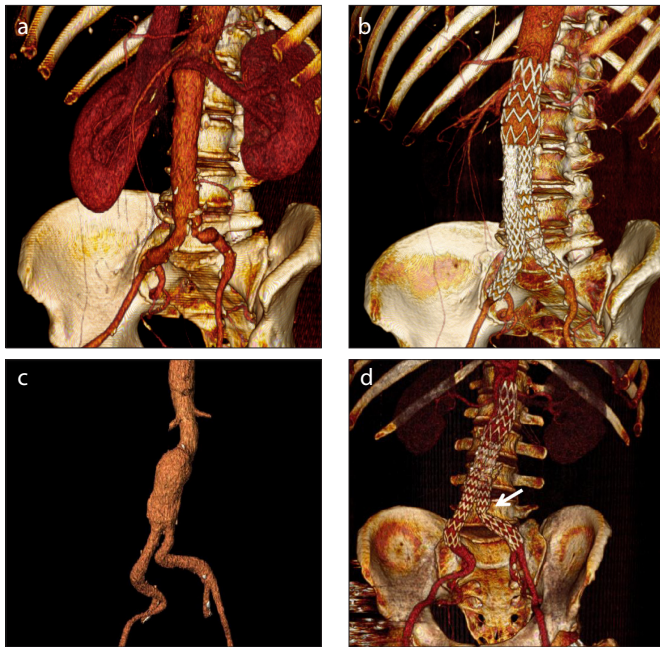


Figure. a–d. Computed tomography angiography (CTA) image (a) of an abdominal aortic aneurysm with stenosis and severe angulation of the left common iliac artery. After deployment of an Incraft trimodular low-profile endograft (Cordis Incraft, b), persistent angulation and stenosis of the iliac limb necessitated additional support via a 10 mm × 36 mm balloon expandable stent, deployed at the same time and resulting in straightening of the iliac axis. Image (c) shows another example of a Cordis Incraft endograft used for the treatment of an abdominal aortic aneurysm of 60 mm with marked angulation of the left common iliac artery in a 66-year-old patient. Deployment of the left iliac limb was followed by prolonged ballooning at the site of the angulation to abate the latter. At 1-month follow-up (d) the CTA image reveals persistence of the angulation (arrow), reducing the lumen of the iliac limb and weakening the femoral pulses on the left. Under local anesthesia, the patient received percutaneously a 10 mm × 36 mm balloon expandable stent that straightened the segment resulting in augmentation of the femoral pulses.

aneurysms (AAA), current modifications focus on down-sizing the delivery profiles, thus enabling passage and navigation not only through narrower iliac vessels, but confronting also highly angulated and/or tortuous vessels successfully (2). The INNOVATION trial reported very satisfactory results in the 4-year follow-up of 60 patients; however, only a minority (7%) of patients presented with severe iliac tortuosity (3). Admittedly, in current “real-world” practice many clinicians tend to use other well-established endografts that they are more familiar with, reserving the novel ultra-low profile devices for AAA of challenging iliac anatomies, as described above. A recent review by Mantas et al. (4) identified the presence of significant angulation and calcification of the iliac arteries as well as excessive limb oversizing as independent predictors of endograft limb occlusion after endovascular aneurysm repair (4). Therefore, although most physicians’ preference support the use of ultra-low profile endografts in such cases, we would strongly advocate the routine use of a balloon-expandable stent support to avoid compression of the iliac limbs in cases of tight aortic bifurcation or severe iliac angulation/tortuosity, as illustrated in the example (Fig.). We believe that this strategy would further guarantee the long-term clinical efficacy of ultra-low endografts in challenging iliac anatomies.

Conflict of interest disclosure

The authors declared no conflicts of interest.

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Dear Editor,

We appreciate the comments by Georgakarakos and Koutsoumpelis (1). We are glad that article on early results of ultra-low profile endografts has attracted attention from the readers of *Diagnostic and Interventional Radiology*. We agree with the Authors that ultra-low profile (ULP) endografts often lack radial strength in the iliac limbs, and this could represent a risk factor for either branch stenosis or occlusion, especially in case of a very tortuous and calcified iliac axis or a tight aortic bifurcation. The use

of balloon-expandable stent (BES) may represent a solution to increase stability and durability of the implant. Prophylactic adjunctive proximal BES has been used with good results to support endovascular aortic repair (EVAR) in patients with hostile neck anatomy (2), as well as for chimneys during EVAR of juxtarenal aortic aneurysms with unfavorable anatomy (3). In a similar manner, BES could be used as a support to avoid compression of the iliac limbs in cases of tight aortic bifurcation or severe iliac angulation and tortuosity. In our experience with the use of ULP endografts, we also had a case of intraoperative iliac limb stenosis, in a patient with severely calcified and small iliac vessels. Several balloon angioplasties were repeated but the patient eventually required immediate conversion to open surgery and limb removal for persistent stenosis at the origin of the left limb, which appeared shrunk due to extrinsic compression by the contralateral limb (4). Before converting to open surgery, we hypothesized to put a BES to support the compressed leg. However, we encountered extreme difficulty with the ascent of the balloon and probably even a BES would not have fixed the problem, which may have been caused by the use of iliac limbs with excessive oversizing in a narrow aortic bifurcation. There-

fore, we agree with the authors that BES can be used as a support for ULP endografts in case of challenging iliac anatomy, but bearing in mind that a careful preoperative patient selection is the most useful strategy to improve long-term durability of EVAR.

We appreciate the authors' interest in this article.

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