Supplementary data

Supplementary Appendix 1. Ovation stent graft characteristics

Suprarenal stent and anchors are responsible for graft fixation, while sealing is provided by inflatable rings filled with a low-viscosity, non-embolic, radiopaque fill polymer. The presence of the polymer-filled network also allows the graft to conform to the patient's aortic neck, providing a precise and reliable sealing in a great variety of anatomies. Different from common stent graft platforms, separation between fixation and sealing ensures that in the Ovation stent graft and fabric do not compete for the same space within the shaft and an ultra-low-profile delivery system can be used, allowing the treatment of patients presenting with a wide range of iliac access.

Supplementary Appendix 2. Description of Ovation stent graft implantation technique

Subsequent to femoral access, the tri-modular stent graft was delivered and deployed in three stages: unsheathing the main body, deploying the suprarenal bare metal stent, and injecting the amount of polymer needed to expand the stent-graft main body rings that subsequently conform to the aortic neck (so-called "customised proximal sealing"). The iliac rings along the main body provide support for the ipsilateral and contralateral iliac extensions. In accordance with the IFU, the extra-support guidewire was partially retracted during polymer delivery, in order to allow the stent graft to conform to the native aortic anatomy. The contralateral gate was usually engaged during polymerisation time. The iliac limbs were subsequently deployed. In all cases, a kissing balloon angioplasty to achieve optimal sealing between the main body and iliac limbs was carried out, followed by ballooning of the iliac sealing zones. Post-dilatation of the polymer rings was not routinely performed except in case of a type Ia endoleak seen at completion angiography and within 40 minutes from polymer injection. Whenever possible, oversizing was chosen complying with the manufacturer's IFU. Surgical cutdown to the groin and a percutaneous approach were both performed. In case of percutaneous access, haemostasis was achieved using single or double Perclose-ProGlide® (Abbott Vascular, Santa Clara, CA, USA) implantation.

Supplementary Appendix 3. Anatomical characteristics of patients included in present analysis

Mean AAA diameter was 52.96±10.1 mm (range 33-102), mean IR diameter 21.96±3.46 mm (15.9-32), mean IR+13 was 24.24±3.31 mm (18-30), and mean IR+16 was 24.67±4.72 mm (17-33). Mean aortic neck length was 7.75±6.05 mm (1-29.5); in particular, aortic neck length was <10 mm in 86 cases (70.4%), between 5 and 10 mm in 51 (41.8%), and <5 mm in 35 (28.7%). Forty-one patients (33.6%) presented a cylindrical aortic neck, while in 73 (59.83%) treated cases severe calcification and/or thrombosis of the proximal neck was reported.

Mean aortic bifurcation diameter and area were 24.14±8.62 mm (8.1-57.6) and 5.69±4.54 mm^2 (1.1-25.3), respectively. Mean CIA diameters were 14.23±9.77 mm (6-90) and 13.61±8.73 mm (4-77), respectively, on the right and left side; EIA diameters were 7.8±2.07 mm (4.1-7.7) and 7.33±1.59 mm (2-11.1).

Supplementary Table 1. Patient demographics, characteristics and risk factors in the present series.

	Total patients 122
Age (mean±SD)	78.65±7.67
Male sex (n; %)	111; 90.98
Hypertension (n; %)	106; 86.88
Dyslipidaemia (n; %)	85; 69.67
Diabetes (n; %)	78; 63.93
CAD (n; %)	69; 56.55
Smoking (n; %)	83; 68.03
COPD (n; %)	67; 54.91
CRI (n; %)	45; 36.88
PAOD (n; %)	37; 30.32
ASA III/IV (n; %)	32; 26.22

CAD: coronary artery disease; COPD: chronic obstructive pulmonary disease; CRI: chronic renal insufficiency; PAOD: peripheral arterial obstructive disease