

Reconstruction of the Aortoiliac segment in occlusive disease using the AFX® unibody stent

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Introduction

The endovascular era has seen an evolution in the treatment of aortoiliac occlusive disease (AIOD). The high morbidity of open surgical reconstruction means that it is no longer the preferred first line treatment for AIOD in many institutions. Instead, minimally invasive techniques such as kissing iliac stents and complete endovascular reconstruction of the aortic bifurcation (CERAB) are being performed. Although marketed for use in aneurysmal disease of the aorta, the AFX unibody stent provides yet another alternative for the treatment of AIOD. Unlike other treatment options, its deployment allows for a future crossover approach if future of concomitant infra-inguinal disease is required. This large, single-centre case series assesses the outcomes and health economics of aortic bifurcation reconstruction in AIOD using the AFX stent.



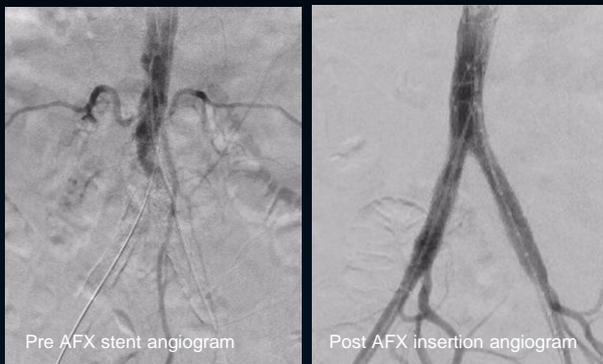
Methods

Between September 2016 and November 2018 all patients with AIOD that presented to our institution with AIOD requiring either aortobifemoral bypass (ABF) or kissing iliac stents extending into the aorta were considered for AFX stenting. Collected were patient demographics, Rutherford classification, operative details including adjunctive treatment required and technical success. Primary outcome was primary patency (absence of >50% stenosis of treated segment with duplex ultrasound or CT imaging) at 12 months with secondary outcomes of 30 day and 12 month mortality, Target Limb Revascularization (TLR), Major limb amputation and other major adverse events. Health economic data was also collected for these patients and those who underwent ABF during the same time period.



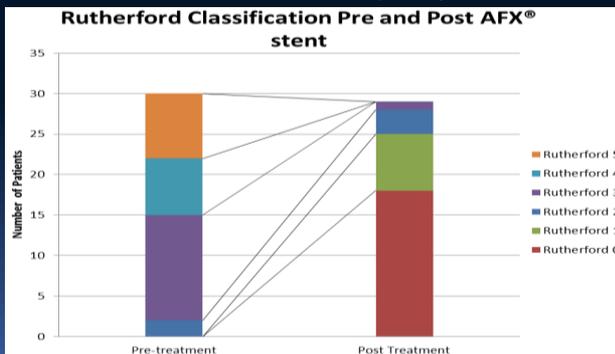
Results

AFX stenting was undertaken in 30 patients (male n=20; female n= 10) with an average age of 69 years. The cohort had strong preponderance to smoking with 77% (23/30) of patients either active or ex-smokers compared to 10% (3/30) with diabetes. 93% (28/30) patients had an American Society of Anaesthesiologists score (ASA) of 3 or greater reflective of significant co-morbid disease. 83% (25/30) patients had TASC D AIOD with the remainder TASC B or C. 73% (22/30) patients required either concomitant common femoral endarterectomy and/or extension of stenting into the external iliac artery reflective of the extensive nature of their AIOD.



Technical angiographic success was achieved in 100% of cases. There were no cases of 30 day mortality. There were two major (embolization) and 7 minor complications. There were 3 cases of mortality in the 12 month follow up, unrelated to stenting. Primary patency at 1 year was 100% (n=14) with TLR and Major limb amputation rate of 0%.

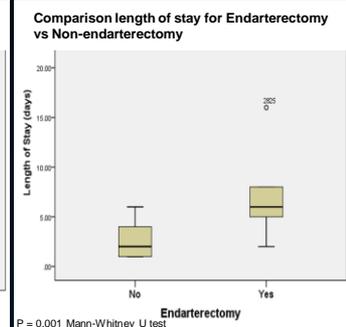
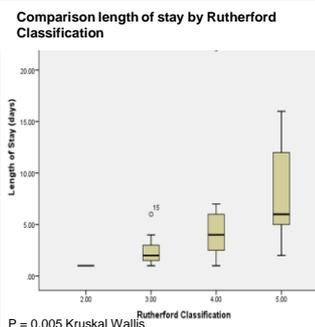
Median length of stay was 3 days for all patients (range 1-22). Mean length of stay and cost for AFX vs ABF was 1.8 ± 0.6 vs 7.4 ± 1.8 days and $A\$17831 \pm 2870$ vs $A\$34044 \pm 5062$ respectively.



Discussion

This is the largest single centre series for the use of AFX in the treatment of AIOD to date. Primary patency at 12 months was 100%. This is comparable to published patency rates [1, 2] and comparable to ABF with an expected 5 year primary of 85-90% [3]. Ongoing surveillance will further help substantiate the claim of good patency.

There was a 0% 30-day mortality compared to a reported mortality rate of 3-5% [3] for open surgical reconstruction with aortobifemoral bypass. Complications rates of 30% were not incongruent with that of other published AFX for AIOD series at 22% [1]. This rate is higher than the quoted 4-12% morbidity rate for ABF [3], however, the complications in this series were comparatively minor and largely related to an open component adjunctive to the procedure. Substantiating this association was an increased length of stay observed in those who underwent concomitant endarterectomy and those with Critical limb ischemia as opposed to Claudication (fig 1, 2). Compared to ABF, AFX had a significantly decreased length of stay and cost.



Conclusions

AFX stenting is a safe and durable method for the treatment of AIOD. The cost-effectiveness, minimally invasive nature of the procedure and preservation of future access options means that AFX stenting should be considered as part of the armamentarium of the proceduralist when treatment of AIOD is required.

References

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