Editorial

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Journal of Vascular and Endovascular Surgery
ISSN 2573-4482

2016
Vol. 1 No. 3: 21

DOI: 10.21767/2573-4482.100021

Current Status of Treatment of Aortic Endograft Infection

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Received: September 01, 2016; **Accepted:** September 06, 2016; **Published:** September 09, 2016

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Citation: Reis PEO, Oderich GS. Current Status of Treatment of Aortic Endograft Infection. J Vasc Endovasc Surg. 2016, 1:3.

Editorial

The widespread use of endovascular aortic aneurysm repair (EVAR) has been accompanied by an increase in need to surgically treat infectious complications of aortic stent-grafts. Although this indication remains somewhat uncommon in most centers, the incidence of stent-graft infections ranges from 1% to 3% in small retrospective series [1,2]. Graft infection can occur as a primary event from skin contamination or hematogenous seeding, or it can result from aorto-enteric erosion or fistula. Independent of the etiology, aortic stent-graft infection carries significant morbidity and mortality and represents a formidable therapeutic challenge. Aortoenteric erosion or fistula (AEF) occurs after either open surgical or endovascular repair, and remains a devastating complication, particularly if the patient presents with massive gastrointestinal bleeding and hemodynamic instability. Although this is more common after repair of a pseudo aneurysm by open technique, it can also affect patients treated by EVAR [3]. In these cases, progression of infection affects the aneurysm sac, the stent and often extends into para spinal ligaments. If this is, not interrupted by extensive antibiotic and surgical treatment, the process evolves to aneurysm rupture or disseminated sepsis [1-4].

Currently there is not a consensus on which is the best treatment option in patients with aortic graft infection (AGI) [1-4]. Traditionally, treatment goals are to eradicate the infectious source by explanation of the prosthetic material and extensive debridement, with arterial reconstruction using either extra-anatomic or *in situ* techniques. It is important to emphasize the need for close postoperative surveillance because of increased risk of early graft-related complications [1-6].

The ideal treatment should eradicate infection and maintain arterial perfusion to critical organs and lower extremities. This has been achieved by antibiotic therapy based on specific culture, extensive debridement, arterial reconstruction using extra-anatomic or *in situ* technique with autologous tissue, cryopreserved allograft or antibiotic soaked grafts, and coverage of the repair or aortic stump using omental wrap [1-6]. When the patient has severe comorbid conditions that prevent safe surgical excision of the infected graft, a conservative treatment has been used with percutaneous drainage of the infectious cavity, followed by irrigation with saline and antibiotic solutions under CT scan guidance [1]. It is important to highlight that this approach should be reserved for a minority of patients, and that large series have not been reported with conservative techniques. There is also the potential for reporting bias, with small reports of successful cases whereas treatment failures tend not to be reported in the literature. Graft removal and in line autologous reconstruction using femoral veins (FVs) has been championed by Patrick Clagett from the University of Texas South Western, and remains the Holy Grail for treatment of aortic infections. This option offers acceptable post-operative mortality, very low re-infection rate, and excellent graft patency rate, with the limitations of a very long operation that carries some risk of venous morbidity. In cases of AEF, graft excision and *in situ* revascularization with an autologous venous neo-aorto-iliac system (NAIS) is an option, but probably is not ideal in the patient with severe comorbidities or who presents in shock [4]. A recent publication from the Low Frequency Disease Study Group has shown that cryopreserved aortic allografts (CAA) are an excellent alterative to treat aortic infections. This option allows expeditious repair and eliminate the need to harvest the vein. However, the cost and availability of allografts remain important limitations. Currently, CAA is gaining increasing recognition as the first line treatment of aortic infections whenever possible [6]. Harlander-Locke and colleagues reported that CAA allowed in-line aortic reconstruction in the presence of infection, with lower patient morbidity and mortality as compared to historical results of extra-anatomic and *in situ*

repair. CAA was associated with low rates of aneurysm formation, allograft rupture, recurrent infection, and limb loss [6]. Patients with prosthetic repair, particularly if not impregnated with antibiotics, had worse survival than those who underwent autogenous repair using cryopreserved venous or arterial bypass or NAIS procedure [2].

The interpretation of clinical reports dealing with aortic graft infection is difficult because of heterogeneous presentation, etiology, extent of infection and inclusion of varied treatment methods. Use of cryopreserved allografts is emerging as a prominent therapy for treatment of AGI in patients that have advanced disease. It is unlikely that we will ever have large, prospective multi-institutional studies to provide level I evidence of the ideal treatment method. Therefore, vascular surgeons should be familiar with all these methods and should tailor treatment to patient presentation. Whereas the best treatment remains controversial and depends on availability, contemporary literature seems to indicate that extra-anatomic bypass is no longer the ideal treatment in most patients, and that *in situ* repair should be offered using either autologous veins or cryopreserved allografts.

References

1 Capoccia L, Mestres G, Riambau V (2014) Current technology for the treatment of infection following abdominal aortic aneurysm (AAA) fixation by endovascular repair (EVAR). J Cardiovasc Surg (Torino) 55:381-389.

2 Smeds MR, Duncan AA, Harlander LMP, Lawrence PF, Lyden S, et al. (2016) Vascular Low-Frequency Disease Consortium. Treatment and outcomes of aortic endograft infection. J Vasc Surg 63:332-340.

3 Kahlberg A, Rinaldi E, Piffaretti G, Speziale F, Trimarchi S, et al. (2016) MAEFISTO collaborator. Results from the Multicenter Study on Aortoenteric Fistulization after Stent Grafting of the Abdominal Aorta (MAEFISTO). J Vasc Surg 64:313-320.

4 Heinola I, Kantonen I, Jaroma M, Albäck A, Vikatmaa P, et al. (2016) Editor's Choice e Treatment of Aortic Prosthesis Infections by Graft Removal and In Situ Replacement with Autologous Femoral Veins and Fascial Strengthening. Eur J Vasc Endovasc Surg 51:232-239.

5 Touma J, Cochennec F, Parisot J, Fialaire LA, Becquemin JP, et al. (2014) In situ reconstruction in native and prosthetic aortic infections using cryopreserved arterial allografts. Eur J Vasc Endovasc Surg 48:292-299.

6 Harlander LMP, Harmon LK, Lawrence PF, Oderich GS, McCready RA, et al. (2014) The use of cryopreserved aortoiliac allograft for aortic reconstruction in the United States. J Vasc Surg 59: 669-674.