Eur J Vasc Endovasc Surg (2018) ■, 1

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Extended Petticoat Strategy in Type B Aortic Dissection

Arkadiusz Kazimierczak *, **Paweł Rynio**

Department of Vascular Surgery, Pomeranian Medical University in Szczecin, Szczecin, Poland

INTRODUCTION

Type B aortic dissection (TBAD) can fail to remodel in the long term, and may lead to complications necessitating re-intervention. Presented here is an "extended" provisional extension to induce complete attachment (e-PETTICOAT) technique. It is an alternative to thoracic endovascular aortic repair (TEVAR), standard PETTICOAT, and stent assisted balloon induced intimal disruption and relamination (STABILISE) techniques to treat TBAD with distal re-entry localised in iliac arteries that might then contribute to retrograde false lumen perfusion leading to aneurysmal progression. The technique has been applied to induce favourable remodelling through such long aorto-iliac segments affected by TBAD.

SURGICAL TECHNIQUE

The thoracic stent graft (SG) is deployed proximally to close the entry tear, with a prior distal bare metal self expandable stent (BMS) deployed over the distal thoracic and abdominal aorta in this case. SG/BMS balloon molding is then carried out to re-expand the true lumen and maximise intimal adherence to these devices. Finally, two covered stents are placed within the abdominal BMS as parallel iliac stent grafts, starting just below the renal artery and terminating below the distal tear, including down to the iliac bifurcation (Fig. 1).

This method adds radial force to the abdominal BMS (if the configuration allows SG deployment within the BMS as shown here, though typically it is BMS into SG) and keeps intercostal and other branches open. Distally, this is effectively covered endovascular reconstruction of aortic bifurcation (CERAB). This may reattach dissection membranes overall. This technique was successfully used in 23 acute complicated and 19 fast degenerating extensive TBADs. Limitations of applicability include abdominal aortic diameter $\geq$ 46 mm (maximum available BMS size) and where the visceral branch supply is only from the false lumen.

DISCUSSION

Extended PETTICOAT is a technique that provides diffuse mechanical aorto-iliac support when treating extensive TBAD. However, continuing studies are required to support this concept and its long-term success.

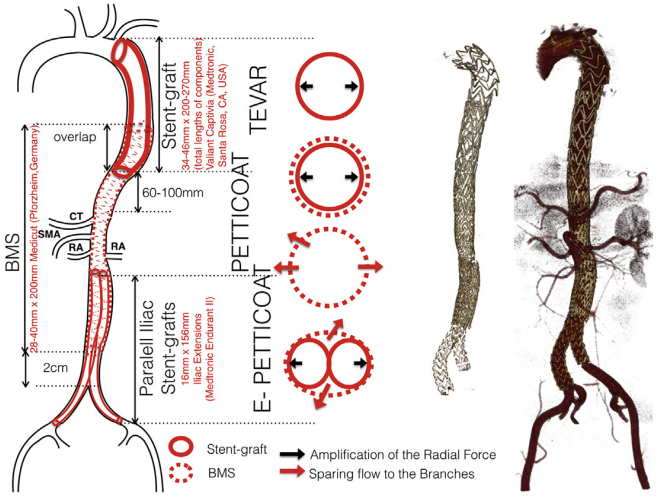

Figure 1.

* Corresponding author. Pomeranian Medical University, Department of Vascular Surgery, No. 72 Powstancow Wielkopolskich Road, Szczecin 70-111, Poland.

E-mail address: biker2000@icloud.com (Arkadiusz Kazimierczak).

https://doi.org/10.1016/j.ejvs.2018.07.038

Please cite this article in press as: Kazimierczak A, Rynio P, Extended Petticoat Strategy in Type B Aortic Dissection, European Journal of Vascular and Endovascular Surgery (2018), https://doi.org/10.1016/j.ejvs.2018.07.038