Review of: "Clinical Results and Aortic Remodeling After Endovascular Treatment for Complicated Type B Aortic Dissection With the “Fabulous” Stent System"

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Potential competing interests: The author(s) declared that no potential competing interests exist.

Invited commentary

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PETTICOAT technique was developed since 2003 by Dr. Ito and was modified by Dr. Mossop and Nienaber. The concept included closure of primary tear by TEVAR skill and combined the use of distal bare metal stent deployed in the true lumen in order to re-expand distal true lumen for the patient with aortic dissection. This idea compensated the drawback of isolated TEVAR, including distal SINE and distal dynamic mal-perfusion occurrence. Recently, the growing literatures revealed PETTICOAT procedure eliminates entry tear, expands true lumen volume, and speeds up the shrinkage of false lumen in thoracic segment of aorta. It also re-expands abdominal true lumen and realigns the intima ostia of dissected branch. Meanwhile, there is no significant difference in the short-term and mid-term outcome compared with isolated TEVAR.[1]

It seems PETTICOAT offers a perfect treatment choice for aortic dissection. However, it apparently failed to completely suppress false lumen patency. In Dialetto el al, false lumen patency was still present in 29.6% of the patients at the thoracic level and in 86.5% of the patients at the abdominal level at 1-year follow-up.[2] Patients are still exposed to the risk of re-intervention for residual abdominal dissecting aneurysm. Second, the severe morbidity rate of PETTICOAT (33.3%) is a little bit higher than isolated TEVAR (11.1%), such as retrograde dissection to ascending aorta (3.7% vs 1.8%), neurologic complication (5.5% vs 3.1%), and aortic rupture (3.7% vs 2.5%).[3] These complications may be explained by the patient with acute dissection status and more extensive approach of PETTICOAT skill. Hence, some literature suggested the distal bare metal stent could be planned after primary tear closure by isolated TEVAR rather than single stage for extensive repair.[4]

Hence, use of the PETTICOAT technique is not justified and it should be limited to cases complicated by dynamic malperfusion as a bailout adjunctive tool.