PETTICOAT Technique to Prevent Distal Stent Graft-Induced New Entry Tears

To the Editor:

In the article by Pantaleo and coworkers [1], they investigated on mechanism and predictive factors of late stent graft-induced new entry (SINE) following endovascular treatment of aortic dissection. SINE seems to be related to the stress yielded by an oversized endograft onto the fragile aortic wall, but its occurrence is found in up to 28% of dissections treated despite the clinical use of tapered endografts and accurate aortic measuring algorithms.

Endovascular treatment with distal bare stenting (PETTICOAT [Provisional Extension to Induce Complete Attachment] technique) of acute descending aortic dissections was first reported in 2005 by Mossop and colleagues [2] to promote true lumen expansion and false lumen thrombosis.

Interestingly, a review by Canaud and colleagues [3] analyzing a similar cohort of 108 patients treated for acute (n = 54) and chronic (n = 54) aortic dissection with a follow-up of greater than 3 years showed no evidence of SINE.

The authors, despite the improvement of true lumen perfusion and diameter, failed to comment on that. In my experience [4], the use of distal bare stents with a low radial force, plays an effective role in protecting the fragile dissected aorta. These stents reduce the risk of new tear formation, especially in the critical area where there is a transition from the flap stabilized by the rigid stent graft to the free flap and where SINE is usually found.

On the basis of that idea, I would recommend using the PETTICOAT technique in chronic dissections where SINE is most likely to occur. Regardless of whether this concept will be confirmed, it may drive the design of stent grafts dedicated to dissection with a progressively reduced radial force in the distal end, where the risk of retrograde migration is much lower than for rerupture.

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References


Reply

To the Editor:

In reply to the comments made by Dr Civilini [1] regarding our article [2], in which he recommends an extended use of the provisional extension to induce complete attachment (PETTICOAT) technique to achieve better aortic remodeling, avoiding at the same time the risk of stent graft-induced new entry (SINE) tear as a late distal adverse event, we respectfully offer the following observations and itemized response.

First, the superiority of the PETTICOAT technique versus traditional thoracic endovascular aneurysm repair (TEVAR)