

Commentary: Fenestration and stenting technique and malperfusion syndrome—To give to Caesar what is Caesar's



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Julius Caesar (100 BCE-44 BCE)

Central Message

Malperfusion syndrome in patients with acute type B aortic dissection needs a correct diagnosis to evaluate static or dynamic obstruction. Fenestration and stenting technique remains a safe procedure.

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The interest for the endovascular treatment of acute type B aortic dissection (ATBAD) has been increasing during the last decades as a result of improved imaging technologies, prompt diagnosis, improved preoperative and postoperative management, and improved experience of the aortic team. This evolution has determined reduced early morbidity and mortality and improved long-term survival.¹ Advanced endovascular techniques, such as thoracic endovascular aortic repair (TEVAR) with stent-graft deployment and dissection flap fenestration with branch stenting repair, are considered the treatment of choice in ATBAD with malperfusion syndrome.^{2,3}

In this issue of the *Journal*, Norton and coauthors⁴ present their data regarding the use of the endovascular fenestration and stenting technique in a consecutive series of 182 patients who had ATBAD with malperfusion in a period spanning between 1996 and 2018 at the University of Michigan. Of 182 patients, 99 underwent aortic fenestration and stenting, and 108 underwent branch vessel fenestration and stenting. Forty-eight patients did not receive any interventional therapy. Norton and coauthors⁴ reported a low early mortality, which was 7.7% in all cohorts and even 0% during the last 8 years. Furthermore, a low incidence of new-onset paraplegia of 0% and a stroke incidence of 5.5% (n = 10) were reported. Survivals at 5 and 10 years were 72% and 49%, respectively. Of note, TEVAR was used only in 9 patients (4.9%) because of the imminent risk of aortic rupture. These results demonstrate the great experience and the high rate of success of the fenestration and stenting technique of the team from the University of Michigan, who have developed and implemented this attractive endovascular technique.⁵ An interesting point of focus is the type of technique to use depending on the mechanism of aortic branch vessel obstruction. Dynamic obstruction should be managed only with a TEVAR procedure. With this approach, the deployment of a stent graft

usually covers the proximal entry tear and restores an adequate branch inflow by promoting the thrombosis of the false lumen and reducing the compression. Static obstruction represents a more complex scenario, because TEVAR alone maybe not useful to resolve the obstruction, and a fenestration and stenting procedure therefore becomes the first option. Norton and coauthors⁴ do not report a subclassification of patients according to the mechanism of obstruction, and they used the endovascular fenestration and stenting for all patients with malperfusion. There was no TEVAR control group, and a distinction among patients with static or dynamic obstruction or both is missing. It is therefore difficult to understand whether TEVAR alone can reliably resolve the dynamic obstruction in this cohort of patients. TEVAR is an easier procedure than endovascular fenestration and stenting. The latter requires extensive endovascular experience and skill⁶ and should be performed in high-volume center. In case of complex malperfusion syndrome caused by ATBAD, the first point to be evaluated is therefore whether the team may go ahead with the procedure or should transfer the patient to a more experienced referral center to offer a higher probability of success. This option is sometime neglected, even though it may be the best option: “Reddite quae sunt Caesaris Caesari” [to give to Caesar what is Caesar's].

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