Commentary: Effectiveness versus efficiency in surgery for DeBakey type I aortic dissection

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DeBakey type I aortic dissection requires early intervention, often because of its emergency nature, including pericardial tamponade, neurologic deficiency, organ malperfusion, and hemodynamic instability.¹ Total aortic correction and arch replacement have been a matter of debate because lifesaving surgery is the top priority during emergency; a restricted aortic correction of the ascending aorta such as a hemiarch replacement saves many patients.^{2,3}

The current article by Zhang and colleagues⁴ presents a retrospective analysis of patients with DeBakey type I dissection operated by highly experienced surgical teams. Two different contemporaneous surgical techniques, both including an uncompromised aim to perform a 1-step do-it-all arch reconstruction⁵ with a distal endograft, are compared. Surgery using a frozen elephant trunk was the method of choice to all patients, especially to those younger than 50 years of age and in whom the true lumen of the aorta required special attention because of compression of the false lumen. The other surgical technique included a hybrid approach to the aortic arch using a retrogradely inserted endograft under moderate hypothermia. The rates of postoperative renal insufficiency, liver insufficiency, and paraplegia were lower after the hybrid operation compared with surgery using frozen elephant trunk under deep hypothermia, but mortality was comparable in both groups. The authors state that the hybrid aortic arch operation is an option for DeBakey type I aortic dissection.

The study did not differentiate aortic dissection as acute, subacute, or chronic, and it was not reported how many patients were lost before reaching surgery. Reasons to perform extended distal surgery were to avoid reoperations and poor false lumen remodeling after surgery. The average age of all patients was remarkably as low as 48.6 years. Yet, the study was underpowered to report on thrombosis of the false lumen during follow-up.

Distal endografting is not routine in young patients with a genetic background. On the other hand, all patients do not develop a distal aortic event and a restricted proximal aortic

reconstruction suffices for the majority. Even with total reconstruction of the aorta, many if not all patients need lifelong follow-up including imaging control. A 1-stage approach is attractive, but the average surgeon is not convinced, because extended surgery during acute aortic dissection increases risk of complications.⁶⁻⁸

Healthcare policy, including reimbursement of costs, availability of cost-effective treatment, and patient follow-up, is dependent on which part of the world the treatment is offered and affects surgical decision-making. Some patients simply may not have the luxury of being offered a second-stage operation if needed. Nevertheless, surgical principles are acknowledged among all colleagues: First, the patient has to be saved. Second, one tries to minimize immediate risks due to surgery. Only then does long-term prognosis matter for the acute patient.

The exclusion of the dissecting entry tear itself may still be an important technical detail of a successful surgery for aortic dissection. This study demonstrates that the distal part of the aorta may be addressed using at least 2 different surgical strategies.

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Central Message

The distal part of the aorta during DeBakey type I aortic dissection requires effective and efficient surgical decision-making.

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