Commentary: Can we dramatically reduce the number of staged repairs?

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The important experience of the Kobe group concerning 118 staged procedures performed in 82 patients with Marfan syndrome, published by Ikeno and colleagues¹ in this issue of the *Journal*, is remarkable. The results have been outstanding in terms of operative mortality, neurologic accidents, and long-term survival, even though one may regret that no information was provided in detail concerning the possible immediate complications.

Ikeno and colleagues¹ included in their study only the procedures performed in their department. But one may observe that 28 patients had previously undergone 32 operations, and that the 82 patients had actually undergone 150 surgical procedures. What Ikeno and colleagues¹ classify as a first-, second- or third-stage operation was actually the second, third, or fourth one. This underlines the fact that the surgical teams and also, the patients, who generally are well informed about their condition, are aware that several late operations might be necessary in the future, especially if the first procedure has been performed for acute dissection.

Facing those dilemmas, a major question is raised: Is it possible to reduce the rates of reoperations? As largely alluded to in the article of Ikeno and colleagues,¹ it seems that the answer may be positive.

During the last 2 or 3 decades, the analysis of spontaneous postoperative aortic evolution, the progress made in the indications and in the surgical and interventional techniques, and the resort to more efficacious medical treatments have indeed led to strategies of long-term stable procedures and normal life expectancy through extended and even total aortic replacements or repair. There is no doubt that in patients undergoing elective surgery with a dilated root larger than 45 mm, this segment should be replaced. The current large development and use of the

A disastrous evolution of a replacement limited to the aortic root after acute dissection.

Central Message

In patients with Marfan syndrome, repeated operations are often required. Could stricter strategies in the surgical techniques dramatically reduce the rate of staged operations?

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valve-sparing procedures allow safe and durable results with reduced risk. In those patients, it was also demonstrated several years ago that extending the replacement distally is not necessary, because the late evolution is most generally stable.²⁻⁴

It seems also largely demonstrated that in patients operated on for acute type A dissection, the replacement of the aortic root is mandatory but the replacement of the total arch is also of utmost importance. Replacements limited to the ascending aorta result almost systematically in a disastrous evolution. Ideally, this total arch replacement should be done with such techniques as cannulation of the supra-aortic vessels, hypothermic circulatory arrest and selective antegrade cerebral perfusion, open distal anastomosis, and separate reimplantation of the supra-aortic vessels. This replacement should also be associated systematically with the elephant trunk technique to provide a safe and easy possibility of distal repair if needed in the future or even, as has been proposed for a few years, with the frozen elephant trunk technique to induce a false-lumen thrombosis in the descending aorta.⁵

When for any reason some replacement of the thoracoabdominal aorta is required, the most frequently observed complication is, in addition to the dreadful

spinal cord injury, probably the aneurysmal dilatation of aortic patches used to reimplant the intercostal and visceral arteries. To prevent those complications, it seems appropriate either to reimplant the intercostal arteries through prosthetic conduits or perhaps to avoid any reimplantation of those arteries, in accordance with the collateral network concept,^{6,7} as well as reimplanting the visceral arteries separately, with available ready-made prostheses.

All those indications and techniques may seem rather stringent. Nevertheless, they may be the best way to limit the number of staged repairs, especially in patients with acute dissection. An increasing consensus about most of those techniques can be observed now, and one may hope that in the close future this will help in limiting to only 1 or 2 the number of late-stage procedures that are so worrisome for the surgical team and awfully frightening for the patients.

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