Valve-sparing root replacement in type A dissection: Age and experience matter

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Acute Stanford type A aortic dissection.

Central Message

Surgical treatment of acute type A aortic dissection requires experience, and coupling this procedure with a complex valve-sparing operation increases the required expertise.

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Acute Stanford type A aortic dissection (TAAD) is a potentially lethal and relatively infrequent acute aortic syndrome, estimated to occur in the United States at a rate of 2 to 3.5 cases per 100,000 patient-years.¹ Although this would translate into approximately 6000 patients a year, the number of patients presenting for therapy is between 2000 and 2500, with the majority being treated surgically. Surgical mortality for TAAD has trended downward as experience and perioperative care have improved, with the International Registry of Acute Aortic Dissection showing a decrease in mortality during a 17-year period from 25% to 18%,² although this most likely underestimates the “real-world” rate.³ The introduction of dedicated aortic specialists has led to further reductions in mortality to less than 10%.⁴

In this issue of the *Journal*, the Emory group of Rosenblum and colleagues⁵ present their single-institution experience with the subgroup of patients with TAAD who required root replacement. They further subdivided this cohort into those patients in whom the root was addressed with a composite valved conduit (conduit root group) and those who underwent a valve-sparing root replacement (VSRR group).⁵ The results demonstrated superior 30-day mortality in the VSRR group relative to the conduit root group (3.4% vs 14.3%, respectively; $P < .001$). The important finding here may not be so much the superiority of the David procedure for addressing the root at the time of surgery for TAAD, but rather that in *both* groups the operative mortality was less than might be expected. Patient outcomes were therefore skewed in part by the obvious expertise of the surgeons involved.

This study was by no means clean of bias. The patients in the VSRR group were younger than those in the conduit root group and, by inclusion criteria, had valvular anatomy that was optimal for repair. In addition, 2 surgeons performed 82% of the VSRR procedures, whereas the conduit root replacement procedures were performed by a larger array of surgeons. Rosenblum and colleagues⁵ appropriately address these biases in their limitation section. At

9 years, the differences in characteristics between the groups became amplified, with a significant difference in survival (92% in the VSRR group vs 59% in the conduit root group; $P = .02$) providing a surrogate of sorts for predicting long-term survival.

The finding of a benefit of VSRR relative to conduit root replacement is not new.^{6,7} The information provided by this study, coupled with data from other studies looking at surgeon expertise^{4,8} and center volume⁹ could reasonably conclude that for patients with TAAD, VSRR is a preferable approach *if* the patient's preoperative characteristics are favorable, *if* the surgeon has the expertise, and *if* the institution has the volume experience. These caveats are not unreasonable, and as Rosenblum and colleagues⁵ at Emory have shown, optimal.

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