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Commentary: Yet another take on the wrap

John Bozinovski, MD, MSc

Aortic wrapping for ascending aortic aneurysm has not gained widespread use. With rare exception,¹ no one advocates this as a first-line treatment but there are proponents of this technique for selected patients.^{2,3} There are also advances being made in the materials and technique used for wrapping.⁴ Some have even combined wrapping of the aortic root with replacement of the ascending aorta.⁵ Kim and colleagues⁶ in Korea report on their findings comparing propensity-matched patients with moderate aortic dilatation undergoing aortic valve replacement and ascending aortic replacement (AAR) with those undergoing aortic valve replacement and ascending aortic wrapping (AAW) over a period of 24 years.

Wrapping the aorta as a treatment for dilatation has been around since the 1970s.⁷ There is no randomized trial comparing the 2 techniques and AAR remains the gold standard. A few retrospective comparisons of AAW to AAR exist, but they are small studies or do not compare like populations.^{1,8,9} The study by Kim and colleagues⁶ is retrospective, but it is larger than the other studies and it attempts to compare similar patient populations. Early outcomes were not different between the groups. Over a median follow-up of 7 years, compared with the AAR group, the AAW group resulted in 70% more adverse aortic events defined as surgery on the aortic arch or descending thoracic aorta, aortic dissection, rupture, or sudden death. In addition, there were 50% more patients experiencing proximal arch dilation >20% of the postsurgical diameter. Thus, we have a sense that the long-term results are inferior to AAR.

From the Division of Cardiac Surgery, The Ohio State University Wexner Medical Center, Columbus, Ohio.

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Address for reprints: John Bozinovski, MD, MSc, Division of Cardiac Surgery, The Ohio State University Wexner Medical Center, N816A Doan Hall, 410 W 10th Ave, Columbus, OH 43210 (E-mail: jovan.bozinovski@osumc.edu).

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John Bozinovski, MD, MSc

CENTRAL MESSAGE

Ascending aortic wrapping with polytetrafluoroethylene or polyester grafts seems to be inferior to replacement. If reserved for frail patients with moderate dilatation, is any intervention needed?

The response might be that after AAW, shear stresses are transmitted to the downstream aorta and not enough of the aorta was wrapped. Perhaps the wrap should extend into zone 1 or 2 of the arch. This is not an invalid opinion and is so far unexamined. Even in the AAR group there were 14% of patients experiencing adverse aortic events, as defined above. The authors did not report how many patients had clamping of the distal aorta or how many had open distal hemiarch procedures. Nor did they report how many of the adverse aortic events occurred in either of these subgroups of the AAR group. Perhaps we should be more liberal in extending repairs into the arch.

Kim and colleagues⁶ also report that the aortic root exhibits slow growth following AAW that may be related to secure anchoring to the proximal, sinotubular junction, site. However, a more likely explanation is that the aortic roots in these patients were not enlarged to begin with and were unlikely to dilate over time.

It is appealing to have a procedure that is less insulting to the patient and AAW in this study was performed after separation from cardiopulmonary bypass (CPB), limiting CPB time and myocardial ischemic time; however, others performing AAW do so under CPB. Despite the perceived less-obtrusive nature of AAW compared with AAR there was no difference in early outcomes other than longer intensive care unit and hospital stays that were long in both groups. For hospital stay, it was 12 days in the AAW group

and 18 days in the AAR group. Does that value exceed the cost of worse outcome?

If AAW is left to patients of advanced frailty with a moderately enlarged aorta, does any intervention need to be done? Competing risk of death from other causes is likely to diminish the significance of a moderately dilated aorta.

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