

frequently. Data on which combinations of vessel involvement were associated with late intervention would be informative.

- Late degeneration in aortic dissection is all about residual pressure and flow in the false lumen. Whether it is in repaired type A or type B, the same pathological mechanisms likely exist. Thus, the authors theorize that the late reinterventions were related to retrograde false lumen flow from the residual dissected vessels. This is plausible.

In the end, the group should be credited for this work and for raising awareness of the importance of the dissection into arch branch vessels. This becomes important not only in the early setting with associated stroke, but also in late follow-up with need for reintervention. As aortic surgeons, it is easy for us to focus on the trunk and the roots, but we should not forget the branches.

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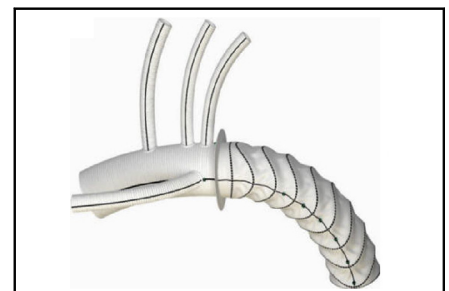
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Commentary: Total arch or semiarch: That is the question

Jean Bachet, MD, FEBCTS

In the article titled “Is Arch Branch Vessel Dissection Without Malperfusion Associated With Worse Outcomes After Hemiarch Replacement in Acute Type A Aortic Dissection?” in the present issue of the *Journal*, Norton and coworkers¹ analyze the immediate and late consequences of leaving an unrepaired dissected supra-aortic vessel without cerebral malperfusion as compared with the immediate and late results in patients without supra-aortic vessel dissection.

This study is based on the comparison of 2 important-enough cohorts of patients operated on during the same



One modern prosthesis used for safe and stable total replacement of the arch.

CENTRAL MESSAGE

With the present surgical techniques and prostheses, it might be more appropriate to systematically perform a total arch replacement in the case of any kind of involvement of the supra-aortic vessels.

period of time, with excellent immediate postoperative results. It is interesting, as it shows that the immediate results are similar for both groups but that, in the long term, leaving the unrepaired dissected supra-aortic vessel leads to a significantly greater rate of complications and reoperations.

This observation is somewhat intriguing and may raise some questions. It is indicated that all reoperations were

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performed distally to the initial hemiarch replacement. If so, if we except the few patients with connective tissue diseases in whom other reasons for late deterioration of the postoperative result are well known, one may wonder how the only dissection of one or several supra-aortic vessels could be responsible for such late complications, except through the perfusion of the false channel in the nonreplaced distal arch, as considered by the authors in their discussion, or, as it can be often observed, through the persistence of one or several intimal tears in the distal aorta, perfusing the false channel and leading to late aortic dilatation, development of true and false aneurysms, end-organs malperfusion, distal arterial occlusion, etc.² However, in this later hypothesis, such tears would probably be randomly and equally distributed in both arch branch vessel dissection (ABVD) and non-ABVD groups and would have no influence on the difference in percentages of late reoperations.

So, if we consider only the role of the dissected supra-aortic vessels, a major question arises: Should we systematically replace the total aortic arch to reduce the number and frequency of late reoperations? The authors, through their study, state that, in absence of cerebral malperfusion, this would be somewhat irrelevant. In addition to the immediate postoperative data showing no difference between the ABVD and non-ABVD groups, they indicate that replacing the total arch implies a longer procedure, longer cardiopulmonary bypass, longer cardiac arrest, and a more technically difficult procedure. And they do agree with and emphasize what John Elefteriades said as early as 2002: "...acute type A dissection is an inherently lethal condition. Our first job is to produce a live patient."³ Therefore, in their opinion, every time it is possible, such procedures should be avoided.

This may appear as unquestionable. Yet, as far as hemiarch or total arch replacements are concerned, it seems that the difference in the postoperative mortality and severe complication rates is not determinant.^{4,5} In addition, those

unquestionable statements were made about 20 years ago. Since then, surgical techniques (cardiopulmonary bypass, sites of arterial cannulation, modes of cerebral protection, etc) have largely evolved while new prosthetic devices such as 3-branched prostheses, associated or not with stent grafts, have appeared on the market, allowing much safer and stable repairs, such as direct end-to-end anastomoses of the branches to nondissected vessels with or without the "frozen elephant trunk" technique.

Therefore, all those improvements have led many groups dealing with surgery of acute type A dissection to perform more and more total arch replacements with excellent immediate- and long-term results. In this matter, it would be interesting to know whether the authors have modified their indications and performed more often total arch replacements in case of ABVD.

This may be implied when the authors conclude that "more aggressive arch replacement than hemiarch replacement should be considered by experienced surgeons...given that aggressive arch replacement does not increase operative mortality but could prevent future reoperations."

We cannot agree more!

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