The authors reported no conflicts of interest.

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ADULT

respectively). However, between 2003 and 2013, our in-hospital mortality for patients who were octogenarian was 30% whereas from 2014 to 2016 it was 14%, and this reflects the reduction in mortality rate over time in line with Ikeno and colleagues' study. Equally important is that we found the discharge arrangements for patients who were octogenarian to be concerning; among our octogenarian cohort, 56% of these patients were discharged home safely, 22% required local hospitalized care, 16% were transferred to intermediate care, and 6% of the patients were transferred for stroke rehabilitation.

We would like to emphasize the observation that while the operative success in our cohort and other series of patients who are octogenarians is barely acceptable for an elective technique, the discharge destination, quality of life, and survival of these patients needs careful consideration. The fact that in our octogenarian cohort with elective mortality of 16.7%, stroke rate of 22%, and urgent mortality of 33.3% for those undergoing DHCA, with only just over one half being discharged home, is important information that we use to consent patients and make decisions on a regular basis.

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Our institutional data reported in this letter have not been published before or under consideration for publication anywhere else.

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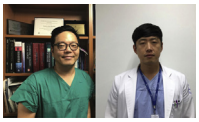

REPLY: "WE WILL FIND A WAY. WE ALWAYS HAVE"

Reply to the Editor:

Aging of the worldwide population has been rapidly progressing over the last decades, mainly led by high-income countries, in which the average life expectancy is expected to be more than 90 years by 2030 by the acceleration of its pace.[1] Along with this global super-aging trend, cardiovascular (CV) diseases, most of which are strongly associated with aging in their pathogenesis, are also on the rise in their incidence and prevalence, and thoracic aortic aneurysm is no exception.[2] In line with this trend, the feasibility of extensive thoracic aortic surgery in older patients such as octogenarians has been one of the most important issues of focus in the CV surgical community in recent years. A recent paper in the *Journal* conducted by Ikeno and colleagues,[3] which is an example of such timely research, evaluated 139 octogenarian and nonagenarian patients undergoing total arch replacement with resultant 8.6% of operative mortality. Of note, the surgical mortality rate in this cohort has decreased markedly over time, recording 4.8% only during the recent 6 years. In addition, long-term survival beyond the 1-year point in these patients demonstrated comparable results with an age- and sex-matched general population on landmark analysis. These excellent results from a center of excellence, although they may not be generalizable to low-volume centers, are obviously encouraging to older patients as well as to the CV surgical community. These excellent survival outcomes, however, may not necessarily mean returning to normal quality of life after the surgery.

Harkey and colleagues[4] shared their 15-year experience with complex arch surgery requiring hypothermic circulatory arrest including 24 octogenarian patients among 457 entire patients. Although the surgical mortality rate among octogenarian patients decreased markedly from 30% to 14% over time, it was much

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greater than in younger patients (mortality rate of 1.8%-6.0% in patients 60-70 years). The addition of stroke rate in the octogenarian patients of 22% made the authors believe that the surgical risk may be "barely acceptable" for the nonurgent situations. It is also notable that the rate of discharge home was only 56% in the octogenarian patients. Based on these observations, the authors suggested that careful consideration of complex arch surgery in octogenarian patients under comprehensive risk evaluations and detailed informing of the estimated surgical outcomes to patients. This is an important argument because the discharge-home rate, even in the study by Ikeno and colleagues, was only 67.7% despite a high surgical success rate.[3]

We as surgeons know, however, that there are certain subsets of octogenarian patients who tolerate extensive surgery as well as younger patients, and therefore, that age is not the sole indicator to determine surgical risks and postoperative performance. Frailty is probably the best description to define overall performance status for CV surgical candidates, which also well correlate with our results of "eyeball test" as a physician. The frailty issue has been extensively studied in recent years, and by these efforts it has been well established as an excellent surrogate to predict operative outcomes (better than patient's age) and more importantly it does not necessarily correlate with patient's age.[5,6] Therefore, for a more reasonable approach to determine operability, balanced approaches considering the patient's age, frailty index, and other key baseline factors as well as institutional performance and by obtaining fully informed consent from the patient are needed. Ideal surgical risk stratification is yet to be established, and therefore, we look forward to further studies that aim to contribute to address this issue in complex aortic arch surgery of super-aged patients in larger cohorts.

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REPLY: JUST BECAUSE WE CAN, SHOULD WE? QUANTITY VERSUS QUALITY OF LIFE

Reply to the Editor:

Nearly all aortic disease can be addressed with contemporary open and endovascular therapies for repair, including hybrid strategies using both. However, the ability to perform a procedure does not always equate with the ability to recover from a procedure; this dichotomy markedly increases with age. In training, we were told that patients (especially the elderly) always act their age under anesthesia and surgical intervention. Just because we can do it does not always mean we should. With regard to the entirety of physiologic insult, there are few surgical procedures that rival the complexity of extensive aortic surgery.

Ikeno and colleagues[1] from Kobe University, Kobe, Japan, recently shared their experience with 740 patients undergoing total arch replacement between 1999 and 2018, 139 of whom were aged 80 years or older.[1] In the advanced aged group, operative mortality was 8.6%, stroke was 4.3%, and overall survival was 55.4% at 5 years. In contrast, for younger patients, operative mortality was 4.0%, stroke was 3.7%, and an overall survival of 78.1% at 5 years. The authors conclude that total arch replacement could be