

Preface

In the next two issues of *Annals of Cardiothoracic Surgery (ACS)*, we address the complex topic of Aortic Arch Surgery. To most cardiothoracic surgeons, replacing the aortic arch can be one of the most daunting procedures in surgery. While we have become accustomed to developing strategies to mitigate end-organ dysfunction by reducing cardiopulmonary bypass time over the years, procedures on the arch seem to go against almost everything we have learnt about cardiac surgery. It prolongs pump time, usually requires lower temperature, has been reported to cause a greater inflammatory response and derangement of the coagulation system leading to higher rates of bleeding and end-organ dysfunction, and also puts the most sensitive organ, the brain, at risk.

The demanding task of aortic arch surgery is not something that early pioneers could have envisaged. Yet, the true measure of our surgical community is how we have risen to overcome these and refine this procedure to its contemporary form. Such evolutions have included better anastomotic techniques, newer graft materials and tissue sealants, techniques allowing higher temperatures, and forward and backward cerebral perfusion. Complex arch replacement is now a standard practice in specialized centers, with acceptable survival and complication rates, as well as reasonable patient satisfaction and quality of life. The general paradigm shift towards minimally invasive surgery has not gone unnoticed by arch surgeons; endovascular and hybrid techniques, while still in its infancy, hold the promise of even better patient outcomes.

We are indebted to the pioneers in this field, in particular Professors Randall Griep, Nick Kouchoukos, Teruhisa Kazui, Lars Svensson, Joseph Coselli, John Elefteriades and Friedrich Mohr. It is due to the tireless and committed efforts of these intrepid explorers, and many others, that we are beginning to appreciate the revolutionary changes in arch surgery. These masters of aortic arch surgery have collaborated closely to offer their wisdom and experience in these two issues of ACS. Supplemented by viewpoints from aortic institutes around the world, these issues are true compendiums of clinically significant updates in the field of aortic arch surgery.

The complexities of arch surgery necessitate the division of this topic into two consecutive volumes, to best deliver the most update-to-date information to our readers. The insight and knowledge of aortic arch greats are presented in a step-wise and beautifully illustrated format. The video atlas will take the rookie through their first arch replacement and the experienced surgeon through the latest techniques. The meta-analyses on cerebral protection strategies explores the outcomes of deep hypothermic circulatory arrest, moderate hypothermia, selective antegrade cerebral perfusion and hybrid endovascular techniques. In addition, a consensus from an international panel of arch experts will finally resolve the classification of hypothermia in aortic arch surgery.

We are very proud to be able to bring these two issues to our readers. Finally, I thank each of our contributors for sharing their knowledge and expertise to generate these outstanding issues of the *Annals of Cardiothoracic Surgery*.

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