In Reply:

We thank Dr. Grocott for his interest in our publication and for raising an important question regarding the beneficial effects of cerebrospinal fluid (CSF) drainage during aortic aneurysm repairs to protect the spinal cord: Is it a common practice or standard of care?

The first successful resection of a descending aortic aneurysm was performed in 1951. This was also the first case of paraplegia after thoracic aneurysm repair.[1] Seventy years later, spinal cord injury and paralysis continue to be a threat to every patient undergoing aortic aneurysm repair, either open or endovascular.

There are only three randomized clinical trials showing protection of the spinal cord by CSF drainage in open repair.[2] There are no randomized clinical trials to study if the CSF drainage is protective in endovascular repair. The perioperative teams assumed CSF drainage protects the spinal cord from ischemic injury during thoracic endovascular aortic repair and CSF drainage has become common practice and an essential part of care. Due to the lack of randomized clinical trials, we agree with Dr. Grocott that currently, CSF drainage is common practice, not a standard of care. However, we want to raise three issues in regard to this subject:

1. There is a need for a randomized clinical trial testing the benefits of CSF drainage in thoracic endovascular aortic repair. Due to the perceived clinical benefits from the CSF drainage, it is hard to run these clinical trials. However, a large animal model of preclinical trial might be the first step to answer this important clinical question.
2. As also highlighted by Dr. Grocott, the insertion of catheter and overdrainage of CSF in endovascular repair can lead to subdural hematoma.[3] Therefore, although the CSF drainage might protect the spinal cord, it also carries risks, leaving the perioperative physicians with a hard choice for endovascular repairs: to drain or not to drain.
3. We also believe that understanding the cellular and molecular mechanism of ischemic spinal cord damage and neuroprotective roles of the CSF drainage in aortic aneurysm surgery is important to determine whether to employ it as common practice or standard of care. This research will help to understand the roles of the CSF drainage in both approaches. Once we understand the mechanisms of the damage to the spinal cord, we can propose treatment. Until then, ischemic spinal cord injury and paralysis is like the "Russian roulette of aortic aneurysm surgery," as the late John Doppman stated in 1993.[4] The hard work of clinical and basic science teams around the globe is needed to eliminate this dreadful complication after aortic aneurysm surgery.

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Competing Interests

The authors declare no competing interests.

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