INVITED COMMENTARY

Is it Really Time to Eliminate Prophylactic Cerebrospinal Fluid Drainage in TAAA Endovascular Repair?

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In this issue, Juszczak et al.[1] report outcomes of fenestrated and branched endografting (F/BEVAR) according to the extent of proximal aortic coverage above the coeliac trunk (CT) ($<$40 mm vs. $\geq$ 40 mm). Their report is relevant, as more extended aortic coverage is a risk factor for perioperative complications and especially spinal cord ischaemia (SCI).[2] Reporting outcomes of F/BEVAR on the basis of the extent of aortic coverage also seems more accurate than on the basis of the anatomical extent of the aneurysm, as the chosen sealing zone level in similar extent aneurysms may vary significantly.

A threshold of a 40 mm sealing zone above the CT as chosen by the authors is of clinical relevance, as most four fenestration grafts for juxtarenal (JAAA) and type IV thoraco-abdominal aneurysms (TAAA) are designed with a supracoeliac sealing zone up to 40 mm. Juszczak et al. show that among patients with a coverage up to 40 mm above the CT, none developed SCI. Thirty day mortality was also low with 1.2%.[1] This suggests that we can safely lengthen the sealing zone up to 40 mm above the CT and that a four FEVAR should be preferred over a two or three FEVAR when needed in order to achieve a more durable proximal sealing zone.

The most important finding of the study is undoubtedly the significant reduction in the incidence of disabling SCI in patients with $\geq$40 mm coverage above the CT, after the introduction of a spinal cord protection protocol (SCPP) (pre-SCPP 4/20 [20%] vs. post-SCPP 2/167 [1.2%]; $p = .001$ [OR = 19.9]). The authors should be congratulated for this improvement. They attribute the significant reduction in SCI mainly to the following two measures: (1) the use of selective staging, and (2) the avoidance of prophylactic cerebrospinal fluid (CSF) drainage. This deserves an explanation.

On the one hand, adopting a strategy of selective staging seems reasonable in view of accumulating evidence. Selection criteria and the optimal method of staging (e.g. thoracic stent grafting as a first stage procedure, temporary aneurysm sac perfusion via an open branch, or segmental artery coil embolisation) are still open to discussion.

On the other hand, a "no prophylactic CSF drainage" standard policy, as adopted by some centres,[3] is disputable. The lower SCI occurrence with 1.2% is a weak argument. In their series, the authors experienced one fatal spinal drain related complication, which led them to stop prophylactic CSF drainage.[1] Other centres, like ours, continue to use a spinal drain, but only in the higher risk type I and II TAAA. In the absence of more elaborated evidence, we would advise balancing the pros and cons of a spinal drain. In their series, the significant reduction of SCI noted after introduction of the SCPP seems to be the result of all additional measures adopted by the authors (preservation of antegrade perfusion of the left subclavian artery and at least one hypogastric artery, minimisation of lower limb ischaemia reperfusion injury and intra-operative blood loss, maintenance of a MAP $>$ 80 mmHg, and adequate oxygen delivery [Hb $>$ 10, $pO_2 > 9$, $SaO_2 > 95\%$ etc.]), rather than only the result of avoiding CSF drainage. Similar measures and prophylactic CSF drainage in higher risk TAAAs, as applied in our centre, also resulted in an equally low occurrence of SCI.[2]

REFERENCES

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