

INVITED COMMENTARY

## Commentary on “Outcome of Elective and Emergency Open Thoracoabdominal Aortic Aneurysm Repair in 255 Cases - A Retrospective Single Centre Study”

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The open repair of a thoraco-abdominal aortic aneurysm (TAAA) is possibly one of the greatest surgical challenges. The pioneering work of E.S. Crawford and of the “Houston School” showed that the operation is feasible but that it carries a significant risk of mortality, as well as morbidity, with paraplegia being the most dreaded complication.

Many decades of technical and technological advancements radically changed this procedure from being a rush against time in the “clamp and saw” era to a highly complex and articulated multidisciplinary procedure that involves a number of adjuncts besides ordinary surgical and anaesthetic management, such as extracorporeal circulation, transoesophageal echocardiographic monitoring, neurophysiological monitoring with evoked potentials, automated cerebrospinal fluid drainage, renal protection with cold perfusion of Custodiol solution, coagulation evaluation, and a transfusion strategy guided by thrombo-elastometry, among others.

The results achieved have been satisfactory at a number of super-specialised aortic centres, and reasonably satisfactory at many other institutions. This is a procedure that needs to be centralised in dedicated centres, in order to obtain optimal outcomes.

Parallel to these surgical improvements, the “endovascular revolution” that followed the work of R. Greenberg and many others made it possible for TAAAs to be treated with fenestrated and branched stent grafts in the presence of a favourable anatomy, thus hugely reducing the invasiveness of the procedure, and possibly mitigating several

morbidities, especially respiratory issues, but still with not negligible rates of mortality and spinal cord ischaemia.

As endovascular techniques mature, the role of open versus endovascular procedures is becoming clearer, with open surgery being the first line treatment in the case of connective tissue disorders, conversions, infections, emergencies with unsuitable anatomies, and (probably) in patients with a long life expectancy, owing to a significantly lower need for secondary procedures.

In this issue of *EJVES*, Gombert *et al.* report on the clinical results of patients who received open surgical repair of TAAAs at the aortic centres of Maastricht and Aachen lead by professor M.J. Jacobs.<sup>1</sup> These institutions serve as referral centres for relevant areas of the Netherlands and Germany. In this report, 20% of patients had an emergency procedure, 51% had previous aortic surgery, 58% suffered from post-dissection TAAA, and 26% of all patients had a connective tissue disease. This scenario reflects the increasing complexity of patients treated with open repair of TAAA, the progressive reduction of the centres with an open surgical programme, and the results that can be expected in this setting.

### REFERENCE

- 1 Gombert A, Frankort J, Keszei A, Muller O, Benning J, Kotelis D, et al. Outcome of elective and emergency open thoracoabdominal aortic aneurysm repair in 255 cases - a retrospective single center study. *Eur J Vasc Endovasc Surg* 2022;63:578–86.