Open surgery for acute, complicated type B dissection is associated with an operative mortality in excess of 20% and considerable morbidity including spinal cord ischaemia. Furthermore a mortality of 17% has recently been reported after percutaneous flap fenestration for acute type B associated malperfusion. There has therefore been considerable contemporary interest in the role of TEVAR in both acute uncomplicated and complicated type B dissection.

The precise definition of acute complicated type B dissection has been recently clarified and has been defined as symptom onset of 14 days or less, with rupture, defined as haemorrhage outside the aortic wall or malperfusion, defined as visceral, renal, lower extremity or spinal cord hypoperfusion.

The mortality and morbidity results reported in this manuscript are excellent in comparison to historic open repair results and contemporary TEVAR results. The authors report a 30-day mortality rate of 4.4% and an overall survival of 95.6% at 1 and 3 years respectively. These are considerably better than the recently reported multicenter US data, with a 30-day mortality of 10.8% and 1-year survival of 70.6%. The 3-yr survival figures are also considerably better than the 78% reported for patients medically treated and discharged from hospital alive after uncomplicated type B dissection in the IRAD database and also the two-year 89% survival for stable type B dissection treated with TEVAR in the INSTEAD study.

There are a number of possible explanations for the better outcomes reported in current manuscript. Firstly the mean age of the patients in this study, 42 years, is much lower than the 59 years reported in the US data. This may suggest genetic and environmental differences in the pathophysiology of acute, complicated type B dissection in different geographical locations. These differences should be considered when extrapolating results from one population to another.

Secondly the authors collected their data retrospectively and this may account for some discrepancies when compared to data collected systematically from five physician-sponsored investigation device exemption clinical trials. However the most important factor that may explain the differences in outcome of these two studies may relate to the definition of rupture. Shu et al. define indications for treatment as rupture in 13% and haemothorax with impending rupture (later defined as enlarged aortic diameter in the dissected region with evidence of haemothorax and no active contrast extravasation on CT) in 60%. The US patients mainly presented with malperfusion 72% and only 32% with rupture more tightly defined as haemorrhage...
outside the aortic boundaries. Patients with acute Type B dissection frequently present with a left pleural or mediastinal effusion and it may be difficult to differentiate haematoma from a reactive effusion on CT. Those patients reported as “impending rupture” in this study may have been considered uncomplicated by other authors.

There is no doubt that TEVAR as been an advance in the management of acute complicated type B dissection, which is reflected by the results reported in this study. The role of TEVAR in the management of the larger group of patients presenting with uncomplicated type B dissection requires further delineation. The authors treated 130 (84%) of presenting with uncomplicated type B dissection requires further delineation and stent-graft designs specifically for dissection require further development, however as vascular specialists we are fortunate to have considerably more ammunition to deal with these complex aortic problems than in the past.

References