
It has been 3 years since Michael E. Debakey died on 11 July, 2008. Although his death marked the end of an era, the period surrounding the surgery for his acute dissection demonstrated all of the challenges we as cardiovascular surgeons face when treating the elderly. Acute type A (or Debakey 1 or 2) dissection may be the most demanding cardiovascular procedure we perform, and although improvements have been made over the past five decades, early operative mortality still remains as high as 25% [2]. Because nonoperative management is still associated with a dismal prognosis, with most dying within weeks, most patients are offered surgery. Recent studies, however, have questioned the practicality of intervention in the elderly [3].

As our population ages, the number of elderly suffering from acute aortic dissection will inevitably rise, further increasing the likelihood that we will encounter this situation. According the 2010 United States Census report, the population of those older than 70 years grew 8.5% since 2000 to a total of 27.8 million people [4]. More striking was the increase in those older than 80 years, ‘octogenarians’, who grew at a rate of ‘18.3%’ over the same period for a total of 11.2 million people. If one assumes that acute aortic dissection occurs at an incidence of 5 per 100,000 people, then as many as 560 octogenarians (or older) will suffer acute aortic dissection in the US every year. If we think that 18.3% growth is significant, then consider the 50–69-year-old group, the fastest growing subgroup in the US, who grew at a rate of ‘27.8%’ over the same period for a total of 71.2 million people. By the next census tabulation in 2020, many of these will be considered elderly. The concern is real.

In this issue of the European Journal of Cardiothoracic Surgery, Biancari and associates recognize this concern and analyze current series to provide recommendations for the management of acute type A aortic dissection in the octogenarian [5]. The authors identified 11 studies that met simple criteria and performed a meta-analysis. The individual numbers were small, emphasizing the fact that little data regarding this patient subgroup exist. Moreover, results focused only on early outcomes, primarily mortality and stroke. As expected, early mortality was 45%, significantly greater than the younger surgical cohort but less than those who were managed nonoperatively. From this, the authors appropriately concluded that operative repair for acute type A aortic dissection can be performed with respectable early results, but more data about intermediate outcomes and quality of life were required.

The doctors and family had rolled the dice and won.’
—Regarding the decision to perform surgery on Dr Debakey [1]

Biancari’s analysis of three current studies reporting intermediate results was limited and, thus, deserves closer inspection since this issue remains critical in decision making. Caus’ study focused primarily on septuagenarians, with only 11 octogenarians with a 1-year survival of 50% and 5-year survival of 30% [6]. The series reported by Hata divided octogenarians into those who underwent repair (n = 30) and those who refused surgery (n = 27), reporting a 1-year survival of 72% versus 43% and a 5-year survival of 49% versus 35%, respectively (p = ns) [7]. Although this study reported a survival advantage with surgical management, it failed to report the incidence of intramural hematoma (IMH), which may exhibit a more benign course in the Asian population. A more recent experience by Hata, using an expeditious approach to repair, reported a 1-year survival of 96% and a 3-year survival of 83%. This update did report that almost half of the cohort (12/27) involved IMH [8]. Last, the series reported by Piccardo (n = 52) noted similar 1-year and 5-year survival rates of 51% and 44%, respectively. Interestingly, the 1-year and 5-year survival rate was 93% and 80%, respectively, in those who survived to initial discharge [9]. This suggests that if octogenarians survive to 1 year, a respectable late survival can be anticipated. It must be emphasized, however, that the 1-year survival was only 50% in most series, odds no better than ‘rolling the dice’.

‘Surgeons had to cut separate holes into the trachea in his neck and stomach to help him breathe and eat. He needed dialysis because of kidney failure. He was on a mechanical ventilator for about six weeks because he was too weak to breathe on his own. He developed infections. His blood pressure often fell too low when aides lifted him to a sitting position. Muscle weakness left him unable to stand.’
—On Dr Debakey’s recovery [1]

Current predictors of surgical outcome such as the American Society of Anesthesia (ASA) score are either too simplistic or too subjective, providing no indication about a patient’s physiologic reserve. ‘Frailty’ is defined as a state of reduced physiologic reserve associated with increased susceptibility to disability [10]. Recent reports have demonstrated the utility of ‘Frailty Scoring Systems’ in both non-surgical and surgical patients. In general, frailty can be considered a surrogate for the global
phenotype of physiological reserve and resistance to stressors. Recent cardiac surgical studies using varying frailty indices grade strength and physical activity (grip strength, climbing stairs, rising from a chair, etc.) as well as resistance to exhaustion to categorize a patient’s degree of frailty. Patients who were deemed frail experienced more complications, longer length of stay, and a greater need for institutionalized long-term nursing care [10]. Evidence is mounting regarding the utility of these frailty scoring systems in cardiac surgery, but studies correlating frailty to outcomes after aortic surgery have yet to be performed. Although no studies have correlated frailty with quality of life, the frailty score may provide more objective information for the surgeon and the patient, when deciding to perform surgery.

This review by Biancari will not alter our decision on whether or not we operate on the octogenarian with acute type A aortic dissection. It does expose the deficiencies in our understanding about the octogenarian’s ability withstand stress and predict recovery of the physiological reserve. Thus, currently, the final decision will need to be individualized, taking into account the wishes of, first, the patient and then the family. Without better tools for predicting outcome, counseling patients and their families about these dilemmas will remain difficult with the question still remaining ‘to cut or not to cut.’

References


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