

Where Are We Headed With the Treatment of Type B Aortic Dissection?

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As a direct consequence of demographic changes and an aging population, along with an increasing awareness of the disease and better diagnostic logistics, the true (population-based) incidence of acute aortic syndrome is rising, with up to 35 cases per 100,000 persons per year in the 65- to 75-year-old age group.¹

Whereas open surgery with cardiopulmonary bypass is the main therapeutic option when the proximal ascending aorta is involved, open surgical approaches have essentially failed in the setting of dissection confined to the distal arch or descending aorta.² Although type B or distal dissection does not usually present with immediate, life-threatening complications, this condition is nonetheless threatening life with delayed mortality and morbidity.

In the setting of complications, such as malperfusion from obstruction of any side branch or the aorta itself, contained rupture (with extra aortic blood collection), or inflammatory signs of impending ruptures, thoracic endovascular aortic repair (TEVAR) has emerged as the first-line therapeutic option with promising results and a recent class I level of evidence C recommendation.²⁻⁵

In the absence of signs of obvious life-threatening complications and with adequate response to blood pressure-lowering medications, a more elective approach appears sensible today, including a careful work-up with a focus on any signs of progression or ongoing aortic inflammation.⁶ Such an approach should involve high-resolution electrocardiogram-gated imaging at discharge, with follow-up after 3 months (possibly by CT in combination with 18-fluorodeoxyglucose positron emission tomography to trace evidence of progression, expansion, or ongoing inflammation). Recent data suggest that elective, individualized TEVAR within the window of opportunity (plasticity) of approximately 100 days is the right therapeutic decision, as remodelling of the aorta is more likely to be successful within this subacute time frame.

Published evidence from registries and randomized studies confirms a long-term stabilizing effect of preemptive placement of tailored stent grafts in patients without classic criteria of complications.⁷⁻⁹ The consideration of active endovascular treatment in lower-risk patients, however, requires even more careful TEVAR procedures, optimized and individualized dissection-specific endovascular devices, and a skillset to deal with complications. A hybrid intervention suite, a team approach, and an option to

convert to proximal aorta/cardiac surgery if needed, should become standard in order to manage potential complications (eg, retrograde dissection, 2% to 6% in the United States).

To ensure the highest standard of care and optimal patient safety, regional centers of care for aortic diseases/dissections may be a solution. A similar network model for organized care of acute coronary syndrome has been extremely successful in fighting heart attacks in the Western world and has already been used in the management of ruptured abdominal aortic aneurysms in the United Kingdom.¹⁰

Along with promising and emerging treatment options for aortic dissection, an even more important concept is a lifelong surveillance effort, which must include the patients and the medical community. Any aortic center should run a follow-up clinic and offer a surveillance program.

Finally, preventive actions (such as elimination of hypertension and some form of genetic profiling for asymptomatic aortic diseases) will be needed in the near future, if not today. This is particularly relevant when we consider the mounting evidence of high incidences of dissection and its precursors in some Asian populations with a high prevalence of untreated or undertreated arterial hypertension. ■

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