Acute aortic dissections with entry tear in the aortic arch: International Registry of Acute Aortic Dissection to the rescue

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Central Message

The management of acute aortic dissections with a primary tear in the arch is controversial. IRAD investigators describe their management strategies.

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Acute aortic dissections with entry tear in the aortic arch comprise approximately 4% to 10% of acute dissections, but their management is controversial. For the arch A group, most surgeons would agree that early surgical intervention is indicated to prevent early rupture. However, the extent of surgical repair still remains somewhat controversial. Goals of surgical repair include resecting the dissected ascending aorta, preserving aortic valve function, ensuring coronary artery patency, eliminating the arch entry site, and ensuring true lumen perfusion of the arch vessels.

For the arch B group, enthusiasm for surgical intervention is less uniform, especially in uncomplicated cases, because arch reconstruction during a period of circulatory arrest managed through a left thoracotomy approach can be challenging.

The observations of the International Registry of Acute Aortic Dissection (IRAD) investigators lend significant clarity to these dilemmas. Arch A dissections were most frequently managed by open surgical intervention (78%), with a surgical mortality of 15.3%, which was lower than the mortality for endovascular management (25%) or medical management (24.3%). Interestingly, medical management was elected for 24% of patients, presumably because of extreme surgical risk. Unfortunately, the distal extent of repair is not reported, with open hemiarch reconstruction likely used for patients with the entry tear along the lesser curvature of the arch and total arch repair for patients with tears along the greater curvature. Endovascular repair was infrequently used (4%), although that approach may become more common with more advanced endovascular devices.

For arch B dissections, open surgical management was infrequently used (19%) compared with endovascular

(25%) and medical (51%) management. Open surgical repair was associated with a higher mortality (31%) than endovascular (14%) or medical (14%) management, likely for reasons associated with the difficulty of arch procedures approached through a left thoracotomy. Going forward, it will be interesting to note the relative use of endovascular techniques, because these procedures become more commonly used for complicated and even uncomplicated acute type B aortic dissections.

This experience accumulated from IRAD centers of excellence demonstrates patient-specific approaches for arch tears, especially of the arch B variety, and I suspect endovascular interventions will become more prevalent going forward. It must also be appreciated that these centers have extensive experience with the management of acute aortic dissections, a critical element when considering extensive arch reconstructions for these patients. These patients with arch A especially may benefit from transfers to institutions with significant experience with acute dissections and operations on the aortic arch.

We are indeed indebted to the IRAD investigators for these valuable insights.