Acute Type A Aortic Dissection: Surgical Intervention for All: CON

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KEYWORDS

• Type A aortic dissection • Medical management
• Surgical therapy • Dissection surgery

The time-honored dictum is that type A aortic dissection requires urgent surgery. Is medical management of aortic dissection ever more appropriate?

Certainly, medical management is part of the initial stabilization of any patient with type A dissection, during clinical and radiographic evaluation, and en route to the operating room.

There are, however, situations in which the patient's appropriate treatment continues with medical management rather than surgical therapy. This article explores those situations. Specifically considered is medical management as sole or interval therapy for the patients with the following conditions:

- completed stroke
- serious comorbid conditions (eg, cancer, advanced multiple organ dysfunction, extremely advanced age)
- prior aortic valve replacement
- presentation to the hospital beyond 48 to 72 hours of onset of aortic dissection.

STROKE IN THE SETTING OF ACUTE TYPE A AORTIC DISSECTION

Introduction of stroke into an already complicated picture of acute type A dissection results in a lower short- or long-term survival rate. Reestablishment of blood flow into the infarcted area of the brain and administration of high-dose heparin for extracorporeal circulation may induce hemorrhagic infarcts and result in intractable brain edema.[1] Many experienced cardiac surgeons have had the misfortune of performing an impeccable aortic procedure in this setting, only to see a brain-dead patient with massive intracranial hemorrhage suffer brainstem herniation from severe mass effect upon returning to the ICU. Piccione and colleagues[2] have reported on the usefulness of intentionally delaying surgery in a patient with Marfan syndrome. Deeb and colleagues[3] reported good results with a combination of early percutaneous reperfusion and delay of surgery until reperfusion injury is resolved. Intentional delay of surgery and observation under intensive medical treatment is useful for patients who have acute type A aortic dissection with cerebral infarction (**Fig. 1**).[4]

Stroke in patients with acute type A aortic dissection should constitute only a relative contraindication to operation at most, as full neurologic recovery and acceptable outcomes are possible in some cases in which prompt surgery is performed.[5] Coma may not represent an absolute contraindication for resuscitative surgery with modern techniques in hemodynamically stable patients with acute type A aortic dissection, provided that surgery is performed expeditiously after the onset of brain malperfusion.[6] Surgical repair of acute type A aortic dissection with acceptable mortality in the setting of acute stroke was demonstrated in one recent study, without worsening of neurologic condition after surgical repair.[7]

Although additional clinical studies are needed to draw definitive conclusions, the authors believe

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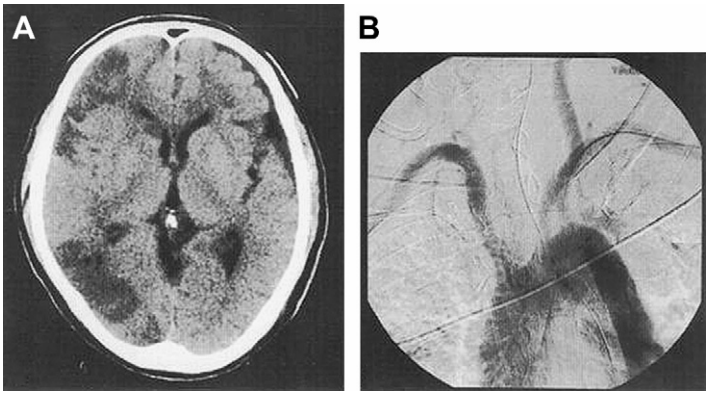

Fig. 1. (*A*) Brain CT scan demonstrating multiple low-density infarctions in the right hemisphere, with moderate cerebral edema. (*B*) Arch angiogram of the same patient, demonstrating impaired flow through the right carotid artery as a result of the dissection process. It was thought that immediate surgical intervention was not appropriate in the acute phase of the dissection. Interval medical management was undertaken, with eventual aortic replacement 3 months after initial presentation. (*From* Fukuda I, Imazuru T. Intentional delay of surgery for acute type A dissection with stroke. J Thorac Cardiovasc Surg 2003;126(1):290–1; with permission.)

that if a patient with acute type A aortic dissection presents with stroke that is in progress (the stroke is evolving), immediate surgical repair produces suitable results. On the other hand, in a completed stroke, acute type A aortic dissection is usually best managed medically, owing to the risk of devastating heparin-induced hemorrhagic infarcts occurring intraoperatively. If the infarct has been realized for 4 hours or more, or if a CT scan shows a sizable acute infarction, surgery should generally be avoided.

ADVANCED AGE AND COMORBIDITIES IN THE SETTING OF ACUTE TYPE A AORTIC DISSECTION

It is important to consider whether it is acceptable to operate for acute type A aortic dissection when the patient is at extreme advanced age. Similarly, it is important to consider whether is acceptable to operate emergently in patients with profound comorbidities, rather than taking time to provide medical treatment to relieve or optimize the comorbidities.

Mehta and colleagues[8] have shown that the risk of mortality from surgery for acute type A aortic dissection is 45% for patients 80 to 84 years of age, and 50% for those 85 or older. These formidable levels of operative risk beg the question of whether nonoperative management can produce similar results in patients with advanced age.

The authors have shown that, in those patients presenting 2 or 3 days from symptom onset, correcting comorbidities before surgery or avoiding surgery can result in acceptable outcomes. Patients presenting with acute type A aortic dissection who were denied surgery because of their advanced age or comorbidities achieved a 30-day survival rate of 42%.[9]

DELAYED PRESENTATION OF ACUTE TYPE A AORTIC DISSECTION FOR 48 TO 72 HOURS

Immediate surgical therapy is still recommended for acceptable operative candidates with acute type A aortic dissection who seek immediate treatment.[10,11] However, patients with type A aortic dissection who are referred from outside facilities or whose conditions are diagnosed several days after presentation and have survived the initial perilous period, can safely undergo a semielective surgery.[9,11] Delayed repair after optimization of the clinical condition and detailed evaluation of concomitant diseases results in outstanding long-term results.[9] If such late-presenting patients are not considered operative candidates, they may be treated with aggressive anti-impulse therapy and accomplish suitable early and short-term outcomes with in-hospital mortality of 5.2%.[11] Specifically, if a patient has presented beyond 48 to 72 hours after onset of pain, we do not take him to the operating room in the middle of the night; rather, we operate at the next daytime slot, with our full, specialized team available. These ''late presenters'' have essentially ''weathered the eye of the storm'' without rupturing the aorta and, we find, they are unlikely to rupture during a short period until the next semielective daytime surgical slot. The authors specifically published this data to provide some legal support in the literature for surgeons who, appropriately, wait until morning to operate on a late-presenting aortic dissector.

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