ACUTE AORTIC DISSECTION AND VISCERAL ISCHEMIA

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Surgeons, cardiologists, and incerventioniscs are constantly working co improve the managemenc of patients with acute aortic dissection. Recent case presencacions of acute dissections at conferences have again brought to light the importance of visceral circulation when the abdominal aorta is involved in the disease process. These presentations have revealed chat many physicians treating chis condition need a better understanding of what may happen with dissection and of the critical time window for diagnosing and managing acute lesions.

Two classifications of aortic dissection exist. The Stanford classification of dividing the disease into just two groups (A and B) has won general acceptranee. As the sire of incimal rear is often difficult to identify, chis typing is based on che portions of the aorta involved in the dissection. The DeBakey/Henly classification is based both on the location of the imimal tear and the extent of the dissecting process.[1] Type I involves the ascending aorta and by definition extends distally into the abdominal aorta and possibly beyond. Type II is localized to the ascending aorta, possibly extending partially into the transverse aortic arch. Type IV involves only the descending aorta, while Type III originates in the descending aorta and extends distally into the abdominal aorta and possibly further (Fig 1). Types II and IV are capable of complete excision with restoration of blood flow to normalcy. Types I and III by definition state involvement of the abdominal aorta and present additional risks and needs for special study and management.

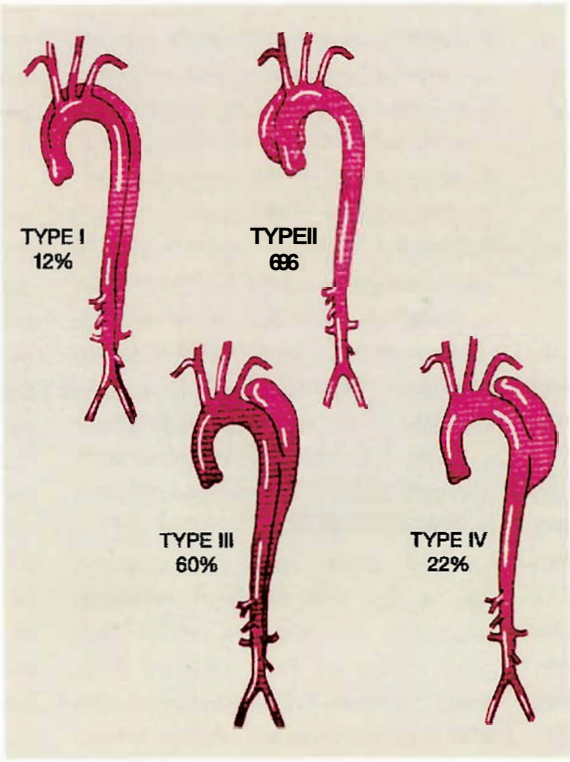

Figure 1. Dissecting Aneurysm of Aorta
DeBakey, Henly et.al. Circulation 1961

Dr. Y. Joseph Woo, in an arcicle in *Vascular Specialist* (May/June 2006), has stated that acute aorcic dissections are best managed in specialized centers.[3] While his comments are mainly about aneurysms involving the ascending aorta, the same logic is applicable to descending aneurysms. This conclusion is mainly based on newer scanning techniques and the daily improvement of intra-aortic stenting and ocher intervencional techniques. It is assumed chat chese centers also possess the armamentarium of the cardiac surgeon.

In the early days of managing acute dissection, immediate operacion was thought advisable for all dissections involving the ascending aorta as sudden death frequently occurred within 48 to 72 hours of the onset of symptoms. The mechanism of death was usually a ruptured aneurysm within rhe pericardium that resulted in ramponade and circulatory failure. Other fatal events were from acute coronary arcery occlusion, acute aortic valvular insufficiency, or free rupture of the dissection. Surgeons resected the site of intimal tear, corrected the valvular problem when needed, and carefully oblit-erated the false aortic lumen. Restoration of flow inco rhe true lumen was thought adequate treacmenc, and the distal perfusion was left to chance. This is not the case today.

Dr. Myron W. Wheat Jr. in 1965 suggested chat treatment of descending aortic dissections could be best handled medically with resulcs equal or superior to surgery.[2] In many cases, patients managed in this manner had visceral perfusion evaluated only by physical signs and/or symptoms. A$_{g\,a}$in, this is not the case today.

The dissecting process may occlude or compromise mesenreric and/or renal vessels. Following renal output may insure survival of the patient but may not insure against the loss of a kidney. However, ischemic change of the mesentery and viscera may be so insidious that by che time it becomes clinically evident, ir is coo late to salvage the patient. Thus, whenever che infradiaphragmacic aorta is involved with dissection, immediate evaluation

of mesenceric perfusion should be done. If a CT scan with contrast does not provide adequate information, aortography should be performed.

Acute aortic dissection has presented in many forms, usually with some type of chest pain and at times with other symptoms. Thus, physicians seeing these patients should initially consider the possibility of dissection. A standard chest X-ray may show little change. Lack of mediastinal widening gives a false sense of security. An immediate CT is the best tool to rule out an acute dissection and often can adequately evaluate mesemeric perfusion. After surgery, the anatomy and consequently blood flow may change, requiring re-evaluation of mesenteric flow. If the patient is to be managed medically (as in Type IV), the physician should closely observe adequate mesemeric and visceral flow to detect possible changes in visceral blood flow. There is no worse finding than, after several days, exploring an abdomen and noring the encire small intestine to be necrotic and beyond salvage.

If it is determined that malperfusion exists, it may be corrected with bypass surgery or, preferably, by having the interventionalist fenestrate the aorta or stem the mesenreric arcery in an effort to restore circulation to the gut. Failure can be accepted, but not making the effort cannot.

Forrunacely, malperfusion syndrome associated with acute aortic dissection is a rare complication. With the advent of newer scanning methods and improved incerventional techniques, this lethal aspect of abdominal aortic dissection can now be successfully addressed.

REFERENCES:

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