Insights on the DISSECT Classification System

Michael D. Dake, MD, describes the goals, details, and real-world applicability of a modern, mnemonic-based classification system for aortic dissection.

A new approach aimed at aiding in the categorization of aortic dissection has been developed by the Working Group on Aortic Diseases of the DEFINE Project. The mnemonic-based DISSECT classification system was recently published by Michael D. Dake, MD, et al, in the *European Journal of Vascular & Endovascular Surgery* (2013;46:175–190).

In the article, the authors contend that although classification systems for aortic dissection provide important guides to clinical understanding, the relevance of traditional categorization schemes is being questioned in an era when endovascular techniques are increasingly used to manage this often-complex presentation. Recognizing the evolution in both the understanding of the disease and the current options for treating its many variations, the DEFINE investigators sought to develop a categorization system that focuses on the specific anatomic and clinical manifestations of the disease process that are most relevant to contemporary decision making.

"I'm not sure anyone at any stage of training or clinical practice is completely comfortable when encountering a new patient with aortic dissection," commented Dr. Dake when discussing the DEFINE Project with *Endovascular Today*. "However, as perplexing and intimidating as aortic dissection can be, the majority of cardiovascular specialists have a level of comfort with the DeBakey and Stanford classification schemes traditionally used to triage patient management. There are good reasons why these categorizations of disease have stood the test of time—almost 50 years since their initial descriptions. But, in the years since these 'classics' were proposed, our collective understanding of the complexities of aortic dissection has evolved, along with the development of new treatment algorithms, including the introduction of endovascular management options."

> Endovascular therapy is increasingly considered as an alternative to medical management or open surgical repair in select cases of type B aortic dissection.

In the publication, the investigators discuss how endovascular therapy is increasingly considered as an alternative to medical management or open surgical repair in select cases of type B aortic dissection. And, although endovascular aortic repair is not currently used for patients with type A aortic dissection, catheter-based techniques directed at peripheral branch vessel ischemia that may complicate type A dissection are considered valuable adjunctive interventions, when

DISSECT

Duration of disease

Intimal tear location

Size of the dissected aorta

Segmental

Extent of aortic involvement

Clinical complications of the dissection

Thrombus within the aortic false lumen

indicated. Dr. Dake further detailed one example of why endovascular repair options call for modern, specialized consideration.

"Aortic endografting in a patient with aortic dissection is predicated on successfully covering the primary entry tear," he said. "Identifying the exact location of this tear and its relationship to branch vessels is critical in determining an individual patient's anatomic suitability for endograft management. Neither of the traditional schemes for dissection categorization take into account identification of the precise location of the entry tear."

Regarding the specific goals of DEFINE Project, Dr. Dake commented that the authors of the DISSECT mnemonic system set out to create a memorable, easy-to-assimilate method of accounting for the critically important factors that influence contemporary decision making in a patient with an aortic dissection. They anticipate the mnemonic-based approach will help simplify the triage process that leads to a patient's course of management by prompting health care providers to focus on six select features of dissection that comprise the most salient clinical and imaging findings based on contemporary practice.

Dr. Dake emphasized that the DISSECT categorization is not intended to dictate split-second, emergent management decisions, but rather to provide a facilitative framework for confident and straightforward communication of the aspects of aortic dissection that influence its current management. These aspects include key findings for considering an endovascular procedure, which are not taken into account by the DeBakey or Stanford categorization schemes. The authors anticipate that DISSECT will supplement the traditional classification schemes by encompassing the critical anatomic factors these two systems consider while recognizing the key clinical manifestations and additional imaging findings that inform current contemporary therapy.

So, how might this system translate to a real-world setting? Dr. Dake illustrates the concept as follows.

"Let's fast forward to the near future. 'Scene: A hospital emergency room. A resident trainee from ER, cardiology, surgery, or radiology confidently cycles through D-I-S-S-E-C-T, ticking off one by one the key features of a recently admitted patient with acute dissection. He communicates to a specialist the essence of what is needed to understand aortic and branch vessel involvement while confidently contributing the facts necessary to help direct the course of therapy—medical management, open surgical repair, or endovascular treatment.' Now, that would be a success." ■

Michael D. Dake, MD, is the Thelma and Henry Doelger Professor (III) in the Department of Cardiothoracic Surgery at Stanford University School of Medicine and Falk Cardiovascular Research Center in Stanford, California. He stated that he has no financial interests related to this article. Dr. Dake may be reached at mddake@stanford.edu.