Commentary: Chronic type A dissection: When to operate?

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Central Message

Surgical intervention should be considered at an earlier stage for patients with chronic type A dissection than nondissecting aneurysms.

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Current guidelines for surgery in patients with chronic type A dissection base the operative indication on the natural history of aneurysmal degeneration of the ascending aorta, thus an aortic diameter of greater than 5.5 cm. Data to support this recommendation are limited to a few small studies.^{1,2} In the current issue of the *Journal*, Kim and colleagues³ report an interesting study of 142 patients with chronic type A dissection treated during an 18-year period. A total of 60 patients underwent operation up-front, but nonoperative treatment was decided in 82 patients, among whom 74 (90.2%) were followed for a mean of 6.4 years. Adverse aortic events occurred in 19 of these patients (3.5%/patient-year), and an additional 6 patients (1.13%/patient-year) underwent elective operation during the follow-up period. Risk of aortic-related events at 5 years was estimated at 13.3%, 14.9%, and 16.8% for aortic diameters of 50, 55, and 60 mm, respectively. Older age, a larger baseline aortic diameter, presence of hypertension, and annual growth rate were identified as predictors of aortic adverse events.

These interesting data suggest a worse prognosis of chronic type A dissection compared with nondissecting aneurysms of the ascending aorta. The authors rightfully conclude that operative indication should be reviewed at a lower aortic diameter threshold than for nondissection aneurysms. Further in-depth analysis of the article allows to better define which subset of patients may benefit from an earlier operation. Because of a decrease in the estimated risk of aortic rupture with time, chronic type A dissection is defined by the diagnosis of an intimal flap in the ascending aorta after 14 days of the initial symptoms. However, the risk of rupture, although lower than the initial 2 weeks, is still significant within the 4 to 6 weeks after the initial aortic tear. Thus, a patient with a

recent (within 4-6 weeks) history of chest pain should be considered at higher risk of aortic rupture and operated at a lower aortic diameter threshold. Data of the present study supporting advanced age as a predictor of adverse aortic event may be misleading. One should be cautioned to recommend a more conservative approach in the younger age group. Sudden unexplained death due to an unrelated aortic cause may be more frequent in the elderly population and account for a higher total adverse-related event rate in the elderly. Accordingly, 7 of 9 patients (77.8%) died suddenly without an identifiable cause in the group aged more than 70 years compared with 4 of 10 patients (40%) aged less than 70 years. Furthermore, as well stated by the authors, the cumulative risk of adverse aortic events with time in a young patient supports an early operative approach in the young patients with chronic type A dissection. DeBakey type also should be assessed in the decision of when to operate. Within the present study, 10 of 82 patients (12.2%) treated medically presented a chronic type II DeBakey dissection compared with 33 of 60 patients (55%) with up-front surgery. The complete removal of the dissected tissue in patients with type II dissection portends a significantly better prognosis and should prompt an earlier surgical intervention. The extent of aortic resection in patients with type I chronic aortic dissection is debatable because aortic rupture distal to the ascending aorta may supervene, as observed in 1 patient in the present study. Extending the resection to a full arch with or without

a frozen elephant trunk resection may be considered in young, low-risk patients with moderate dilatation of the arch/descending aorta.

The study by Kim and colleagues³ sheds new light on the natural history of chronic type A dissection. Surgical intervention should be considered at an earlier stage than nondissecting aneurysms. Further studies may allow to better delineate at which aortic threshold less than 55 mm surgery should be recommended. However, an early interval (<4-6 weeks) between the diagnosis and intimal tear, and presence of a DeBakey type II dissection, especially in young patients with good life expectancy,

should dictate an early surgical intervention at a diameter less than 55 mm.

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