Surgical Treatment of Takayasu’s Arteritis

Takayasu’s arteritis is an idiopathic, systemic inflammatory disease and manifests primary involvement of elastic arteries including the aorta, proximal parts of its major branches and the pulmonary artery trunk (1–3). Takayasu’s arteritis predominates in women of reproductive age, and appears more frequently in Orientals whereas temporal arteritis predominates in Caucasian. According to The American College of Rheumatology 1990 Criteria for the Classification of Takayasu’s Arteritis, the following six criteria were selected for the traditional format classification: onset at age less than or equal to 40 years, claudication of an extremity, decreased brachial artery pulse, greater than 10 mmHg difference in systolic blood pressure between arms, a bruit over the subclavian arteries or the aorta, and arteriographic evidence of narrowing or occlusion of the entire aorta, its primary branches, or large arteries in the proximal upper or lower extremities (4). Vascular involvement may appear as arterial stenosis, occlusion, dilatation, and/or aneurysms. It is well documented that this disease follows a cyclic course, including acute onset, subsequent chronic state with progressive deterioration, and periodical exacerbation in some cases. The cause of Takayasu’s arteritis is unknown but is thought to be an autoimmune disease, and chronic infection is considered to be one of the triggering mechanisms. Human lymphocyte antigen (HLA)-linked genes are also thought to be involved in the development of Takayasu’s arteritis (5–9).

In general, Takayasu’s arteritis and temporal arteritis are classified as a vasculitis entity, giant cell arteritis. The major differences between the two syndromes are the age at onset, the severity and distribution of vascular involvement, the racial distribution, and prognosis. Takayasu’s arteritis is a rare disorder that affects the aorta and its main branches in young women, whereas temporal arteritis is a common disorder that affects small- to medium-sized arteries of elderly women. The pathology of Takayasu’s arteritis extends to all three arterial layers, whereas in temporal arteritis the disease affects the media and adventitia less. Steroids are only palliative in Takayasu’s arteritis with a high incidence of recurrence, whereas steroids in temporal arteritis are curative with good long-term results. Finally, surgery plays an important role in patients with Takayasu’s arteritis, but surgery is employed infrequently in those patients with temporal arteritis (10).

The inflammatory process of Takayasu’s arteritis leads to predominantly chronic arterial occlusion and occasionally arterial aneurysm formation. Critical vascular lesions should be treated by angioplasty or surgical revascularization. Indications for surgical repair or angioplasty include: 1) renovascular stenosis causing significant hypertension, 2) coronary artery stenosis leading to myocardial ischemia, 3) extremity claudication induced by routine activity, 4) cerebral ischemia and/or critical stenosis of three or more cerebral vessels, 5) aortic regurgitation, often associated with dilatation of the aortic root, and 6) thoracic or abdominal aortic aneurysms with a size of over 5 cm in diameter (1, 11, 12). Rupture of aneurysmal lesions is the principal cause of death in patients with Takayasu’s arteritis as well as heart failure, secondary to severe persistent hypertension or aortic insufficiency (13). In some cases, atypical abdominal coarctation is present which causes severe hypertension refractory to medical treatment and surgical repair is indicated.

In the case reported in this issue, Moncada et al. (14) described a 39-year-old woman who underwent extraanatomical aorta-aortic bypass for atypical coarctation of the aorta due to Takayasu’s arteritis 23 years earlier.

See also p 934.

The patient was concomitantly associated with type IIa hyperlipidemia and non-insulin-dependent diabetes mellitus (NIDDM), thus careful medical treatment for appropriate control of these coexistent diseases as well as Takayasu’s arteritis was essential and certainly contributed to the long-term patency of the prosthetic graft reported in this issue. Generally, reconstructive surgery for Takayasu’s arteritis is successful, but anastomotic stenosis, insufficiency, or relapse of pseudoaneurysms at the anastomotic sites is not uncommon in the later period (15, 16). Proper timing of improved surgical techniques and postoperative appropriate control are invaluable in the management of Takayasu’s arteritis to minimize the risk of graft failure.

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