SURGERY

Long-term success of CABG in Kawasaki disease

Soichiro Kitamura and colleagues have reported their findings from the 25-year follow-up of children who underwent CABG surgery for Kawasaki disease. Long-term survival was excellent, but event-free survival declined over time. Outcomes were far better in patients who received internal thoracic artery (ITA) grafts than in those who received saphenous vein (SV) grafts. The success of CABG in this setting refutes initial scepticism about the procedure: "at the beginning [the 1970s], many … pediatric physicians said that this inflammatory coronary disease would not be a good candidate for, or amenable to, surgical treatment, because of its diffuse arteritis nature", explains Dr Kitamura.

Kawasaki disease is an inflammatory condition of unknown etiology that predominantly affects young children. This condition represents the most common pediatric form of acquired heart disease worldwide. Kawasaki disease is associated with severe cardiovascular sequelae, including aneurysmal dilatation and the development of obstructive lesions with fibrosis of the coronary arteries.

Kitamura *et al.* first performed CABG surgery in a child with Kawasaki disease at their institutions in Japan in 1976; since that time, 114 patients have undergone the procedure at their institutions. The patients' age at surgery varied widely (1–19 years, median 10 years). Kawasaki disease had developed in 51 of these patients (45%) during their first year of life. One-third of patients had a history of myocardial infarction and 16 of these individuals had a left ventricular ejection fraction of less than 50%.

During follow-up (median 19 years, maximum 27 years), five patients died and another 31 patients experienced cardiac events, which included indications for repeat revascularization with CABG surgery or percutaneous coronary intervention in 26 individuals. Survival at 10, 20, and 25 years was 98%, 95%, and 95%, respectively. Although most patients initially had good outcomes, event-free survival declined markedly over time (from 87% at 5 years to 60% at 25 years). These figures reflect the development of new lesions and atherosclerosis during adulthood. Notably, 20-year graft patency was just 44% for SV grafts, but 87% for ITA grafts. Dr Kitamura postulates that because "ITAs are biologically active grafts producing nitric oxide and prostacyclin, [they are] much more resistant to atherosclerotic changes than … SV grafts".

The investigators stress that awareness of Kawasaki disease in the adult cardiology community is vital, because increasing numbers of pediatric patients with this condition are surviving to adulthood and are likely to experience cardiovascular complications in later life.

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Original article Kitamura, S. *et al.* Twenty-five-year outcome of pediatric coronary artery bypass surgery for Kawasaki disease. *Circulation* **120**, 60–68 (2009).