The Coexistence of Abdominal Aortic Aneurysm and Advanced Gastric Cancer Associated With Recurrent Angina After Coronary Artery Bypass Grafting

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A 76-year-old man with abdominal aortic aneurysm (AAA) and concomitant gastric cancer, who had undergone coronary artery bypass grafting (CABG), presented with recurrent exertional angina. Both lesions, the AAA and advanced gastric cancer, exhibited an absolute indication for urgent surgery. Coronary revascularization with percutaneous transluminal coronary angioplasty (PTCA) was carried out successfully before abdominal surgery. A one-stage abdominal operation was performed safely. The need for coronary revascularization complicates the treatment strategy for these patients with associated coronary artery disease. PTCA is the best option, especially if the patient presents with recurrent angina after prior CABG.

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Fig 1. Coronary angiography. The right coronary artery shows an occlusion with a side branch, which gives rise to a collateral to the occluded left anterior descending artery (left). The left anterior descending artery is occluded, and the circumflex artery shows 99% stenosis (right). All the saphenous vein grafts are totally occluded. Angiography demonstrates an infrarenal abdominal aortic aneurysm (center).

Fig 2. A 6-cm-diameter abdominal aortic aneurysm is disclosed by computed tomography.

(PTCA) was performed before abdominal surgery. PTCA of the totally occluded left anterior descending artery and the stenosed left circumflex artery was carried out successfully (Fig 3). Because the aneurysm was large enough to threaten rupture and the cancer was so advanced, a one-stage operation was performed 4 weeks after coronary revascularization. The AAA was first replaced with an albumin-coated Y graft, and then gastrectomy and lymphadenectomy were performed. The patient showed an uneventful recovery and was discharged 4 weeks after the operation.

**Discussion**

Patients with AAA and concomitant abdominal malignant tumor are not uncommon.

Between March 1987 and December 1995, 44 patients with an AAA were admitted to our unit for elective surgery, and 3 of them were found to have a concomitant malignant tumor. Two of them had gastric cancer and the other had a renal cell carcinoma. However, whether the surgical priority in such patients is the AAA or the malignancy is controversial. In 1967, Szilagyi et al. suggested that the most important point is to determine an absolute indication for urgent treatment of each lesion. Obviously, the lesion absolutely indicated for operation should be treated first. Our patient had absolute indication for both lesions. The AAA had a maximal diameter of 6 cm and was at high risk of rupture, and the gastric cancer was advanced. Therefore, a one-stage operation was thought to be the best treatment in this case.

CAD is common in patients with AAA. The cardiac complications caused by CAD, such as myocardial infarction, arrhythmia, and congestive heart failure, have been identified as the leading causes of early mortality in the surgical treatment of an AAA. Our patient presented with recurrent effort angina and impaired left ventricular function owing to graft failure and old myocardial infarction. Myocardial revascularization was required for safe surgery. It has been reported that the risk of vascular surgery is low in patients who have previously undergone CABG. This benefit can be demonstrated with certainty, however, only when the second procedure is performed more than 12–24 months after CABG. An AAA left untreated for such a long time carries a high risk of rupture. In Smith's study of 38 patients, the incidence of AAA rupture was 10.5% while they were awaiting the second procedure. The overall
mortality rate for the simultaneous AAA repair and CABG is slightly higher than when the two-stage operations are performed separately. Our patient had undergone CABG previously, but all grafts were unfortunately occluded. Recently, many studies have suggested alternative operative techniques to improve myocardial protection and have documented reduced mortality in reoperative patients but reoperation is still technically difficult and is associated with a higher mortality rate than primary CABG. Thus, combined or staged revascularization with CABG would have been of little benefit in this patient.

PTCA was selected as an alternative method of revascularization. The high restenosis rate after successful PTCA in chronic total occlusion remains a significant problem. Taking the time course of the restenosis mechanism into consideration, our best choice of surgical timing was within 4 weeks after PTCA. When the operation is performed at that interval the risk of cardiac ischemic event is reduced, although restenosis may occur after the surgery.

References