Endarterectomy for diffuse right coronary artery disease

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Citation


Abstract

Coronary endarterectomy has become a safe procedure. In this study, we report a case that we applied a successful endarterectomy for diffuse right coronary artery disease.

INTRODUCTION

Coronary endarterectomy has been shown to be an effective adjunctive technique of revascularization for diffuse coronary artery disease(1). Endarterectomy for diffusely atherosclerotic right coronary artery for selected patients did not bring additional mortality and morbidity to the CABG procedure, and short term clinical and angiographic results were excellent(2).

CASE PRESENTATION

Our case was a 59-year-old male. He was suffering from chest pain. Our patient was in NYHA functional class II. His coronary angiography revealed subsequent and showed 2 vessels disease. Coronary angiography showing significant stenoses of left anterior descending (LAD) and right coronary artery. His transthoracic echocardiography showed minimal aortic insufficiency and pulmonary arterial pressure was measured as 30 mmHg. Left ventricular ejection fraction was 60%. Blood pressure values were in the normal range. The patient had no significant changes in standard biochemical findings on admission. He was a smoker. The cholesterol and triglyceride levels were within the high range.

He underwent coronary revascularization with these findings. Following median sternotomy, left internal thoracic artery and saphenous vein of the right leg were harvested. After heparinization, extra-corporeal circulation was established between the venae cavae and the ascending aorta. A cross clamp was placed on aorta and by antegrade intermittent isothermic blood cardioplegia from aortic root, cardiac arrest was established. Hypothermia was moderate (29ºc). Distal anastomosis to the right coronary artery was carried out with autologous saphenous graft. In this step we endarterectomize this diffusely diseased artery (Figure 1&2).

Figure 1

Figure 1

The left internal thoracic artery was anastomosed to the LAD. He did not require inotropic support during weaning from cardiopulmonary bypass and early postoperative period. The volume of blood transfused was two units. The quantity of mediastinal drainage was 600 cc. He was extubated after an intubation of 7 hours and stayed in the intensive care for 2 days. He didn’t have additional problem and he was discharged home with surgical success and without any cardiac complications at 8th day. He was recommended to admit our outpatient clinic for follow-up.
DISCUSSION
Due to reported high morbidity and mortality, surgeons tend not to endarterectomize the diffusely diseased right coronary artery (2).

In the study of Marzban et al., one of their goal was to investigate the safety of single- and double-vessel coronary endarterectomy as an adjunct to coronary artery bypass grafting in patients with diffuse coronary disease (3). In this study; 9443 patients who underwent isolated coronary artery revascularization over a 4-year period, they found 310 patients (3.28%) who underwent concomitant coronary artery endarterectomy, 39 of whom (12.6%) required double endarterectomy (Group 2) and the rest of whom required single endarterectomy (Group 1). Regarding postoperative myocardial infarction as evaluated by electrocardiography and the MB isoenzyme of creatine kinase, 13% of the patients in Group 1 and 15.4% in Group 2 were so affected. The early mortality rate was 3.3% in Group 1. In univariate analysis, the following variables were significant: 3-vessel disease, postoperative atrial fibrillation, dialysis, length of hospital stay, and death. There was no association between endarterectomy of particular vessels and perioperative myocardial infarction (3).

In the study of Erdil et al.; they compared the endarterectomized right coronary patients with patients having total occlusion of right coronary artery not needing endarterectomy who received right coronary artery (RCA) bypass (2). 1226 patients had coronary artery bypass grafting (CABG), of whom 59 had right coronary artery endarterectomy (REC) along with RCA bypass with saphenous vein graft. They compared the results of 59 RCE patients with 50 patients who underwent RCA bypass without RCE. The RCE group had a higher incidence of diabetes. There were no statistically significant differences between groups for mortality and morbidity. For surviving patients no recurrence of angina occurred during the follow-up (2).

In the study of Abrahamov et al.; 4839 patients underwent surgical revascularization. Coronary artery bypass graft surgery (CABG) was combined with right coronary artery endarterectomy (RCA-E) in 242 patients (4). Preoperative variables revealed of three-vessel disease in the RCA-E versus the CABG patients. The 30-day mortality rate for CABG was 2% versus 2.5% for RCA-E. Actuarial analysis at 6, 12, and 24 months showed late mortality rates of 0.8%, 1.3%, and 2.1% for CABG; 1.2%, 3.7%, and 3.7% for RCA-E. Late MI occurrence was 0.4%, 0.4%, and 0.7% for CABG; 1.5%, 1.5%, and 2.7% for RCA-E. And finally they conclude that the use of coronary endarterectomy to achieve complete revascularization in patients with diffuse distal coronary artery disease is a reasonable option, associated with a minimal addition in complication rates (4).

References
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