Simultaneous Radical Gastrectomy and Coronary Artery Bypass Grafting: a Case Report

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Abstract Coexistence of coronary artery disease and cancer with both requiring surgical treatment at the same time is rare. A 74-year-old male underwent elective coronary artery bypass grafting for unstable angina. In preoperative workup, the patient was incidentally discovered to have anaemia secondary to occult blood loss in his stool. This led to a preoperative upper GI endoscopy which showed a gastric carcinoma. Since both conditions required surgery, it was decided to perform simultaneous coronary artery bypass grafting (CABG) followed by distal radical gastrectomy. CABG was done using low-dose heparin, and after closing sternotomy, the radical gastrectomy was performed. Postoperative recovery was uneventful, and patient was discharged in stable condition on day 14. Follow-up after 6 months revealed no recurrence. Feasibility

of simultaneous CABG and gastric cancer surgery, in particular, and various management strategies, in general, is discussed.

Keywords CABG · Coronary artery disease · Coronary artery bypass grafting · Gastric carcinoma · Distal radical gastrectomy · Simultaneous surgery

Introduction

Planning surgical strategy in a patient with significant coronary artery disease (CAD) and concomitant gastric carcinoma is a great challenge. CAD is an important cause of morbidity and mortality for noncardiac surgical procedures. Challenges include timing of cardiac and abdominal surgeries, which can either be performed in two stages or simultaneously. However, in recent years with improvement in surgical technology, simultaneous coronary artery bypass grafting (CABG) with gastrectomy is advocated [1]. This has an advantage as it does not delay the treatment of gastric cancer. There are only few cases reported in the literature and none from our country. We therefore report a case of unstable angina with gastric carcinoma which successfully underwent simultaneous CABG and distal radical gastrectomy.

Case

A 74-year-old patient, with diabetes, hypertension and old left CVA, was admitted with retrosternal chest pain and exertional dyspnoea. He was diagnosed as suffering from unstable angina. His coronary angiography revealed triple vessel disease, and he was advised to undergo CABG.

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Fig. 1 Endoscopic Ca stomach

On investigations, he was found to have anaemia with haemoglobin level 7.8 g%. On further evaluation of anaemia, stool occult blood was positive. His upper GI endoscopy revealed a 5 × 5 cm ulcerated lesion along the lesser curvature of the stomach, and biopsy confirmed an adenocarcinoma (Fig. 1).

CT abdomen showed an enhancing lobulated mass along the lesser curvature of the stomach at the junction of the distal body and the antrum with enlarged perigastric lymph nodes (Fig. 2). A multidisciplinary team of specialist, after discussing with the family, decided to perform simultaneous CABG with radical gastrectomy.

Through a midline sternotomy, CABG was done on pump with four grafts. After closure of sternotomy, the abdomen was opened through an upper midline incision. A distal radical gastrectomy with D1 lymphadenectomy and gastrojejunostomy was performed.

Postoperatively, he was kept in SICU and was maintained on IV medications and subcutaneous heparin until his oral diet was started. His postoperative stay was uneventful. He was started on oral diet on day 3 and shifted out of ICU on day 5. Histopathological examination showed moderately

Fig. 2 CT scan of Ca at a lesser curve

differentiated adenocarcinoma up to muscularis propria and no lymph node metastases (0/12).

Discussion

Coexistence of malignancy in patients undergoing surgery for coronary artery disease or valvular disease requires careful risk-benefit analysis [2]. There is no agreement whether to perform these operations simultaneously or in a two-stage manner. A staged CABG procedure either before or after curative surgery for cancer is associated with advantages and disadvantages, determined in part by the organ involved in cancer and the urgency of the requirement for surgical revascularisation. In general, CABG before cancer surgery protects the patient from the risk of perioperative infarction during cancer surgery and confers a certain degree of haemodynamic stability during subsequent surgery. It delays the institution of potentially curative cancer surgery and subsequent chemotherapy or radiotherapy which may result in advancement of cancer. Further antiplatelet agents and anticoagulants required after cardiac surgery may result in bleeding from GI cancer. If CABG is performed after cancer surgery, patients are at increased risk of perioperative myocardial infarction and cardiac mortality.

In recent years with improvement in surgical technology, simultaneous CABG and gastrectomy are advocated [1]. This has an advantage as it does not delay treatment for gastric cancer.

First time simultaneous CABG with gastrectomy for cancer was published in 1994 as a case series which compared it with staged surgery and showed that simultaneous surgeries are equally safe with other reports supporting the simultaneous surgical strategy [3–5].

Ideally in simultaneous surgery, CABG should be performed off pump as cardiopulmonary bypass enhances the systemic inflammatory response especially in patient with malignancy that requires prolonged and special postoperative care [6]. Our patient did not allow us to do off-pump CABG due to his haemodynamic instability even with slight manoeuvring of his heart.

In conclusion, this case shows that CABG in conjunction with gastrectomy is a safe and effective procedure and has an advantage over two-stage procedure. Thus, two killers can be tackled simultaneously.

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