

Case Report

Off-Pump Total Myocardial Revascularization for Dextrocardia and Situs Inversus

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Abstract

We report our experience of a patient suffering from severe coronary artery disease and situs inversus totalis with dextrocardia. The surgeon, standing on the left side of the patient, performed off-pump coronary artery bypass grafting by harvesting right internal mammary artery.

Introduction

Dextrocardia, defined as the presence of a right-sided heart, can be mirror image or isolated. Situs inversus totalis with dextrocardia has an approximate prevalence of 1-2/10,000 normal population [1]. The rate of atherosclerotic heart disease in people with this condition is similar to the general population [2]. We present our experience with a case of situs inversus totalis with dextrocardia. The patient, who had coronary artery disease, underwent off pump coronary artery bypass grafting (CABG) with the surgeon standing from left side of the patient and right internal mammary artery (RIMA) harvested for bypass grafting instead of left internal mammary artery (LIMA).

Case report

A 55-year-old diabetic woman had history of chronic stable angina for last one year. Chest x-ray showed a right-sided heart and gastric bubble and a left-sided liver. Echocardiography revealed dextrocardia and concentric left ventricular hypertrophy. Left ventricular ejection fraction (LVEF) was 59%. She underwent coronary angiography which revealed three-vessel disease with significant stenosis in proximal and mid portions of left anterior descending (LAD) artery, proximal portion of left circumflex (LCX) artery and mid and distal portions of right coronary artery (RCA). Elective CABG was considered for the patient.

A median sternotomy revealed that the heart occupied exactly the mirror image its normal position. After orienting ourselves to the mirror image location of coronary arteries and heart chambers, we decided to perform all the anastomoses

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Dr.Md.Masumul Gani Chowdhury, Associate Prof (acting) Department of Cardiac Surgery, Khwaja Yunus Ali Medical College & Hospital, (3) Dr. Badruzzaman, Assistant Prof Department of Cardiac Surgery, Khwaja Yunus Ali Medical College & Hospital, (4) Dr.SMA Kalam, Department of Cardiac Surgery, Khwaja Yunus Ali Medical College & Hospital, from the left side of the patient. The RIMA, as in-situ skeletonized conduit, and saphenous vein were harvested. Off-pump CABG was performed with the surgeon standing on the left side of the patient. The RIMA and saphenous vein conduits were grafted on the LAD, obtuse marginal (OM) major and posterior descending artery (PDA), respectively. After reversal of heparin and securing hemostasis, the chest was closed in routine fashion. The postoperative course being uneventful, the patient was discharged on 8th postoperative day in good condition.



Fig. 1 Chest radiograph

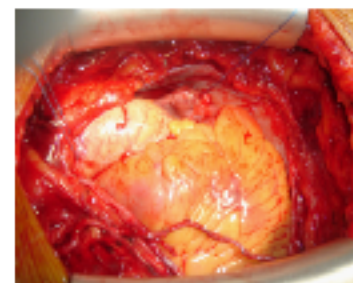


Fig. 2- Photograph showing Right Atrium on left side; pulmonary artery

and aorta in reverse positions, and harvested skeletonized RIMA.



Fig. 3. Surgeon performing beating heart CABG standing on left side of the patient.

Discussion

Dextrocardia with situs inversus totalis is a rare finding, with prevalence of 1-2/10,000 normal population [1]; only few cases of this anomaly in respect of coronary artery disease and CABG are reported in the existing literature [2-4]. The rate of coronary artery disease in those with this anomaly is similar to that in the normal population [2].

There are significant points in our method that merit due attention. First, the surgeon stood on the left side of the patient, in stead of usual right side of the patient. The RIMA, rather than LIMA, was harvested for grafting on the left anterior descending artery; the RIMA was harvested as skeletonized conduit. We performed of-

pump CABG; literature shows that most surgeons performed on-pump CABG in such type of dextrocardia cases. Most surgeons found only one such case of dextrocardia in his life [5].

Conclusion

With the exception of a mirror image coronary anatomy, this patient with dextrocardia and situs inversus totalis presented no unusual challenge to a completely off-pump coronary revascularization using conduits.

References

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