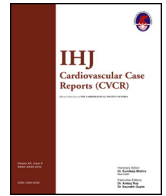




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Case report

Implantation of a bioresorbable vascular scaffold for a left anterior descending artery lesion in a patient with dextrocardia and situs inversus: A rare case with three-year follow-up[☆]

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ABSTRACT

Dextrocardia with situs inversus is a rare clinical condition. The diagnosis and treatment of acute coronary syndrome in such patients may pose challenges during presentation, interpretation of diagnostic findings, and at catheterization. We herein report a rare case in which the patient presented with 90% stenosis of the left anterior descending artery. He was treated with primary percutaneous coronary intervention with a bioresorbable vascular scaffold. The procedural outcomes and follow-up events up to 3-years have been described.

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Introduction

Situs solitus is a non-random and most commonly observed arrangement of the unpaired viscera along the left–right axis (with respect to the midline) in the human body, illustrated by the placement of the heart, stomach, and spleen to the left. Reversal of the lateralized organs results in situs inversus (mirror image) arrangement.¹ Dextrocardia is a condition in which the location of the heart is inverted, that is, the heart is in the right instead of the left hemithorax with its apex pointing toward the right side of the chest.² Dextrocardia with situs inversus is a rare autosomal recessive congenital disorder.²

Dextrocardia has been estimated to occur in one in over 12,000 pregnancies, with about 37% of these cases presenting with situs inversus.³ The prevalence of cardiac disease in patients with dextrocardia and situs inversus is similar to that noted in the general population.^{4,5} The successful use of primary angioplasty and stenting in this patient cohort has been described in several published case reports.^{6–10} However, there have been no studies or case reports to date on the use of bioresorbable vascular scaffolds (BVS) in patients with dextrocardia and situs inversus presenting with

acute myocardial infarction (AMI). We report a rare case of acute coronary syndrome (ACS) in a patient with dextrocardia and situs inversus, treated with a novel BVS AbsorbTM and followed up for 3 years.

Case report

A 41-year-old man, a known case of dextrocardia and situs inversus presented with complaints of dyspnea on exertion. He was referred to our hospital for a coronary angiogram.

He was diagnosed with ACS three months prior to the presentation and was treated with low-molecular-weight heparin. He also had a history of hypertension. His medication regimen at the time of presentation included aspirin 150 mg and losartan–hydrochlorothiazide combination. At the time of presentation, his blood pressure was 110/70 mmHg.

A coronary angiogram was performed using 6French 3.5 JL and JR diagnostic catheters via 6French sheath introduced into the right femoral artery. The procedure was uneventful. He was administered 1000 U of heparin. Coronary angiography revealed 90% stenosis in the ostial left anterior descending (LAD) artery with normal branches (Fig. 1A). He was diagnosed as having critical ostial single vessel disease.

He was advised to undergo angioplasty with stenting to the ostial LAD artery. After obtaining his consent, coronary angioplasty was performed using 7F arterial sheath, 7F JL 3.5 guiding catheter, 0.014 × 190 cm BMW guide wire in LAD, 2.5 × 15 mm Voyager balloon at 15 atm pressure, another supersoft wire in diag-

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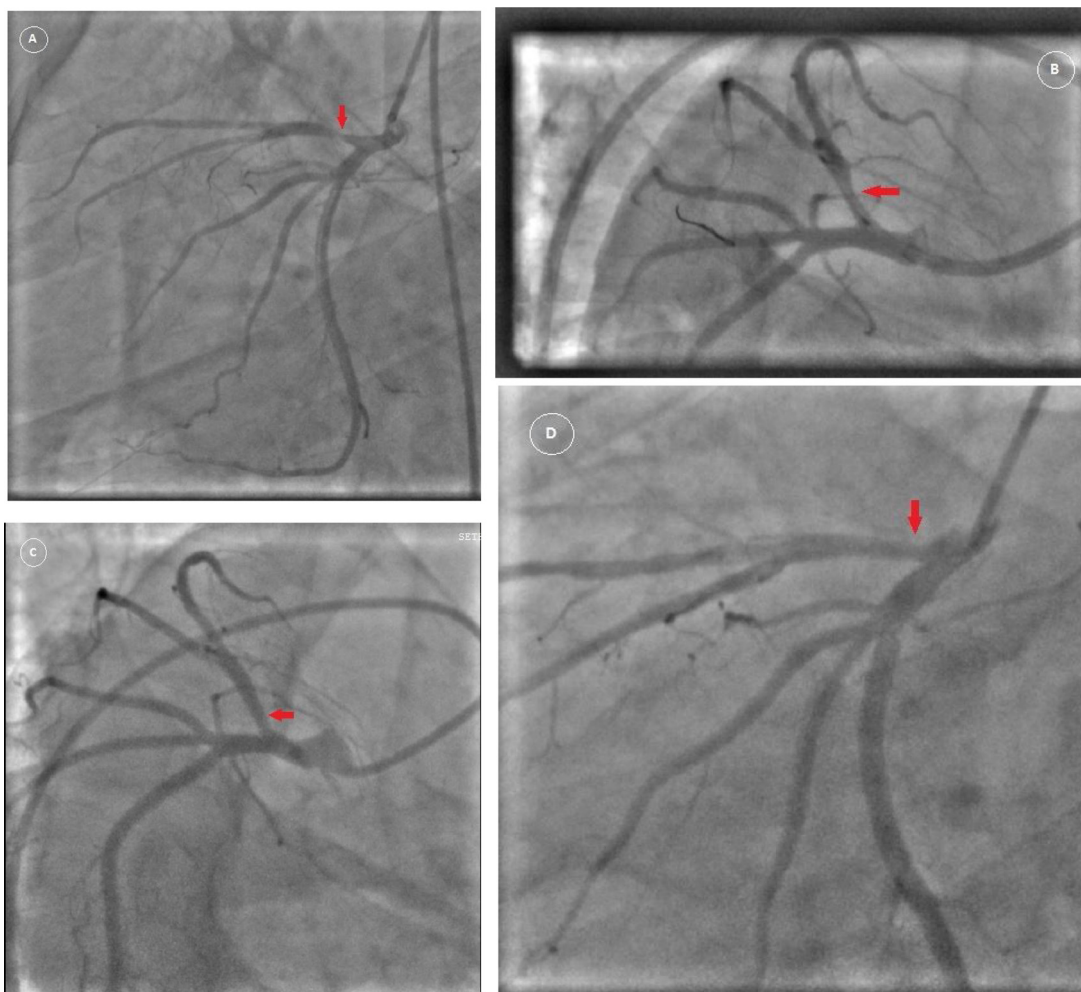


Fig. 1. Angiograms at (A) initial presentation; (B) post angioplasty and deployment of Absorb™ BVS; (C) at 8-months' follow-up visit; and (D) at 3-year follow-up visit.

onal, 3×15 mm voyager balloon at 10 atm pressure, and another 0.014×190 cm BMW guidewire in circumflex. An everolimus-eluting BVS (Absorb™ – 3×18 mm) was deployed in the ostial LAD artery at 10 atm pressure. As the lesion was ostial, and patient was younger, the use of metal stent was avoided and BVS was chosen for deployment. Post-dilatation was performed using 3.25×15 mm Trek NC balloon inside the stent at 21 atm pressure. Cefotaxime injection 1 g twice a day was administered intravenously during the peri-procedural period empirically.

Post-procedural angiogram did not reveal any residual stenosis, with thrombolysis in myocardial infarction (TIMI)-III flow distally (Fig. 1B). Tirofiban injection was administered as bolus and infusion as per the body weight. Post-procedural treatment included aspirin 150 mg, prasugrel 10 mg OD, and rosuvastatin 40 mg; losartan-hydrochlorothiazide OD was prescribed if systolic blood pressure (SBP) was >130 mmHg.

He was discharged on day 2 of the procedure with aggressive medical management measures including prasugrel 10 mg OD, aspirin 150 mg OD, rosuvastatin 40 mg H.S., pantoprazole 40 mg OD, alprazolam 0.5 mg H.S., syrup of milk of magnesia and liquid paraffin 15 mL H.S., and ramipril 5 mg OD with dietary referral and instructions to monitor blood pressure.

Follow-up visits at 1 and 3 months after the procedure were uneventful with no new complaints. About 8 months after the procedure, the patient returned with complaints of right-sided chest pain at rest. His blood pressure recording was 130/80 mmHg. Lipid

profile was normal. Coronary angiogram revealed patent Absorb™ scaffold in the ostial LAD with no late luminal loss (Fig. 1C). He was advised to continue the same medications with lifestyle management. Prasugrel was switched over to clopidogrel.

The patient presented with complaints of chest pain on exertion 2.4 years after the deployment of Absorb™ scaffold. His blood pressure was 130/80 mmHg. Laboratory investigations revealed normal triglyceride levels, but elevated low-density lipoprotein cholesterol (LDL-C), very low-density lipoprotein-cholesterol (VLDL-C), and other lipid ratios. Serum troponin-I levels were within the desired range. Exercise stress test report was negative for exercise-induced ischemia. He was advised to continue medical management and strengthen lifestyle modification. His daily dose of rosuvastatin was increased from 10 mg to 20 mg H.S.

Six months later, he presented with complaints of uneasiness and retrosternal chest pain radiating to the right arm with sweating. His blood pressure was 130/80 mmHg. Electrocardiography revealed slightly depressed ST segment (lateral, anterior) and T-wave inversion (lateral and anterior), suggestive of a probable anterior wall AMI. He was administered aspirin 150 mg, rosuvastatin 40 mg and clopidogrel 75 mg. Two-dimensional echocardiography revealed normal dimensions of all four chambers. No regional wall motion abnormalities were detected. Left ventricular/right ventricular systolic function was good. All valves were normal. No clot/vegetation/effusion was detected. The pulmonary artery and its branches were of normal

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