

Coronary angiography in a patient with situs inversus and dextrocardia

Situs inversuslu, ve dekstrocardili bir hastada koroner anjiyografi

Mehmet Çilingiroğlu, Mohammad-Abdul Waheed, Nuri Akkuş

Department of Interventional Cardiology, Faculty of Medicine, University of Cincinnati, Cincinnati, Ohio, USA

Introduction

Dextrocardia occurs rarely, with a frequency estimated at 1:10,000 (1). There is scant information available to the angiographer faced with performing catheterization in a patient with dextrocardia. We report successful coronary angiography in a patient with dextrocardia associated with situs inversus totalis. Catheterization in our patient was performed without difficulty using standard techniques.

Case Report

A 50-year old white male with known dextrocardia presented with severe substernal chest pains. His symptoms were reproducible with mild to moderate exertion. Physical examination was unremarkable except for findings consistent with dextrocardia. Chest X ray was remarkable for dextrocardia and right-sided stomach bubble. Electrocardiogram, with the properly reversed leads for dextrocardia, showed left ventricular hypertrophy. Two-dimensional echocardiogram showed a left-sided liver and dextrocardia without other abnormalities. Exercise testing using modified Bruce protocol reproduced his symptoms within the first stage of the test.

Cardiac catheterization was performed from the right femoral artery. Catheters were passed using mirror-image angiographic angles. A 6-French angulated pigtail catheter was passed into left ventricle and a left ventriculogram was obtained using 30-degree left anterior oblique imaging (Fig. 1). Selective coronary angiogram was performed using left and right 6-French 4 cm Judkins diagnostic catheters (400 right anterior oblique) (Fig. 2, 3).

Left main coronary artery was 70% stenosed with damping during engagement of its ostium. Non-dominant right coronary artery was occluded at its mid segment. Bypass surgery was performed without complication using the right internal mammary artery and a saphenous vein graft.

Discussion

The literature on diagnosis and treatment of atherosclerosis in patients with dextrocardia is scant. Case reports have described a total of 16 patients with dextrocardia and coronary artery disease, of whom



Figure 1. Left ventricular angiogram taken in LAO view
LAO-left anterior oblique



Figure 2. Left coronary angiogram taken in RAO view shows significant left main stenosis
RAO-right anterior oblique

Address for Correspondence/Yazışma Adresi: Mehmet Çilingiroğlu, MD, University of Cincinnati, Interventional Cardiology, Cincinnati, Ohio, USA
Phone: +1 513 4173889 Fax: +1 513 5586889 E-mail: mcilingiroglu@yahoo.com

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Figure 3. Right coronary angiogram in RAO view shows non-dominant right coronary artery with occlusion at its mid segment

RAO-right anterior oblique

only 6 underwent diagnostic arteriography (2-10). The prevalence of coronary artery disease is thought to be no different in patients with or without dextrocardia, over 80 patients per year with dextrocardia may undergo cardiac catheterization (2, 3). Coronary angiography was first reported in dextrocardia in 1974 (3) in a patient who underwent left ventricular aneurysmectomy. Coronary artery bypass surgery in a patient with dextrocardia was first reported in 1982 (4).

In dextrocardia, positions of the coronary artery ostia relative to the sinuses and to the aortic arch are a mirror-image of the normal orientation. Since coronary catheters are not "left-" or "right-handed," they assume a

mirror-image position in the mirror-image anatomy. Thus, they maintain their standard relationships to the coronary ostia. Catheters can be passed using standard technique, except that catheters are rotated in the opposite site direction (e.g., counterclockwise to seat a Judkins right catheter).

Conclusion

Few angiographers will see more than one patient with dextrocardia and situs inversus during their career. We offer this information so that the angiographer faced for the first time with such a patient can be reassured that standard techniques, with the exceptions of opposite-direction catheter rotation and mirror-image angiographic angles will usually allow uncomplicated coronary angiography.

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Successful deployment of an atrial septal occluder device in a patient with an insufficient posterosuperior defect rim

Yetersiz arka-ön rim defekti olan hastada atriyal septal oklüder'in başarılı yerleştirilmesi

Mohammad Alidoosti, Mohammad Saheb Jam, Maria Raissi Dehkordi

Department of Interventional Cardiology, Tehran Heart Center, Medical Sciences/University of Tehran, Tehran, Iran

Introduction

Transcatheter closure of atrial septal defects (ASDs) has more favorable outcomes than surgery in selected anatomically suitable ASDs

due to superior cosmetic results, the avoidance of cardiopulmonary bypass, a lower incidence of postoperative complications, and a shorter hospital stay (1). However, device embolization and malposition, and thrombus formation may occur as complications (2). Anatomically, ASDs

Address for Correspondence/Yazışma Adresi: Mohammad Alidoosti, Tehran Heart Center, Medical Sciences/University of Tehran, Interventional Cardiology, Tehran, Iran Phone: +98 21 88029256-9121037396 Fax: +98 21 88029256 E-mail: salidoosti@hotmail.com

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