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Coronary stenting using the radial approach in two women with situs viscerum inversus and acute myocardial infarction☆

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Abstract A situs inversus with dextrocardia (DC) is a rare condition in adults. Usually, patients have structurally normal hearts and normal life expectancy. The incidence of coronary artery disease in this setting is similar to that in the general population. Coronary revascularization may present potential difficulties related to the unusual anatomy. Although the radial artery is a safe and effective site of access for coronary interventions, some anatomical variations may make this procedure more complicated. We describe two cases of patients with situs viscerum inversus and acute myocardial infarction who underwent successful transradial percutaneous coronary intervention (PCI). We will show that coronary angioplasty with stent application via the radial approach in patients with DC is feasible and effective also in emergency and urgent care.

Keywords: Coronary stenting; Radial approach; Situs viscerum inversus; Acute myocardial infarction

1. Introduction

A situs inversus with dextrocardia (DC) is a rare condition in adults (the incidence of DC has been reported to be only 0.01%) [1]. Usually, patients have structurally normal hearts (only 3–5% incidence of congenital heart disease) and normal life expectancy [2]. The incidence of coronary artery disease in this setting is similar to that in the general population.

Coronary revascularization may present potential difficulties related to the unusual anatomy. Although the radial artery is a safe and effective site of access for coronary interventions, some anatomical variations may make this procedure more complicated. We describe two cases of female patients with situs viscerum inversus and acute myocardial infarction who underwent successful transradial percutaneous coronary intervention (PCI) in emergency and urgent care.

2. Case A

A 48-year-old woman, with family history of coronary artery disease and known situs inversus, presented with non-ST-elevation acute coronary syndrome. The standard 12-lead ECG showed right axis deviation and that obtained with right-sided precordial leads revealed inversion of symmetric T waves in V2 and V3, and flattening of the ST segments in V4 to V6 (Fig. 1). The peak creatine kinase-MB mass was 53 ng/ml, and troponin I was 46.78 ng/ml. Therapy was started with ASA, LMWH, and beta-blockers. After a loading dose of clopidogrel, 48 h later she underwent coronary angiography via the right radial approach. At the beginning, we performed an aortography which confirmed the right position of the heart and aortic arch (Fig. 2). After that, the anatomical right coronary artery (RCA) was engaged in the lateral right view

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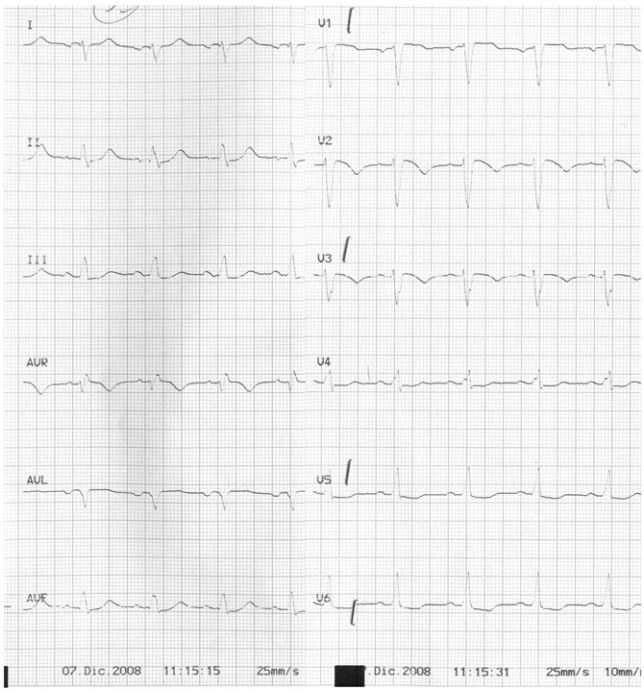

Fig. 1. ECG at hospital admission showing a mild ST elevation in the right precordial leads with concomitant T-wave inversion and flattening of the ST segments in V4 to V6.

(symmetric of standard left lateral view) with a 6-French (F) Optitorque Tiger tip 4 catheter (Terumo Corporation, Tokio, Japan) and was found to be disease free, supplying a collateral flow to the left anterior descending (LAD) artery (Fig. 3). We could not engage the anatomical left main stem (LMS) with the same catheter, while it was easily cannulised with a 6-F left Judkins (JL) 3.5 catheter

Fig. 2. Left lateral view aortography showing the right-sided aortic arch.

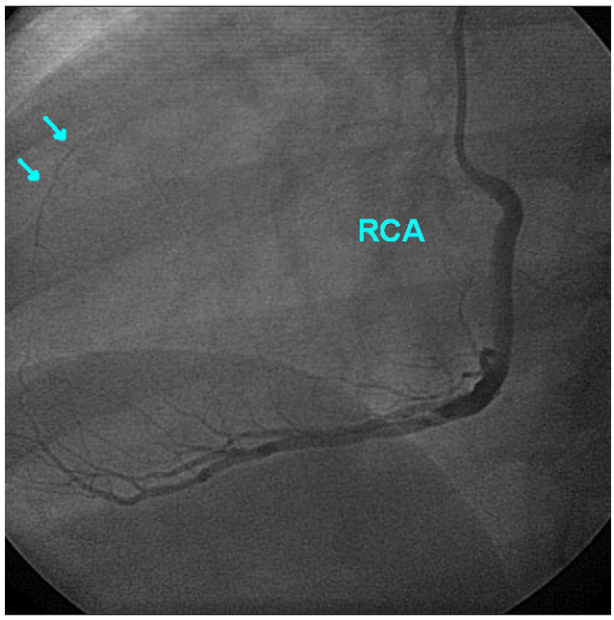

Fig. 3. Left lateral view (right lateral equivalent) of the disease-free right coronary artery (RCA) supplying a collateral circle for the left anterior descending artery (arrows).

(Cordis Corporation, Miami Lakes, FL, USA). The LAD artery was found to be occluded at the origin (Fig. 4). There was only a plaque disease in the left intermediate branch, and the nondominant circumflex was disease free. We performed ad hoc PCI to the LAD artery. The LMS was engaged with a 6-F EBU 3.5 guiding catheter (Medtronic, Santa Rosa, CA, USA). The critical lesion was crossed with a 0.014-in. BMW MG guidewire (Abbott Vascular, Santa Clara, CA, USA), dilated with a 2.0×20-mm

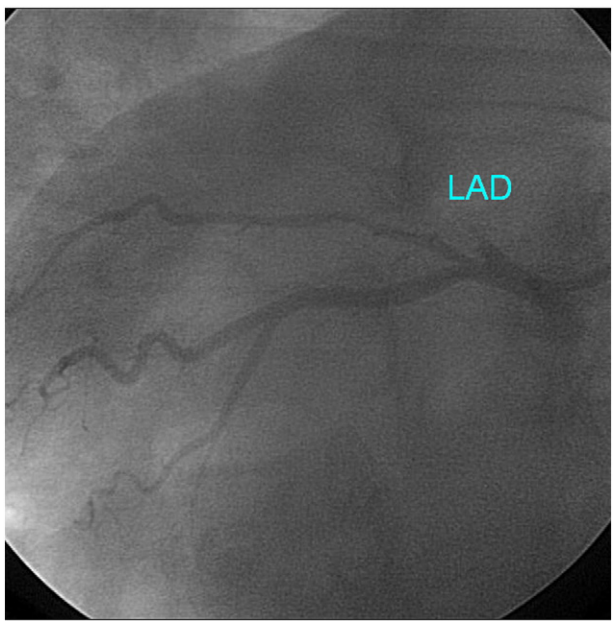

Fig. 4. Right anterior oblique (spider equivalent) showing the left anterior descending (LAD) ostial occlusion.