CASE REPORT

Incidentally Found Situs Inversus with Dextrocardia: Inferior Myocardial Infarction in an 86-Year-Old Woman

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Situs inversus with dextrocardia is a rare condition. Yet, the incidence of atherosclerosis and myocardial infarction in patients with dextrocardia is similar to that in general population. The diagnosis of acute myocardial infarction is somewhat tricky and difficult if the dextrocardia is not recognized. We present the electrocardiogram, coronary angiograms, and chest radiogram of a patient with incidentally found situs inversus with dextrocardia.

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An 86-year-old woman without no medical history was admitted with a diagnosis of acute myocardial infarction (MI). Admission electrocardiogram (ECG) showed right P-wave axis, extreme QRS axis of -165° , prominent Q waves in leads I, II, aVF, poor R-wave progression in precordial leads and ST-segment elevation in leads II, III, aVF (Fig. 1). The patient was normotensive but heart sounds were louder on the right side of the chest. ECG findings and physical examination were suggestive of dextrocardia. A second ECG was recorded with reversed limb electrodes and precordial electrodes, which revealed normal sinus rhythm with ST-segment elevation in leads II, III, aVF (inferior MI) and a normal R-wave progression in the precordial leads (Fig. 2). Coronary angiography revealed reversal of coronary ostia and a 95% stenosis of the right coronary artery (Figs. 3a and 3b) and the patient underwent stent implantation. Chest radiogram showed a mirror image dextrocar-

dia with gastric air bubble visible under the right dome of the diaphragm suggesting a situs inversus (Fig. 3c), which was then confirmed in an abdominal ultrasound.

Situs inversus with dextrocardia is a very rare condition which can be found in 1 to 2 per 10,000 people.¹ The incidence of atherosclerosis and MI is similar to that in general population. A few cases of MI in patients with dextrocardia and situs inversus were previously described, however the patients were younger.^{2,3} The diagnosis of acute MI is difficult if the dextrocardia is not recognized.^{3,4} The usual presentation includes right-sided chest pain radiating to the right arm.⁴ Electrocardiographic localization of MI also poses a challenge. ECG showing right P and QRS axis with poor R-wave progression in precordial leads should be suggestive of dextrocardia, which requires recording the ECG with reversed limb and chest leads.

Figure 1. Admission electrocardiogram shows right P wave axis (negative P waves in lead I, aVL, positive P waves in lead aVR), extreme QRS axis of -165° , prominent Q waves in leads I, II, aVF, poor R-wave progression in precordial leads, and ST-segment elevation in leads II, III, aVF.

Figure 2. An electrocardiogram after reversal of the limb (right-to-left arm and right-to-left leg) and chest (right-sided) electrodes shows normal sinus rhythm with ST-segment elevation in leads II, III, aVF, and normal R-wave progression in the precordial leads.

Figure 3. (A) Coronary angiogram of the right coronary artery (RCA) shows 95% stenosis (right anterior oblique [RAO] 30° and caudal [CAUD] 1° view). (B) Coronary angiogram of the left coronary artery (LAD = left anterior descending artery; Cx = circumflex artery) (left oblique anterior [LAO] 46° and caudal [CAUD] 1° view). (C) Chest radiogram shows mirror image dextrocardia with a right-sided aortic knob along with gastric air bubble visible under the right dome of the diaphragm suggestive of situs inversus.

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