

Electrocardiogram Before Surgery in a 21-Year-Old Woman



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A routine preoperative electrocardiogram was read by the computer as arm-lead reversal, but several features indicated that the patient had situs inversus totalis. © 2019 Elsevier Inc. All rights reserved. (Am J Cardiol 2019;124:820–821)

Case Report

A computer interpretation of an electrocardiogram (Figure 1) recorded before bariatric surgery in a morbidly obese young woman suspected arm-lead reversal. Although arm-lead reversal is far more common than situs inversus, the progressively smaller left-sided precordial QRS voltage suggests that the electrodes are moving farther away from a right-sided heart and that the patient has situs inversus.¹ Also, in situs inversus the QRS morphology is similar in leads I and V₆, whereas it is quite different in arm-lead reversal.² The diagnosis was supported by an upper gastrointestinal series

that showed the stomach to be in the right side of the abdomen. The dextrocardia had been diagnosed at age 3 years, the last time the patient saw a cardiologist, but this was the first diagnosis of situs inversus totalis.

An electrocardiogram recorded with the limb leads reversed and the precordial leads in mirror-image position to the standard positions (Figure 2) is normal except for large QRS voltage due to the tracing's having been recorded at double standard (20 mm/mV).

As is usually the case in situs inversus totalis, the patient had no other evidence of heart disease.¹ The bariatric surgery was uneventful.



Figure 1. Initial ECG with the electrodes in the standard positions. See text for explication. ECG = electrocardiogram.

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Figure 2. Electrocardiogram recorded with limb-lead reversal and the precordial leads in mirror-image locations to the standard positions. The voltage is double standard (20 mm/mV).

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