A 73-year-old man with a history of hypertension and a family history of coronary artery disease (CAD) was seen in an outpatient clinic for stable angina. Physical examination showed bilateral earlobe creases, known as Frank’s sign (Figure 1), and no other relevant cardiac findings.

ECG showed normal sinus rhythm with no signs of ischemia. He was evaluated with a nuclear stress test, which revealed moderate reversible perfusion defects localized to the lateral wall. He underwent an elective coronary arteriography, which showed 80% stenosis of the left main coronary artery, 90% stenosis of the distal right coronary artery, and 90% stenosis of the proximal left circumflex coronary artery (Figure 2). Left ventriculogram showed an ejection fraction of 60% with mild inferoapical and moderate inferobasal hypokinesis. The patient underwent 3-vessel coronary artery bypass graft surgery and has since done well.

Diagonal earlobe crease (DELC), also known as Frank’s sign, was first associated with CAD by Sanders T. Frank in 1973. Since its first description, others have shown it to be associated with the presence, as well as the extent and severity, of CAD, independent of traditional CAD risk factors, such as serum lipids, diabetes mellitus, and smoking status. DELC is also associated with higher risk of major adverse cardiac events in patients with known CAD. Recent studies have suggested that DELC may also be a marker of generalized atherosclerotic disease. DELC is associated with carotid-intima media thickness, a marker of subclinical atherosclerosis in subjects free of clinical cardiovascular disease, and was reported recently to be associated with ischemic stroke. The etiologic basis of DELC in atherosclerotic disease is not fully understood. DELC may occur because of age-related or microvascular disease-associated weakening of elastic fibers in the ear lobes, reflecting a similar pathology in weakened coronary arteries.

Our patient demonstrated bilateral earlobe creases in the setting of severe CAD. Broader recognition among clinicians of this easily detectable sign may facilitate early diagnoses in patients at high risk for CAD.

Disclosures
None.

References
Figure 1. Bilateral earlobe crease (Frank’s sign).

Figure 2. Coronary angiograms showing 90% stenosis in the distal right coronary artery (RCA), 90% stenosis in the proximal left circumflex coronary artery (LCX), and 80% stenosis of the distal left main coronary artery. The left circumflex originated from the right coronary artery.
Bilateral Earlobe Creases and Coronary Artery Disease
Arman Qamar, Kimon L.H. Ioannides, Sumeet A. Khetarpal and Daniel Kiss

Circulation. 2014;130:92-93
doi: 10.1161/CIRCULATIONAHA.114.009738
Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 2014 American Heart Association, Inc. All rights reserved.
Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the
World Wide Web at:
http://circ.ahajournals.org/content/130/1/92