Extremely Rare Anomaly of Native Coronary Artery Bypass From Left Internal Thoracic Artery Compensating for Hypoplastic Coronary Arteries

Tatsuro Yamazaki, MD;
Takatsugu Kajiyama, MD, PhD;
Hiroyuki Takaoka, MD, PhD;
Yoshio Kobayashi, MD, PhD

A 58-year-old woman underwent computed tomography (CT) after recovering from congestive heart failure. CT revealed a branch of the left internal thoracic artery (LITA) supplied the left ventricular (LV) myocardium (LVM), compensating for hypoplastic coronary arteries (**Figure A**). A persistent left superior vena cava and ventricular septal defect were also detected (**Figure A,B**). Invasive angiography revealed that the native branch of the LITA supplied the apex and inferior wall of the LVM (**Figure C**, **Supplementary Movie**). Linear late iodinate enhancement was detected in the intraventricular septum (**Figure D**). LITA anomalies are found in almost 30% of candidates for coronary artery bypass grafting, and the largest number of them are abnormalities of origin.¹ To our knowledge, an abnormal branch of the LITA supplying the LVM has not been reported previously.

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Department of Cardiovascular Medicine (T.Y., H.T., Y.K.), Department of Advanced Cardiorhythm Therapeutics (T.K.), Chiba University Graduate School of Medicine, Chiba, Japan

Mailing address: Hiroyuki Takaoka, MD, PhD, Department of Cardiovascular Medicine, Chiba University Graduate School of Medicine, 1-8-1 Inohana, Chuo-ku, Chiba 260-8670, Japan. E-mail: tapy21century@yahoo.co.jp

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Reference

1. Bauer EP, Bino MC, von Segesser LK, Laske A, Turina MI. Internal mammary artery anomalies. *Thorac Cardiovasc Surg* 1990; 38: 312–315.

Supplementary Files

Supplementary Movie. Invasive coronary angiography revealed that the native branch of the LITA supplied the apex and inferior wall of the LVM.

Please find supplementary file(s);
<http://dx.doi.org/10.1253/circj.CJ-21-0447>

Figure. Computed tomography (CT) shows the hypoplastic left anterior descending (LAD) artery and right coronary artery (RCA) (**A**). A branch of the left internal thoracic artery (LITA) supplies the apex and inferior wall of the left ventricular (LV) myocardium (LVM) (**A**). A persistent left superior vena cava (PLSVC) (**A**) and shunt flow of a ventricular septal defect were also detected on CT (**B**, yellow arrow). Invasive angiography revealed that a native branch of the LITA supplied the apex and inferior wall of the LVM (**C**, white arrow and triangles, **Supplementary Movie**). Linear late iodinate enhancement was detected in the intraventricular septum (**D**, white triangles).