©Copyright by Croatian Cardiac Society. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (https://creativecommons.org/licenses/by/4.0/) which permits users to read, download, copy, distribute, print, search, or link to the full texts of these articles in any medium or format and to remix, transform and build upon the material, provided the original work is properly cited and any changes properly indicated.

Myocardial bridging is associated with lower coronary stenosis severity on coronary CT angiography

Ljuba Doko[1]*, Petra Bistrović[2], Antun Zvonimir Kovač[3], Andrija Štajduhar[4], Ladislav Pavić[2], Mladen Jukić[2]

[1]Varaždin General Hospital, Varaždin, Croatia
[2]Dubrava University Hospital, Zagreb, Croatia
[3]University Hospital Centre Zagreb, Zagreb, Croatia
[4]University of Zagreb, School of Medicine, Zagreb, Croatia

KEYWORDS: myocardial brigging, coronary artery disease, coronary ct angiography, stenosis severity.

CITATION: Cardiol Croat. 2026;21(11-12):214. | https://doi.org/10.15836/ccar2026.214

***ADDRESS FOR CORRESPONDENCE:** Ljuba Doko, Opća bolnica Varaždin, I. Meštrovića 1, HR-42000 Varaždin, Croatia. / Phone: +385-99-5068-205 / E-mail: ljuba.doko95@gmail.com

ORCID: Ljuba Doko, https://orcid.org/0009-0009-2925-6476 • Petra Bistrović, https://orcid.org/0000-0002-3650-3297 Antun Zvonimir Kovač, https://orcid.org/0000-0001-6276-4450 • Andrija Štajduhar, https://orcid.org/0000-0002-2523-1257 Ladislav Pavić, https://orcid.org/0000-0002-8048-998X • Mladen Jukić, https://orcid.org/0000-0002-3927-3888

Introduction: Myocardial bridging (MB) has been associated with less severe obstructive coronary artery disease (CAD), mainly in catheterization-referred series. Coronary CT angiography (CCTA) also captures the disease-free and non-obstructive strata that invasive cohorts under-sample.[1] We examined the association across the full range of stenosis severity on CCTA, after risk-factor adjustment and exclusion of known CAD.

Patients and Methods: This retrospective, single-center, cross-sectional study included consecutive patients undergoing clinically indicated CCTA at one tertiary center between February 2025 and July 2026. Both variables were taken from the clinical report: MB was defined as any mention of bridging in the findings (depth and length not recorded), and the outcome was the reporting radiologist's conclusion category (CAD excluded, non-obstructive, moderate, obstructive or occlusion), which is not anchored to numeric stenosis thresholds. Proportional-odds ordinal regression was fitted unadjusted and adjusted for age, sex, hypertension, dyslipidemia, diabetes and smoking, using complete cases. The proportional-odds assumption was assessed with logistic models at each cumulative cutpoint. Sensitivity analyses excluded patients with known CAD (prior percutaneous coronary intervention or acute coronary syndrome) and restricted the cohort to patients with plaque.

Results: Of 1,365 screened patients, 165 had no codable conclusion and 2 had missing age, leaving 1,198, of whom 291 (24.3%) had MB. Patients with MB were younger (60.1 vs 65.4 years) and had less hypertension, dyslipidemia and diabetes (all p<0.001). Known CAD was present in 4/291 (1.4%) patients with MB and 143/907 (15.8%) without (p<0.001). MB was inversely associated with stenosis severity: common odds ratio (OR) 0.159 (95% confidence interval 0.119-0.212) unadjusted and 0.246 (0.178-0.341) adjusted (n=1,046; both p<0.001). The proportional-odds assumption was not met: adjusted ORs were 0.336 (0.224-0.504) for any CAD, 0.111 (0.057-0.216) for moderate or worse, and 0.096 (0.035-0.265) for obstructive disease, the last based on only 4 exposed events. The association persisted after excluding known CAD (OR 0.277, 0.199-0.386; n=913) and among patients with plaque (OR 0.127, 0.065-0.248; n=874).

Conclusion: In patients referred for CCTA, MB was associated with lower stenosis severity after risk-factor adjustment and exclusion of known CAD, the contrast widening at higher thresholds. The cross-sectional design cannot distinguish slower progression from earlier detection, nor exclude selective referral or preferential reporting of bridging in less diseased studies. Longitudinal imaging, blinded re-reading and plaque quantification are needed.

RECEIVED:
October 20, 2026
UPDATED:
November 4, 2026

LITERATURE

1. Rovera C, Moretti C, Bisanti F, De Zan G, Guglielmo M. Myocardial Bridging: Review on the Role of Coronary Computed Tomography Angiography. J Clin Med. 2023 Sep 13;12(18):5949. https://doi.org/10.3390/jcm12185949