

# Prevalence and morphologic features of myocardial bridging: A coronary computed tomography angiographic study from Northern Greece

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## PURPOSE

Myocardial bridging (MB) is a congenital structural variant in which a segment of the epicardial coronary artery tunnels into and is surrounded by the myocardium. The depiction rate of MB varies significantly between catheter coronary angiography and autopsy studies. Conventional coronary angiography is the gold standard for detection, but it is invasive and may not be sensitive enough to detect a thin bridge.

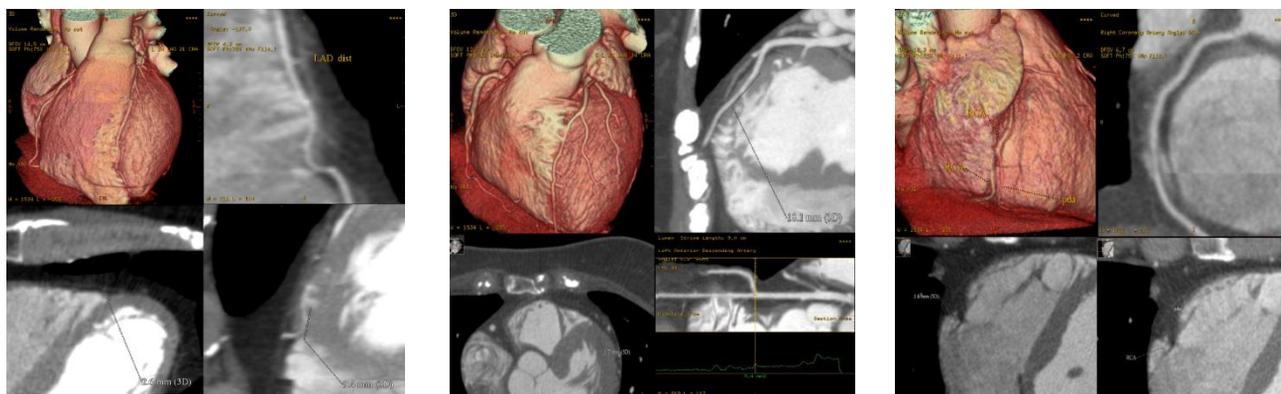
The aim of this study was to assess the depiction rate of MB by coronary computed tomographic angiography in Northern Greece and to determine the anatomical features of the tunneling vessels

## METHODS

Between January 2009 and March 2012, a total of 1884 consecutive patients who underwent 64-row MDCT coronary angiography in our institution, were retrospectively reviewed to identify the presence and the location of MB and determine morphologic features and relation to atherosclerosis.

## RESULTS

- A total of 338 (294 males, 44 females; mean age, 55.4 ± 12.6 years; age range 24-90 years) out of 1,884 (17.9%) patients showed 353 cases of MB.
- ❖ One hundred ninety one tunneling segments (54.2%) were situated in the middle portion of the left anterior descending coronary artery (LAD),
- ❖ 103 segments (29.2%) were in the distal portion of the LAD,
- ❖ 38 segments were in the proximal part of the LAD (10.8%),
- ❖ 6 (1.7%) in the first diagonal branch,
- ❖ 6 (1.7%) in the ramus intermediae,
- ❖ 3 (0.8%) in the second diagonal branch,
- ❖ 3 (0.8%) in the Circumflex coronary artery,
- ❖ and 3 (0.8%) in the Right coronary artery.
- Depth ranged from 0.1 to 4.1 mm.
- Intramuscular segment length ranged from 9 to 38mm.
- All intramuscular segments were without evidence of atherosclerosis.
- We found proximal intima to be without atherosclerosis in 44.1% of patients (149/338) and with atherosclerosis in 55.9%.
- Distally atherosclerosis was absent in 95.9% of cases.



## CONCLUSIONS

Our study showed that MDCT is a reliable and noninvasive tool for diagnosing coronary myocardial bridging, since it accurately determines the location, depth, and length of MB.

We found the incidence of myocardial bridging in this patient group to be 17.9%, higher than the depiction rate of MB by catheter CAG reported in the literature and in concordance with other studies using MDCT.

The most common location of MB was in the LAD.

We also observed that most atherosclerotic plaques in the "host" vessel were located at the segment proximal to the tunneled segment there was no evidence of atherosclerosis within any intramuscular segment.

*I do not have any potential conflict of interest*