

Coronary Atherosclerosis Burden and Coronary Artery Tortuosity

Koroner Ateroskleroz Yükü ve Koroner Arter Kıvrımlılığı

To the Editor,

Coronary artery tortuosity (CAT), which develops as a result of pathological structural changes in the coronary vasculature, is frequently encountered in the invasive catheterization laboratory. The exact pathophysiology and primary risk factors of CAT are unknown; however, traditional cardiovascular risk factors such as aging, hypertension, and atherosclerosis have been implicated in its development.¹ Although CAT is generally considered a benign condition, it may be associated with several clinical entities, including coronary artery blood flow alterations leading to myocardial ischemia, the development of atherosclerosis due to shear stress, and increased complexity of coronary artery lesions. Additionally, it may serve as a herald of concurrent systemic vasculopathies, such as fibromuscular dysplasia.^{1,2}

Studies aimed at elucidating the pathogenesis and prognostic impact of coronary tortuosity are, therefore, of great clinical value. In this context, I read with great interest the recent article by Özyaşar et al.,² in which the authors retrospectively investigated the clinical significance of coronary artery tortuosity in the context of chronic coronary syndrome (CCS). In the study,² the researchers utilized the Gensini score to assess coronary atherosclerosis burden.

The Gensini score is a valuable tool in clinical practice for evaluating the severity of atherosclerotic lesions in the coronary arteries. This scoring system considers three parameters for each coronary lesion: 1) stenosis severity score, 2) segment multiplication factor, and 3) collateral modifying factor.^{3,4} However, in the aforementioned study,² the authors only accounted for the stenosis severity score and the segment multiplication factor, omitting the collateral modifying factor. This omission results in an inaccurately elevated Gensini score, as the collateral modifying factor is not subtracted from the total score in cases of collateral flow. Collateral circulation is particularly relevant in cases of total and subtotal stenosis. The presence of effective collateral flow can alter the functional significance of the lesion in the affected coronary artery by supplying blood to the myocardium at risk of ischemia. For cases of 25%, 50%, 75%, 90%, and 99% stenosis in arteries providing collateral flow, 12, 8, 4, 2, and 1 points, respectively, are subtracted from 32.

In conclusion, all three parameters should be considered when calculating the Gensini score to accurately determine the atherosclerotic burden of the coronary lesion.

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LETTER TO THE EDITOR EDİTÖRE MEKTUP

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