We thank Dr. de Araújo Gonçalves and colleagues for their interest in our study (1), which acknowledges the strong relationship of atherosclerotic plaque characteristics (APCs), as imaged by coronary computed tomography angiography (CTA), to lesion-specific ischemia. They express concerns regarding the limits of spatial resolution by coronary CTA. Current scanners possess approximately 500-μm isotropic resolution, which enables measurement of the coronary lumen and APCs with high interobserver and intraobserver concordance and accuracy comparable to optical coherence tomography and intravascular ultrasound. These findings have been reported by our laboratory (2,3). Dr. de Araújo Gonçalves and colleagues question our definitions of low attenuation plaque and positive arterial remodeling. We employed definitions identical to previous investigations to maximize the generalizability of our study findings (4). Dr. de Araújo Gonçalves and colleagues also appropriately ask what is the role of APCs in the context of noninvasive fractional flow reserve derived from coronary CTA (FFRCT), a novel technology that exhibits very high diagnostic performance for the detection and exclusion of coronary lesion-specific ischemia (5). Like Dr. de Araújo Gonçalves and colleagues, we believe that FFRCT will be a game-changing technology that may supplant other forms of noninvasive testing. Whether APCs are independent and additive to FFRCT is a current focus of our laboratory, and we will report these results shortly. Finally, Dr. de Araújo Gonçalves and colleagues commented on the 17% of ischemic lesions in stenoses <50% as “remarkable” and a potential explanation for the worsened prognosis associated with “nonobstructive” coronary artery disease (CAD). Our group has described the stepwise increase in adverse events for individuals with increasing nonobstructive CAD, and the prevalence of lesion ischemia in nonobstructive stenoses in the current study is consistent with that reported previously. We agree that the high prevalence of ischemia in nonobstructive CAD is concerning, which underscores the need for novel measures, such as FFRCT and APCs, to identify at-risk individuals who do not meet conventional angiographic definitions of severe CAD, yet who experience ischemia and require aggressive therapy to mitigate the adverse prognosis that we have thus far observed.

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