

THE TIE BREAKER: A CASE OF REVASCULARIZATION WITH DISCORDANT INVASIVE AND NON-INVASIVE PHYSIOLOGIC LESION ASSESSMENT

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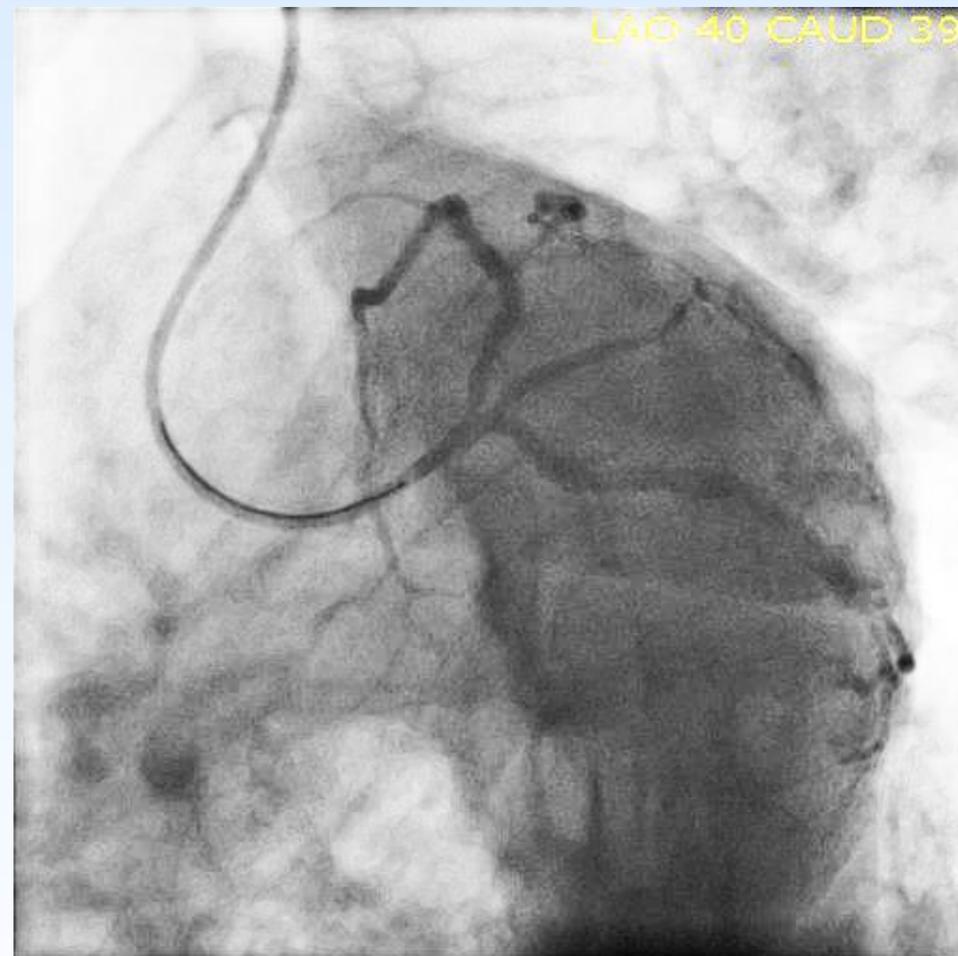
Background

When there is **conflicting data** between invasive and non-invasive physiologic lesion assessment, cardiologists need to understand the nuances of each modality to provide high-quality patient care. This case highlights the importance of a systematic approach to evaluating intermediate lesions in a patient with typical angina, **negative** invasive **fractional flow reserve (FFR)** and **positive** non-invasive **coronary flow reserve (CFR)** by PET imaging.

Case Summary

A forty-eight-year-old female with active tobacco abuse presented with typical, exertional chest tightness with radiation to the jaw. A cardiac catheterization notable for a 40%, eccentric lesion at the **ostium of the LAD**. An **FFR value of 0.90** was measured and revascularization was deferred. The patient continued to have exertional angina despite medical therapy and underwent a gated myocardial perfusion imaging study with PET. This demonstrated a reversible, moderate to severe area of ischemia in the territory of the LAD with **compromised CFR at 1.82**. The patient underwent surgical revascularization with LIMA-LAD with complete resolution of symptoms.

Catheterization Image



LAO Caudal Projection best demonstrates the eccentric disease at the **ostium of the LAD with the FFR wire** about to be advanced past the lesion.

Decision Making

For many, **FFR remains the current "gold standard"** for invasive physiologic assessment in angiographically intermediate coronary lesions. However, reliance on these recordings may result in a failure to recognize true ischemia due to several procedural and patient-specific factors, owing to false negative findings. Given the patient's persistent symptoms of typical angina, **additional ischemic risk-stratification** was warranted and resulted in a significant change in patient care.

Conclusion

In summary, revascularization of intermediate lesions should be physiologically evaluated with **both invasive and non-invasive modalities**, especially when clinical suspicion is high, and findings are discordant. Currently, there is no consensus regarding the combined use of FFR and CFR in these scenarios. Ultimately, cardiologists must rely on their understanding of coronary physiology as it pertains to both testing modalities when discussing revascularization.