A 47-year-old male smoker presented with an inferior ST-segment myocardial infarction (STEMI) 4 h after taking cocaine. Emergency coronary angiography demonstrated a large-caliber proximally occluded right coronary artery (Figure 1A) and similarly large smooth left coronary arteries. Aspiration thrombectomy was performed, directly via the guide catheter, and large volumes of red thrombus were removed (Figure 1B). Flow was restored, revealing a tight proximal stenosis (Figure 1C) that, after administration of copious intracoronary nitrates, completely resolved, suggesting cocaine-induced vasospasm (Figure 1D).

Optical coherence tomography (OCT) was performed (Online Video 1), demonstrating only mild midvessel atheroma at the site of vasospasm.
(Figure 1E) and extensive proximal residual thrombus (Figure 1F). A small dissection was noted, possibly related to aspiration thrombectomy, but it was not thought to be clinically significant. Repeat OCT (Online Video 2) after 2 days of intravenous tirofiban and heparin showed that the laminar thrombus was still present (Figures 1G and 1H).

Vasospasm should be considered in all cases of STEMI in which there has been recent cocaine use and was likely the major contributing factor in our patient’s presentation. Intracoronary imaging is important to exclude plaque rupture and erosion as alternative diagnoses, although not completely possible in this case due to the large-caliber of the artery and residual thrombus preventing the vessel wall from being fully imaged. Finally, this case demonstrates that aspiration thrombectomy continues to have an important role in selected STEMI cases despite recent evidence showing no benefit from routine use (1).

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APPENDIX: For supplemental videos and legends, please see the online version of this article.