

Title

From Near-Occlusion to Complete Resolution: A 90-Day Visual Chronicle of SCAD Healing

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Background

Spontaneous coronary artery dissection (SCAD) is a rare cause of acute coronary syndrome (ACS), representing less than 1% of all myocardial infarctions. It predominantly affects women in their 5th and 6th decades. The pathophysiology involves blood accumulation within the tunica media—from either vasa vasorum rupture or an intimal tear—creating an intramural hematoma (IMH) that obstructs the true lumen. While the LAD is most commonly involved (50%), clinical presentations vary between NSTEMI and STEMI. This case highlights the remarkable natural history of SCAD, providing definitive angiographic evidence of total vascular remodeling and healing over a 10-week period following a near-occlusive Type 2 dissection.

Clinical Case

A 44-year-old female with no significant cardiovascular history presented to the emergency department with acute-onset substernal chest pain. Initial evaluation revealed elevated troponin and some non-specific ST-T wave changes. However, the patient subsequently developed worsening refractory pain and new-onset ST-segment elevations in the precordial leads on repeat EKG.

Emergent coronary angiography was performed, revealing a long, diffuse, and smooth narrowing of the mid-to-distal left anterior descending (LAD) artery, consistent with Type 2 SCAD. The lesion resulted in approximately 95% luminal narrowing. Given the patient's clinical stabilization after initial medical management and the absence of ongoing ischemia or hemodynamic instability, a conservative strategy was adopted. She was discharged on a regimen of dual antiplatelet therapy and beta-blockers.

The patient remained asymptomatic during follow-up. A repeat coronary angiogram was performed 10 weeks later to assess for healing prior to considering future interventions or activity restrictions. The repeat study demonstrated complete resolution of the previously identified LAD narrowing. The vessel exhibited normal luminal caliber and smooth contours, confirming total resorption of the intramural hematoma and spontaneous structural remodeling.

Discussion

This case provides a powerful visual demonstration of the coronary artery's capacity for self-repair in the setting of SCAD. While Type 2 SCAD often presents as a frightening "near-occlusion" on initial angiography, this longitudinal chronicle confirms that conservative management can lead to complete anatomical restoration. The 10-week follow-up images serve as a crucial teaching tool, reinforcing that unless there is ongoing ischemia or

hemodynamic compromise, allowing the vessel time to heal naturally often yields superior results compared to the high risks of percutaneous coronary intervention (PCI) in friable dissected tissue. This case supports current societal recommendations for a "watchful waiting" approach in stable SCAD patients.