

## **COVID-ASSOCIATED TYPE I AND TYPE IV SPIRAL SPONTANEOUS CORONARY ARTERY DISSECTION PRESENTING AS AN ACUTE INFERIOR ST ELEVATION MYOCARDIAL INFARCTION IN YOUNG FEMALE**

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**Background:** Spontaneous coronary artery dissection (SCAD) accounts for 1-4% of all acute coronary syndrome (ACS) and up to 35% in young female with ACS. Only 18 cases are reported regarding COVID associated SCAD till 2024. Once diagnosed, conservative management is typically preferred, revascularization is reserved for ongoing ischemia.

**Case:** A 37-year-old female with history of preeclampsia, anxiety and active COVID infection for a week presented with substernal chest pain for a day. ECG was unremarkable, but troponin was elevated at 30 ng/L. COVID antigen was positive. CTA was negative. Urine drug screening (UDS) came positive for amphetamine. Twelve hours later, troponin trended up to 351 ng/L and repeat ECG revealed deep Q-wave, ST elevation in lead II, III, aVF with T wave inversion in lead III. Coronary angiography revealed long spiral dissection flap with double-lumen appearance in mid RCA with occluded small proximal PLV branch, TIMI 1 grade flow, and a small akinetic infero-basal wall. Thrombus aspiration was performed. DES was placed in mid RCA with balloon angioplasty of the small PLV. TIMI 3 was restored. TTE showed normal LV function. Patient was discharged on aspirin, ticagrelor, metoprolol and statin.

**Decision-making:** Given her presentation, her SCAD might be from COVID, amphetamine and female gender. UDS could be false positive for amphetamine due to certain medication including sertraline, bupropion, labetalol etc. She uses sertraline for anxiety and denied any illicit drug use. Considering that amphetamine has been ruled out. In that scenario her SCAD is likely from COVID and female gender. COVID trigger SCAD through systemic inflammation, cytokine mediated vascular injury, increased coronary wall stress. Among the 18 published cases of COVID-associated SCAD, LAD was involved in 10 cases, RCA in 4, and LCx in 4. Our case represents the fifth reported RCA SCAD in setting of COVID. Majority can be treated conservatively.

**Conclusion:** This case highlights COVID as a potential trigger for Type 1 and Type 4 SCAD in young females presenting as ACS. RCA involvement is rare, with only a handful of cases documented. Revascularization is appropriate for active ischemia.