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☆ **Complex Clinical Cases**

ST SEGMENT ELEVATIONS AND COVID-19- A CASE SERIES

Poster Contributions
Monday, May 17, 2021, 10:45 a.m.-11:30 a.m.

Session Title: Complex Clinical Cases: FIT Covid-19 3
Abstract Category: FIT: Coronavirus Disease (COVID-19)

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Background: The coronavirus disease of 2019 (COVID-19) is a global pandemic, with more than 67 million cases worldwide and more than 1.5 million deaths. Recent data has shown high incidence of venous thrombo-embolism in patients with COVID-19, however there is paucity of data on coronary thrombosis. We hereby highlight five patients with EKG presentations of ST elevations on electrocardiogram.

Case: Description in table 1

Decision-making: Based on a study by Stefanini et al, up to 40% of COVID-19 patients with ST elevation on EKG, did not have any identifiable culprit lesion based on angiography. We highlight five such cases with EKG findings of ST elevation including patients with coronary thrombosis. Utilizing bedside echocardiogram and looking for reciprocal changes on EKG's can assist with identifying true ischemia. Three of the reported patients had extensive coronary thrombosis in the absence of significant concomitant coronary artery disease. This could be due to denovo thrombosis in the coronary arteries, however a rupture of unstable plaque cannot be ruled out in entirety without use of optical coherence tomography use.

Conclusion: EKG manifestations in patients with COVID-19 can be varying. ST elevations in these patients are not uncommon and can be due to ischemia, stress cardiomyopathy or channelopathy. Recognizing true presentations of ischemia and identifying patients who need emergent revascularization represents a complex decision-making process.

	Patient 1	Patient 2	Patient 3	Patient 4	Patient 5
Patient characteristics					
Age (years)	40	60	70	40	25
Gender	Male	Female	Male	Male	Male
COVID status	Positive	Positive	Positive	Positive	Positive
BMI (kg/m ²)	28	33	21.3	30.7	28
Clinical presentation	Fever, shortness of breath, myalgias	Fatigue	Fever, chest pain, shortness of breath, cough	Fever, cough with sputum, shortness of breath	Chest pain, shortness of breath
Heart rate (beats/min)	88	46	112	69	121
Temperature (°F)	102.7	97.3	102	101	38.2
Blood pressure (mmHg)	96/51	100/74	112/82	137/98	126/71
Respiratory rate (breaths/min)	34	21	39	18	39
Oxygen saturation	83% on room air	99%	93% on 15 L high flow oxygen	96% on room air	98% on room air
Labs:					
Ferritin (ng/ml)	376	3038	5435	73	368.25
CRP (mg/L)	31	314	402	30.1	1.47
ESR (mm/hr)	NA	NA	62	7	12
Troponin (ng/ml)	73	68	2.31	<0.01	0.486
BNP (pg/ml)	NA	1542	32	NA	166
Imaging:					
Invasive Coronary angiography (Figure 2)	Yes	Yes	No	No	Yes
	Thrombotic occlusion of the mid LAD with significant clot aspirated during thrombectomy. Residual TIMI 2 flow despite use of vasodilators.	Extensive clot in left circumflex, no CAD in any vessel. (Figure 2a)	Given suspicion of stress induced cardiomyopathy and overall clinical deterioration at the time	Not done, presentation consistent with unmasking of Brugada pattern	Large amount of clot noted in the distal-apical LAD. No CAD. (Figure 2b)
Diagnosis	STEMI, coronary thrombosis	STEMI, coronary thrombosis	Takotsubo's cardiomyopathy	Type I Brugada pattern	STEMI, coronary thrombosis
Specific Intervention for EKG presentation	Drug eluting stent placement to mid LAD	Aspiration thrombectomy and PCI	Conservative management	Fever control, follow up with Electrophysiology	Plain old balloon angioplasty (POBA)

