

ST-SEGMENT ELEVATION MYOCARDIAL INFARCTION IN THE SETTING OF DIFFERENTIATION SYNDROME

Sanjay Chandrasekhar¹, Ashton Vautier¹, Michael Fradley²

¹ University of South Florida, Department of Internal Medicine

² H. Lee Moffitt Cancer Center and Research Institute



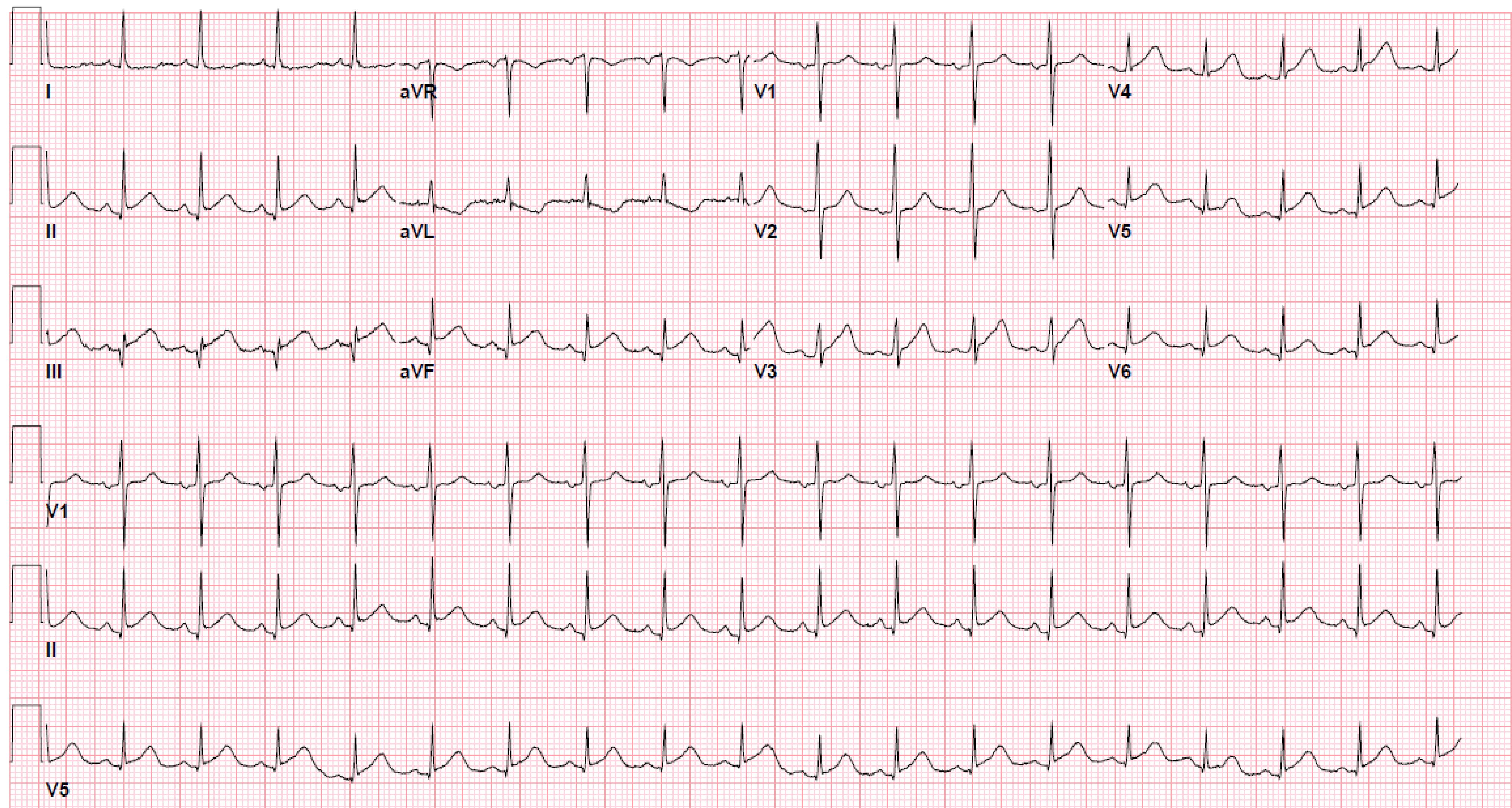
Background

Differentiation syndrome is a life-threatening complication in patients with acute promyelocytic leukemia (APL) undergoing therapy with arsenic trioxide or all-trans retinoic acid (ATRA). It has been shown that differentiation syndrome is associated with a pro-coagulation state that can lead to thrombosis and acute coronary syndrome (ACS)

Case

59 year old female without significant past cardiac history presented with newly diagnosed acute promyelocytic leukemia (APL)

- Patient was initiated on ATRA and idarubicin
- Differentiation syndrome was diagnosed at time of initiation of the treatment regimen given fevers, radiographic opacities, and bilateral pleural effusions associated with dyspnea as well as evidence of disseminated intravascular coagulation.
- Treatment started with intravenous dexamethasone 10mg twice daily and broad-spectrum antibiotics.
- On day 15, the patient developed substernal chest discomfort associated with dyspnea
- ECG demonstrated ST elevations and new Q-waves in the inferior leads II, III, and aVF with ST depressions in leads I and aVL. Troponin I was elevated at 0.107 ng/mL.
- A CT scan excluded a pulmonary embolus
- Transthoracic echocardiography with newly reduced left ventricular ejection fraction of 35-40% without notable wall motion abnormalities.



Decision Making

- Patient sent emergently for left heart catheterization at tertiary center
- Left heart catheterization revealed a 100% thrombosis in the right posterior descending vessel with TIMI grade 1 flow
- Not a candidate for anti-platelet or anti-coagulation therapy due to anemia and thrombocytopenia.
- Given the patient's ongoing treatment for APL and persistent thrombocytopenia, PCI was deferred.

Conclusions

- This case demonstrates the potential for ACS in the setting of differentiation syndrome complicating the treatment of hematologic malignancies
- Significantly higher rates of arterial and venous thrombosis are reported in patients with differentiation syndrome.
- Clinicians should be aware of the potential for ACS in the setting of differentiation syndrome and an aggressive evaluation for ischemic heart disease should occur
- While treatment can be challenging with ongoing thrombocytopenia, employing appropriate risk mitigation strategies can often allow for effective management.

References/Disclosures

1. Stahl M, Tallman MS. Differentiation syndrome in acute promyelocytic leukaemia. *British Journal of Haematology*. 2019;187(2):157-162.
2. Tallman MS, Lefebvre P, Baine RM, Shoji M, Cohen I, Green D, Kwaan HC, Paietta E, Rickles FR. Effects of all-trans retinoic acid or chemotherapy on the molecular regulation of systemic blood coagulation and fibrinolysis in patients with acute promyelocytic leukemia. *J Thromb Haemost* 2004; 2: 1341-50.
3. Miguel A. Sanz, Pau Montesinos; How we prevent and treat differentiation syndrome in patients with acute promyelocytic leukemia. *Blood* 2014; 123 (18): 2777-2782.

Disclosures: The authors of this poster have no financial or professional disclosures at this time.