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5-Fluorouracil induced coronary thrombosis

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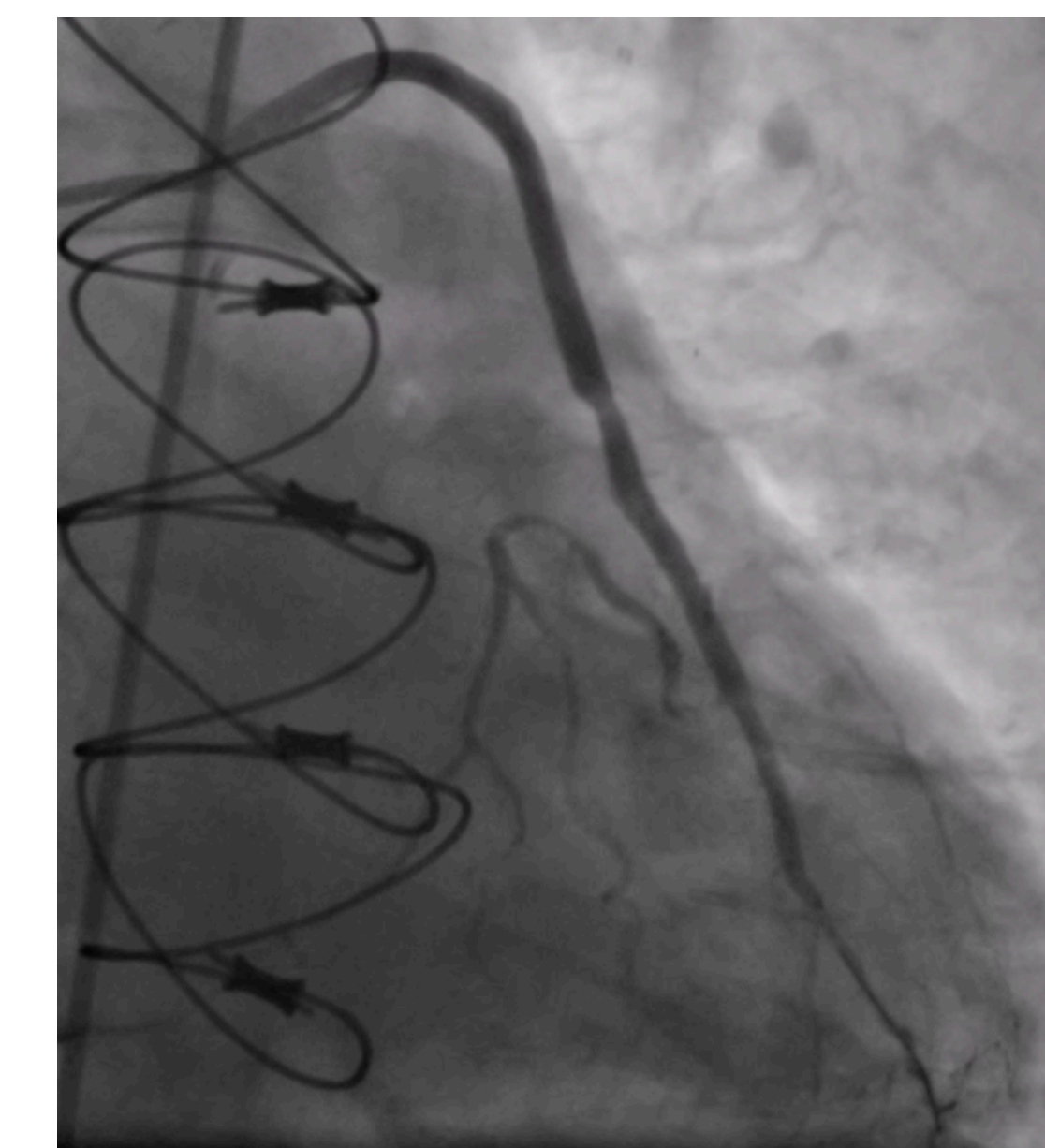
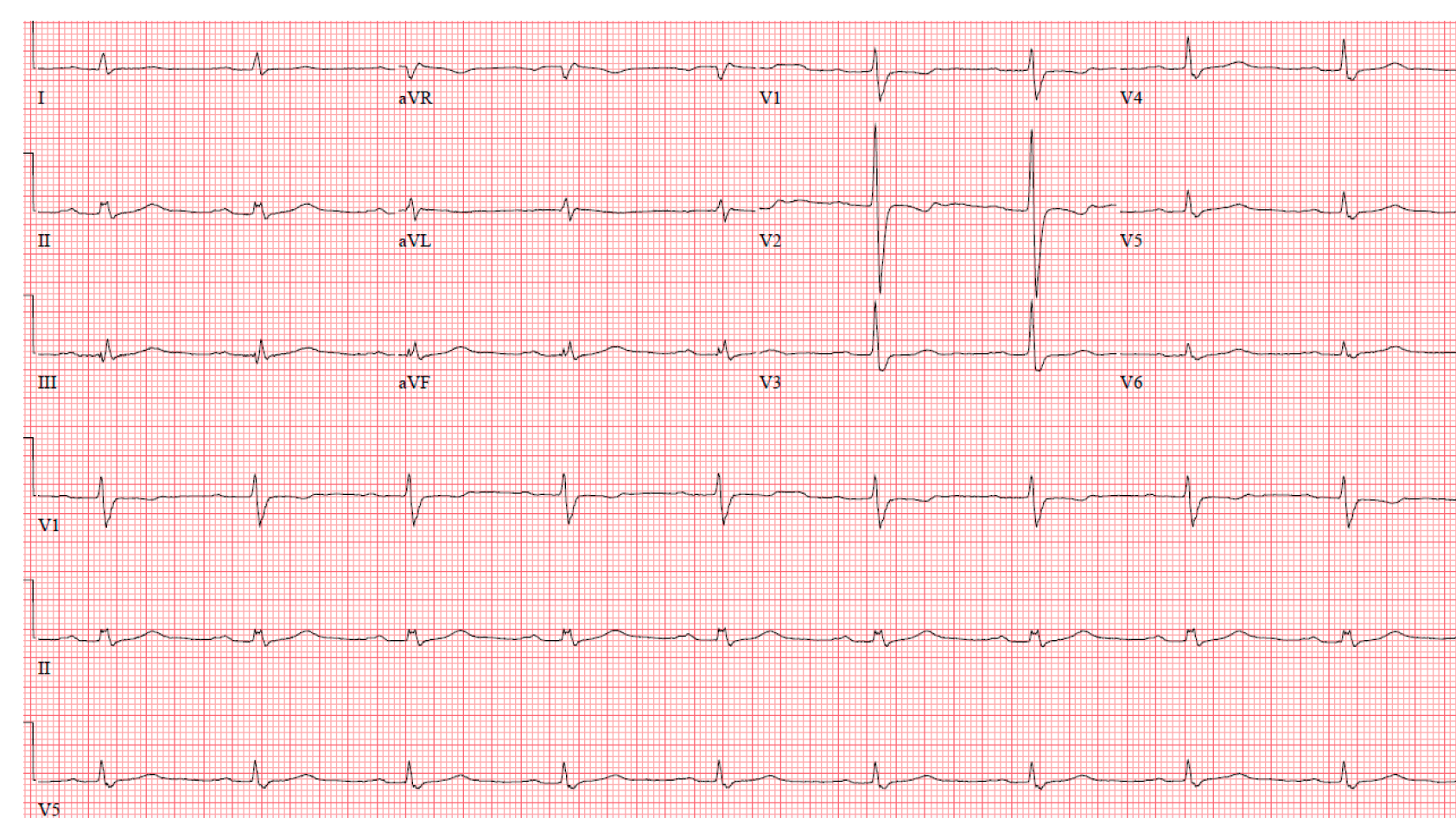
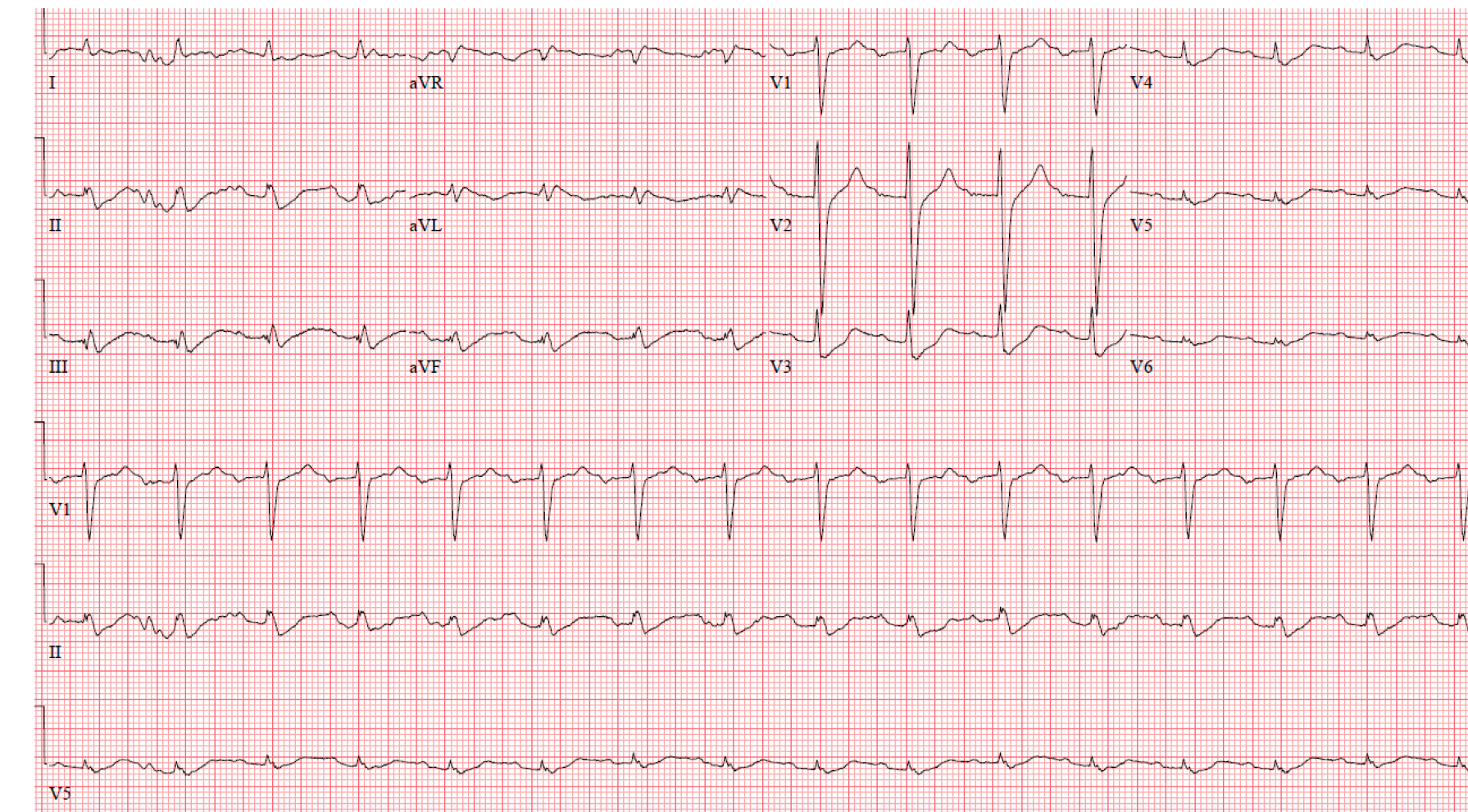
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Introduction

- 5-Fluorouracil (5-FU) is considered to be the backbone of colorectal cancer (CRC) systemic therapy since the great majority of recommended regimens include its administration. However, there are a few reports showing direct cardiac toxicity of the drug, causing elevated troponins by direct heart injury or coronary thrombosis. The drug use in patients with coronary artery disease (CAD) is a challenge especially when they develop chest pain. We report a patient with known stable CAD and new episode of chest pain after 5-FU infusion for CRC treatment.

Case Description

- This is a 51-year-old man with a past medical history significant for CAD with previous coronary bypass surgery, asymptomatic from a cardiac standpoint, and CRC in chemotherapy with 5-FU who presented at emergency department with chest discomfort and acute onset shortness of breath.
- According to the patient, he went to his outpatient chemotherapy and minutes after the infusion of the drug he developed anterior chest pain, sharp, associated with nausea, vomiting and cold sweats. He was hypoxemic and hypotensive. Initial troponins were positive, and his ECG did not show any signs of acute ischemia. He was intubated and sent to intensive care unit.
- Repeated ECG did not show acute signs of ischemia. A possible diagnose of myocardial injury to chemotherapy was made. Echocardiogram was performed showing signs of wall motion abnormalities in the apical and lateral leads with an ejection fraction of 35% comparing to 50% in a previous and recent echocardiogram. Cardiology was consulted and it was decided to proceed with heart catheterization as patient's condition was deteriorating with increased needs of vasopressors. In the heart catheterization, it was found an acute occluded saphenous graft to marginal branch of circumflex artery and a stent was placed



- After heart catheterization, vasopressors were weaned off and repeated echocardiogram showed an ejection fraction of 45%. Patient was extubated and discharged home one week later with no symptoms

Discussion

- Chemotherapy toxicity with 5-FU is a rare phenomenon and is more common in patients with previous coronary artery disease.
- The toxicity can be direct to cardiac myocytes, associated with coronary vasospasm and less common and rare caused by coronary thrombosis.
- Continuous infusion regimen is more likely to cause toxicity when comparing to short period drug administration.
- Usually, the toxic effects are observed in the first cycle of chemotherapy a few hours after the beginning of treatment but can be as late as 2 days after the drug infusion.

- Coronary thrombosis due to endothelial dysfunction with platelet aggregation and fibrin formation has been shown in experimental studies, even though demonstration of coronary thrombosis in patients with chest pain and 5-FU administration are sparse.
- Treatment consists of immediate discontinuation of infusion and ischemia management. Rechallenge with the drug may be attempted but risks and benefits should be well measured because mortality rates can be as high as 13%.

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Disclosure

The present author has no actual or potential conflict of interest in relation to this poster.