

## Thrombocytosis and Coronary Occlusion

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## IMAGES IN INTERVENTION

# Thrombocytosis and Coronary Occlusion

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The differential diagnosis for ST-segment elevation myocardial infarction in young patients without traditional risk factors for coronary artery disease often includes coronary artery vasospasm, dissection, and pericarditis. However, in the setting of focal, sustained arterial closure, one must again revisit a platelet-mediated mechanism. We report a case of platelet-mediated occlusion due to essential thrombocytosis.

A 33-year-old Caucasian man with a recent diagnosis of essential thrombocytosis (platelet count 684,000/ $\mu$ l) and JAK-2 mutation presented with acute severe chest pain, preceded by 2 weeks of intermittent pain. Inferior ST-segment elevation myocardial infarction was diagnosed, and coronary angiography was emergently performed. An occlusive mid-right coronary artery lesion was seen (Fig. 1) and a Promus 4.0  $\times$  28-mm everolimus-eluting stent (Boston Scientific, Natick, Massachusetts) was placed after thrombectomy. Distal embolization was noted in the posterior descending artery. Additionally, a large non-occlusive thrombus was seen in the left anterior descending artery (Fig. 2), treated with 18 h of eptifibatide. Clopidogrel and aspirin were started, and the patient was discharged 3 days later in stable condition. No further therapy was recommended specifically for the essential thrombocytosis.

Essential thrombocytosis, typified by abnormal megakaryocyte proliferation (1), is rare, with an incidence of approximately 2.5 to 7 of 1,000,000 (1,2). It can be associated with both thrombosis and hemorrhage (3). Even rarer is coronary artery thrombosis, especially in those without traditional risk factors, with few reported cases (1,3). Thrombosis in the left anterior descending coronary artery



**Figure 1. Acute Occlusion of the Right Coronary Artery**

Right coronary artery angiography left anterior oblique view reveals occlusion in the mid segment with thrombus and Thrombolysis In Myocardial Infarction (TIMI) flow grade 0. A Promus 4.0  $\times$  28-mm everolimus-eluting coronary stent was then placed across this occlusion with restoration of TIMI flow grade 3.

was most common, with fewer reports of multivesel thrombosis (3). Proposed management strategies include coronary artery bypass grafting, intracoronary thrombolysis, and primary percutaneous intervention (2). Randomized or definitive retrospective data are, however, not available. Although a first episode of thrombosis may predispose to additional episodes (4), the efficacy of long-term dual antiplatelet agents in prevention is unknown. A particular JAK-2 mutation has been associated with an increased risk of thrombosis, although inconclusive (4). Also noteworthy as seen here is that thrombosis can occur without a severely abnormal platelet count.

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**Figure 2. Thrombus in the Left Anterior Descending Coronary Artery**

Left coronary artery angiography right anterior oblique caudal view reveals the left anterior descending coronary artery (**arrow**) with a large non-occlusive thrombus (**circled**) in the proximal segment with Thrombolysis In Myocardial Infarction flow grade 3.

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