A 60-year-old woman was transferred for coronary angiography after a non-Q-wave myocardial infarction. She was treated with aspirin, metoprolol, unfractionated heparin, and abciximab administered as a weight-based bolus followed by infusion. A complete blood count in blood anticoagulated with EDTA (purple-top Vacutainer) was obtained shortly after her arrival in the catheterization laboratory, 4 hours after the abciximab bolus. The reported platelet count had decreased from 440,000/mL to 21,000/mL. Examination of the peripheral blood smear revealed prominent clumping of the platelets (Figure, bottom). Repeat analysis performed in the catheterization laboratory in blood anticoagulated with citrate (blue-top Vacutainer) demonstrated a true platelet count of 320,000/mL associated with a normal appearance of the peripheral smear (Figure, top). She subsequently underwent angiography without delay or complications.

Pseudothrombocytopenia is an artifactual clumping of platelets in vitro without clinical significance. Most frequently, EDTA alters the conformation of the platelet surface glycoprotein IIb such that a neoepitope is exposed that is recognized by autologous antibodies. The incidence of pseudothrombocytopenia in the general population is ~0.1%. The incidence of pseudothrombocytopenia was 1.1% in patients receiving abciximab as a bolus plus infusion in the EPIC trial, whereas the incidence of true acute thrombocytopenia was 2.7%. Thus, pseudothrombocytopenia is an important etiology of thrombocytopenia to consider in patients receiving abciximab.

Evaluation of the automated platelet count and peripheral smear in blood anticoagulated in citrate can distinguish pseudothrombocytopenia from heparin-induced thrombocytopenia and true thrombocytopenia related to abciximab. The distinction is critical because with pseudothrombocytopenia, thrombotic or hemorrhagic risk is not increased, antithrombotic and antiplatelet therapy can be continued, and invasive procedures can be performed.
Citrate

EDTA
Abbreviation: PTP

Abbreviation: TEG

Abbreviation: TPF

Abbreviated: DVT

Abbreviated: MVT

Abbreviated: DIC

Abbreviated: HAT

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