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A case of acute intrastent thrombosis accompanied by arterial thrombosis in the lower extremities after percutaneous coronary intervention

To the Editor,

Acute coronary stent thrombosis is one of the most serious complications of percutaneous coronary intervention (PCI). The incidence rate of acute stent thrombosis ranges from 0.4% to 0.6% (1). This report describes a case of intrastent thrombosis within 24 hours after coronary artery stent placement, followed by arterial thrombosis in the lower extremity.

A male patient, aged 54 years, was admitted to the hospital due to chest tightness and chest pain. The patient underwent coronary angiography and the results indicated right coronary artery (RCA) narrowing greater than 90% at the most severe location, 60% narrowing in the original stents, and 70% narrowing at the distal end. A stent was placed in the proximal segment of the RCA. However, retention of the contrast agent was observed in the stent of the proximal segment, and vascular wall dissection was considered. Another stent was implanted into the site of the vessel wall dissection, completely covering the dissection.

The patient suddenly had persistent chest pain, chest tightness, and shortness of breath 6 hours after the intervention. Emergency coronary angiography showed thrombosis and occlusion in the proximal segment of the RCA. After balloon dilatation was performed at the site of the thrombus, angiography showed resolution of the RCA occlusion and Thrombolysis in Myocardial Infarction 3 forward blood flow with no dissection or hematoma, indicating a successful intervention.

The patient then experienced persistent pain and numbness

in the right lower extremity 15 hours after the second intervention, and a physical examination found no pulse palpable in the dorsalis pedis artery. Angiography of the right iliac artery was performed immediately, and indicated narrowing of the superficial femoral artery greater than 80%, thrombosis and occlusion in the proximal segment of the superficial femoral artery, and disappearance of forward blood flow. An Export aspiration catheter (Medtronic, Inc., Minneapolis, MN, USA) was guided to the superficial femoral artery, a small amount of thrombotic debris was aspirated, and a stent was placed at the site of stenosis in the superficial femoral artery.

The common causes of acute coronary stent thrombosis include: (1) factors related to coronary artery lesions: restenosis lesions, vascular graft lesions, opening lesions, bifurcation lesions, chronic occlusive lesions, or small vessel diffuse lesions; (2) factors associated with the technical operation: inappropriate stent diameter, incomplete expansion and adherence of the stent, multi-stent overlapping or excessively long stents, vascular wall dissection, or intramural hematoma; and (3) factors related to medication: low response to aspirin or clopidogrel sulfate or premature discontinuation of antiplatelet drugs (2, 3).

At present, emergency intervention is the preferred treatment for acute stent thrombosis (4). The patient in this report was given emergency percutaneous transluminal coronary angioplasty treatment, which rapidly opened the thrombus-occluded blood vessels. Research shows that stenting is an acceptable revascularization treatment for peripheral artery disease (5). This patient's intervention treatment regimen yielded a satisfactory therapeutic effect, with significant postoperative improvement of the symptoms and no complications. In summary, acute stent thrombosis is a life-threatening complication after PCI, and thrombus removal and recanalization through emergency PCI is its best treatment.

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