An Uncommon Complication of Streptokinase: Large Spontaneous Iliopsoas Hematoma

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Received: 10 Oct. 2014; Accepted: 26 May 2016

Abstract- Streptokinase is a fibrinolytic agent that enhances plasmin activation and is used in selected patients with acute ST elevation myocardial infarction (STEMI). Similar to the other thrombolytics, a common side effect is bleeding, especially from venous puncture sites. Here, we present a case of acute anterior wall STEMI complicated by large spontaneous iliopsoas hematoma after streptokinase administration. With conservative management, the course of the disease was uneventful, and the patient was discharged with no symptom and no clinically important sequel.

Acta Med Iran 2017;55(6):411-413.

Keywords: Streptokinase; ST elevation myocardial infarction; Hematoma; Iliopsoas muscle

Introduction

Myocardial infarction (MI) is a common disease with a high mortality rate worldwide (1). The principal management for the ST elevation subtype of MI (STEMI) is immediate revascularization either with the primary percutaneous coronary intervention (PCI) or with the thrombolytic agents (2). The most common side effect encountered during the thrombolytic therapy is bleeding which is more common at the puncture sites (3). Paraspinal muscles like iliopsoas are rare sites for bleeding and the hematoma formation (3). It is a tough decision to make whether to continue or to stop blood thinner medications including anti-platelet or anti-coagulant agents in a patient complicated by bleeding after thrombolytic treatment (4).

Case Report

A 58-year-old Caucasian male presented to the emergency department of our center with an acute chest pain of several hours duration typical for myocardial infarction. An electrocardiogram demonstrated ST elevation in all the precordial leads and confirmed the diagnosis of anterior wall STEMI. Since PCI could not be carried out immediately, the patient received an intravenous infusion of 1500,000 units of Streptokinase (SK), plus aspirin (325 mg) and clopidogrel (300 mg), to which he responded adequately. He was then transferred to the Coronary Care Unit (CCU) and within less than 24 hours of arrival, coronary angiography was done which showed a significant thrombotic lesion in the left anterior descending artery with good run-off. Hence PCI with drug-eluting stent implantation was performed successfully without any complication.

After administration of SK and before proceeding to the PCI, the patient complained of having a dull pain in his left thigh and also redness in both eyes. On physical examination, he had no ecchymosis or bulging at the site of the pain, and abdominal examination revealed no tenderness. Conservative management of the pain was pursued initially. However, because of the patient's constant pain and developing tenderness on the left lower quadrant of his abdomen, an abdominal computed tomographic (CT) scan without contrast was performed which revealed enlargement of the left iliopsoas muscle with heterogeneous attenuation; a finding which is consistent with a large iliopsoas hematoma (Figure 1). The patient was hemodynamically stable with no cardiac symptoms. However, a significant drop in the hemoglobin level (from 16 mg/dl to 10 mg/dl) was detected. Transfusion of packed red blood cell, as well as other conservative interventions, was started. Anti-platelet therapy was also continued under close

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monitoring of his hemoglobin level and vital signs. After one week, the symptoms were totally subsided, and the hemoglobin level returned to normal. The patient was finally discharged in a good clinical condition and acceptable lower extremity motion range and without any signs of further bleeding.

Figure 1. Computed Tomography of pelvis shows a left-sided large iliopsoas hematoma

Figure 2. MRI of the same patient one month later shows resolution of left-sided iliopsoas hematoma.

Discussion

All of the accepted guidelines for STEMI recommend the use of fibrinolytic agents in patients who cannot receive primary PCI in an appropriate time (1,2). The most common complication of fibrinolytic therapy is bleeding. Minor bleeding at puncture sites is reported in 3 to 4 percent of patients. The incidence of moderate bleeding without hemodynamic compromise but needing transfusion or other interventions is believed to be 11.4 percent. Major Bleedings including gastrointestinal or intracranial bleeding are much less common (1.8 percent). (3,4,5,6,7).

With an incidence of 1.3% to 6.6% per year, retroperitoneal hemorrhage and bleeding into the iliopsoas muscle are rare events and are more commonly seen in trauma and hemophilic patients. It may also occur in whom receiving anticoagulation or other blood thinners, having vascular lesions, and surgical procedures, or it can be idiopathic (8,9,10,11 and 12).

Common clinical signs of iliopsoas hematoma include groin pain, leg weakness (due to the involvement of the femoral nerve and lumbar plexus neuropathy), massive bleeding and shock (13). Clinical diagnosis can be confirmed by abdominal CT scan (14).

Conservative management is sufficient for cases with small hematomas and mild symptoms of femoral neuropathy, but immediate surgical decompression has been recommended in cases of life-threatening complications. Recently, Qanadli *et al.*, reported the first successful treatment by using transcatheter arterial embolization for severe psoas hematoma secondary to anticoagulant medications (15).

In summary, the possibility of iliopsoas hematoma should be considered in any patient receiving anti-thrombotic treatment, even if coagulation test values are in the therapeutic range. In the presence of any suggestive signs, severe anemia or neurological deficit, CT examination of the pelvis must be performed immediately to detect any active bleeding in the iliopsoas muscle and if present, management strategy should be chosen according to severity of symptoms. In a case like this, conservative management can be more challenging because continuing standard treatment including dual anti-platelet therapy has strong indication because of recent MI and PCI with stent implantation. In our patient, conservative management and not withholding anti-platelet agents was uneventful, and all of the symptoms were totally resolved.

Streptokinase is used widely as an effective and inexpensive thrombolytic agent in various common and life threatening medical situations including acute STEMI. Iliopsoas hematoma is a rare hemorrhagic complication for which conservative management with serial monitoring of signs and symptoms could be a reasonable approach.

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