

Spontaneous massive intraperitoneal hematoma accompanied by acute severe anemia after low-dose thrombolytic therapy

Düşük doz trombolitik tedavi sonrasında akut ciddi anemiyle birlikte görülen spontan dev intraperitoneal hematoma

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Hemorrhagic complications may occur after thrombolytic therapy. An 80-year-old woman was admitted with acute anteroseptal myocardial infarction (MI) at three hours of onset. Half-dose streptokinase (750,000 U) along with conventional MI agents was initiated. At 15 hours of hospitalization, the patient began to complain of abdominal pain and distention of increasing intensity. Abdominal computed tomography demonstrated a huge intraperitoneal hematoma, 15 x 14 x 12.5 cm in size, located anterior to the bladder, compressing the bladder. There was a dramatic decrease in hemoglobin level from 12.5 gr/dl (before thrombolysis) to 6.6 gr/dl. The anemia was corrected urgently with four units of blood transfusion. During follow-up, the size of the hematoma diminished and surgical intervention was not considered.

Key words: Anemia; hematoma; myocardial infarction; streptokinase/adverse effects; thrombolytic therapy/adverse effects.

Hemorrhagic complications may be encountered after thrombolytic therapy, but most bleeding episodes are generally minor with all thrombolytic agents. We herein present an elderly female patient who developed a huge spontaneous intraperitoneal hematoma leading to acute severe anemia shortly after thrombolytic therapy with streptokinase for acute myocardial infarction (MI).

CASE REPORT

An 80-year-old woman was admitted to our centre with acute anteroseptal MI at three hours of onset. Findings of physical examination were normal including blood pressure (120/80 mmHg). The electrocardiogram (ECG) demonstrated ST-segment ele-

Trombolitik tedavi sonrası kanama komplikasyonları gelişebilir. Seksen yaşında kadın hasta akut anteroseptal miyokard infarktüsü (Mİ) nedeniyle üçüncü saatte yatırılarak yarım doz streptokinaz (750,000 U) ve diğer Mİ ilaçlarıyla tedaviye başlandı. Yatışının 15. saatinde hasta karın ağrısından ve şiddeti giderek artan distansiyondan yakınmaya başladı. Batın bilgisayarlı tomografisinde mesanenin ön tarafında ve mesaneyi baskılayan, 15 x 14 x 12.5 cm boyutlarında dev bir intraperitoneal hematoma görüldü. Hastanın hemoglobin düzeyi de trombolitik tedavi öncesine göre 12.5 gr/dl'den 6.6 gr/dl'ye keskin bir düşüş gösterdi. Hastanın anemisi dört ünite kan transfüzyonu ile düzeltildi. Hematom ise klinik izlem sırasında kendiliğinden gerileyerek cerrahi girişime gerek kalmadı.

Anahtar sözcükler: Anemi; hematoma; miyokard infarktüsü; streptokinaz/yan etki; trombolitik tedavi/yan etki.

vation and pathologic Q waves in leads V1-V4, and ST-segment depression in leads D2, D3, and aVF. Half-dose streptokinase (750,000 U) along with conventional MI therapy (beta-blocker, nitrate, etc.) was initiated. After thrombolytic therapy, serial ECG recordings demonstrated ST-segment normalization in the related leads with concomitant diminution of chest pain. At 15 hours of hospitalization, the patient began to complain of abdominal pain and distention of increasing intensity. Prompt abdominal ultrasonography demonstrated an indistinct mass-like structure in the lower abdomen. For better visualization of the mass, abdominal computed tomography was performed, which demonstrated a huge intraperitoneal hematoma (15 x 14 x 12.5 cm) located anteri-

Received: January 23, 2007 Accepted: February 20, 2007

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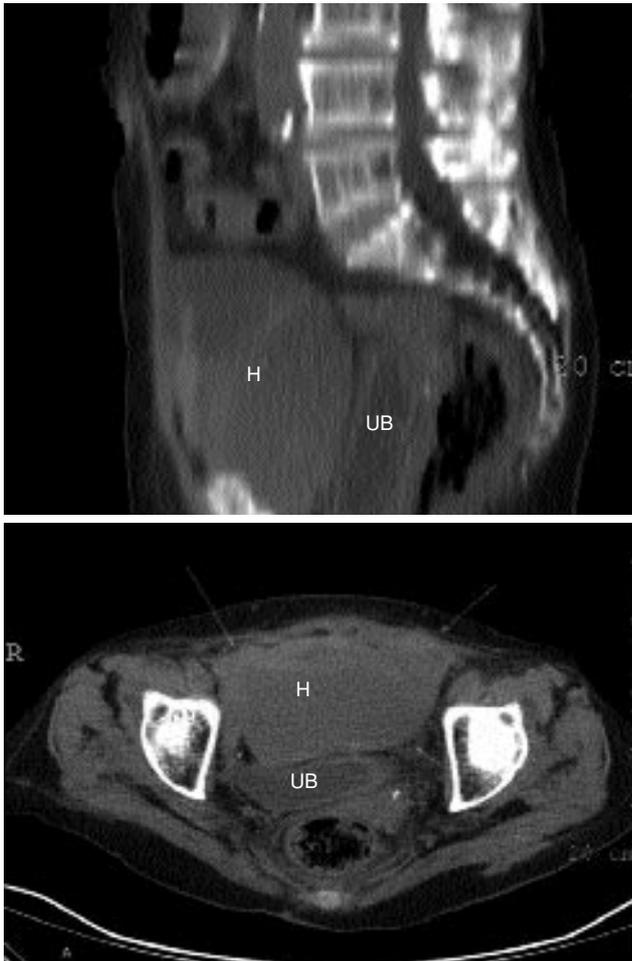


Figure 1. Computed tomography images of the huge intraperitoneal hematoma compressing the bladder. H: Hematoma; UB: Urinary bladder.

or to the bladder (Fig. 1). The hematoma appeared to compress the neighboring organs including the bladder. There was no other coexistent intra-abdominal pathology. The patient had no history of an invasive procedure (surgery, angiography, etc.), trauma, or bleeding diathesis. Hemoglobin decreased from a level of 12.5 gr/dl (before thrombolysis) to 6.6 gr/dl. The ensuing anemia was corrected urgently with four units of blood transfusion. During follow-up, the size of the hematoma diminished and surgical intervention was not considered.

DISCUSSION

Thrombolytic therapy is considered a major breakthrough in the treatment of acute MI.^[1] Bleeding complications may occur after thrombolysis, but most episodes are generally minor with all thrombolytic agents.^[2] Bleeding due to thrombolysis usually stems from a perivascular access site, mucosal (oral, gastrointestinal, urinary, etc.) or skin/soft tis-

sue. Bleeding episodes may be more serious in patients requiring invasive procedures.^[3] The most feared bleeding complication due to thrombolysis is intracerebral bleeding, which is encountered in 0.4% of patients.^[4] Older age, female gender, and low body mass index are regarded as major risk factors for bleeding after thrombolysis. Some unusual cases with spontaneous pulmonary hemorrhage,^[5] splenic hemorrhage,^[6-8] large subesophageal hematoma,^[9] and rectus muscle hematoma^[10] have been associated with thrombolytic therapy.

The case presented here had some risk factors (older age, female gender), but had no history of an invasive procedure, trauma, or bleeding diathesis. She developed a huge spontaneous intraperitoneal hematoma (with acute severe anemia) compressing the bladder after half-dose streptokinase regimen. To our knowledge, such a huge spontaneous intraperitoneal hematoma after low-dose thrombolytic therapy has hitherto not been reported. This case clearly demonstrates that, even in reduced doses, there is high risk for massive hemorrhage due to thrombolytic therapy particularly in elderly female patients.

REFERENCES

1. Randomised trial of intravenous streptokinase, oral aspirin, both, or neither among 17,187 cases of suspected acute myocardial infarction: ISIS-2. ISIS-2 (Second International Study of Infarct Survival) Collaborative Group. *Lancet* 1988;2:349-60.
2. Antman EM, Braunwald E. Acute myocardial infarction. In: Braunwald E, editor. *Heart disease: a textbook of cardiovascular medicine*. 5th ed. Philadelphia: W. B. Saunders; 1997. p. 1219-20.
3. Dubois CL, Belmans A, Granger CB, Armstrong PW, Wallentin L, Fioretti PM, et al. Outcome of urgent and elective percutaneous coronary interventions after pharmacologic reperfusion with tenecteplase combined with unfractionated heparin, enoxaparin, or abciximab. *J Am Coll Cardiol* 2003;42:1178-85.
4. ISIS-3: a randomised comparison of streptokinase vs tissue plasminogen activator vs anistreplase and of aspirin plus heparin vs aspirin alone among 41,299 cases of suspected acute myocardial infarction. ISIS-3 (Third International Study of Infarct Survival) Collaborative Group. *Lancet* 1992;339:753-70.
5. Awadh N, Ronco JJ, Bernstein V, Gilks B, Wilcox P. Spontaneous pulmonary hemorrhage after thrombolytic therapy for acute myocardial infarction. *Chest* 1994;106:1622-4.
6. Blankenship JC, Indeck M. Spontaneous splenic rupture complicating anticoagulant or thrombolytic therapy. *Am J Med* 1993;94:433-7.

7. Li G, McDonald G, Chen P. A 63-year-old man who developed severe abdominal pain after thrombolytic therapy. *Circulation* 1993;88:2973-7.
8. Enar R, Pehlivanoglu S, Ersanli M, Baltay A, Celiker C, Yazicioglu N. Spontaneous splenic rupture complicating thrombolytic therapy in acute myocardial infarction. *Int J Angiol* 1998;7:107-8.
9. Price GC, Kulkarni AP, Saxena M, O'Leary M. Hard to swallow: an unusual complication of thrombolysis. *Emerg Med J* 2004;21:747-9.
10. Yilmaz MB, Akin Y, Guray U, Kisacik H, Korkmaz S. Spontaneous rectus muscle hematoma following streptokinase therapy for acute myocardial infarction: a case report. *Int J Cardiol* 2002;84:101-3.