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Visual Diagnosis in Emergency Medicine

SPONTANEOUS RETROPERITONEAL HEMORRHAGE

Christodoulos Dolapsakis, MD, Vasiliki Giannopoulou, MD, and Evgenia Grivakou, MD

3rd Department of Internal Medicine, Evangelismos General Hospital, Athens, Greece

Corresponding Address: Christodoulos Dolapsakis, MD, Evangelismos General Hospital, 3rd Department of Internal Medicine, Ipsilantou 45-47, Athens 10676, Greece

CASE REPORT

A 68-year-old man was admitted for pneumonia. Three months earlier he had suffered an embolic ischemic stroke related to newly diagnosed atrial fibrillation. He had residual aphasia, right hemiparesis with hemianesthesia, and was treated with subcutaneous enoxaparin 60 mg twice daily at the time of admission. Initial laboratory tests showed a white blood cell count of 12.480/mm^3 and a hemoglobin level of 12.6 g/dL.

On the third day of admission, he developed hypotension and his hemoglobin level dropped to 8.5 g/dL without clinical evidence of blood loss. Renal function was normal. At clinical examination there was tenderness on deep palpation in the right lower abdominal quadrant and a grimace of pain during the passive flexion of the right hip. Abdominal ultrasound was normal with no free intraperitoneal fluid. A contrast-enhanced computed tomography scan of his abdomen revealed a retroperitoneal hematoma involving the right iliopsoas muscle without extravasation of contrast and the presence of "hematocrit sign": a cellular fluid horizontal level generated by the precipitation of cellular elements in the dependent portion of the hematoma (Figure 1). Intravenous fluids, protamine, fresh frozen plasma, and packed red blood cells were given, and the condition of the patient stabilized. One month later anticoagulation with warfarin was initiated without complications.

DISCUSSION

Spontaneous retroperitoneal hemorrhage (SRH) may be of either parenchymal or vascular origin. The former originates from renal or adrenal masses, while the latter is mainly related to rupture of splanchnic arteries aneurysms. In absence of an arterial aneurysm or malformation, vascular SRH is exclusively seen in patients undergoing anticoagulation therapy, those with bleeding abnormalities, or those on hemodialysis, and SRH represent a potentially fatal complication of anticoagulation therapy. It is considered "major bleeding" in clinical trials of anticoagulant drugs, with a reported incidence of 0.6–6.6% and a mortality of about 20% (1). Symptoms are nonspecific, consisting mainly of localized pain, and therefore diagnosis is often delayed. SRH commonly involves the iliopsoas or gluteal muscles, and all types of anticoagulation therapy have been implicated. Contrary to common belief, supratherapeutic anticoagulation is not universally present in cases of SRH. In a series of 89 patients, only one third had supratherapeutic activated partial thromboplastin time or international normalized ratio, whereas 13 patients were not taking anticoagulant or antiplatelet medications (2). These findings highlight the participation of occult vasculopathy, unrecognized

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Figure 1. Contrast-enhanced computed tomography scan of the abdomen showing a retroperitoneal hematoma involving the right iliopsoas muscle with the presence of the "hematocrit sign" (arrow).

minor trauma, or muscular strain in the pathogenesis of SRH.

Emergency abdominal ultrasound is usually the first examination performed, but its sensitivity in detecting a retroperitoneal hemorrhage is low irrespective of its origin (3). Computed tomography (CT) is the imaging modality of choice when SRH is suspected. It establishes the diagnosis of retroperitoneal hemorrhage, identifies the bleeding origin in cases of abdominal aortic aneurysm, neoplasm, and kidney or adrenal lesions, and may show signs of active bleeding through the presence of extravasation of contrast. The hematocrit sign on a CT scan represents the subacute phase of the retroperitoneal hemorrhage and is highly specific for its coagulopathic origin, even in patients with an abdominal aortic aneurysm (4,5).

Treatment of SRH consists of anticoagulation reversal, volume resuscitation, and transfusion of blood products as needed. Patients without signs of active bleeding in CT and without neurologic signs will respond well to conservative management. In cases of continuing hemodynamic instability and active bleeding in CT angiography, selective arterial embolization can be successful (6). If interventional radiology is not successful or unavailable, surgical intervention is indicated. Decompressive evacuation of the hematoma is necessary in cases of neurologic compromise or abdominal compartment syndrome.

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