Letter to the Editor

Peripheral Pulmonary Embolism Related to a Thrombus of the Inferior Vena Cava Triggering Fatal Adrenal Crisis in Sheehan’s Syndrome

To the Editor;

Fatal adrenal crisis may occur in patients with chronic adrenocortical insufficiency under diverse stressful conditions, including infection [1], trauma [2], surgery [3], and gastrointestinal bleeding [4]. However, venous thrombosis appears to be uncommon as the cause.

We report here data on a 48-year-old Japanese woman who was brought to the hospital by ambulance due to loss of consciousness. She had been diagnosed as Sheehan’s syndrome when panhypopituitarism manifested itself after obstetrical labor 12 years ago. Up to that time, her clinical course had been generally stable under hydrocortisone and thyroid hormone treatments. Three days before admission, she came to a nearby doctor’s office complaining of fatigue, and she was given a drip infusion of Ringer’s solution. Laboratory examinations were not done at the time.

While transporting to the ward, cardiac and pulmonary arrest occurred, and she died of multiple organ failure 15 hours after admission. Laboratory data were as follows: white blood cell count 5,700/μL, red blood cell count 301 × 10^4/μL, blood urea nitrogen 33 mg/dL, creatinine 4.0 mg/dL, sodium 134 mEq/L, potassium 5.3 mEq/L, aspartate transaminase 35 U/L, alanine transaminase 25 U/L, lactate dehydrogenase 299 U/L, glucose 30 mg/dL, and C-reactive protein (CRP) 41.8 mg/dL.

Autopsy was done after we obtained written informed consent. The pituitary gland was missing macroscopically in the sella turcica. Histological examination revealed that S-100-positive posterior lobe was conserved, whereas the anterior lobe was replaced by fibrous and fatty tissues. Bilateral adrenal and thyroid glands were atrophic. These findings corresponded to Sheehan’s syndrome. Microscopic thrombi were dispersed in the peripheral region of lung (Fig. 1a). Although a small number of lymphocytes accumulated around the bronchi, there was no evidence of pneumonia. A white thrombus adhered to the inferior vena cava (IVC).

Fibrous change was evident in a part of the thrombus, which meant that it had been there for some time (Fig. 1b). Serious pathological findings were not evident in the cerebrum, cerebellum, heart, gastrointestinal tract, liver, gallbladder, pancreas, spleen, kidneys, urinary tract, or gynecological systems.

In the patient, the serum level of cortisol was 14.4 μg/dL. The titer seemed to be relatively low for the premortal level, considering that she took the drugs in the morning of admission day. The clinical course manifesting coma and shock with hypoglycemia suggested that adrenal crisis might be the cause of death [5]. The serum level of sodium was not extremely low, which may be related to the primary treatment at the former clinic. Since laboratory data indicated high titer of CRP, the major purpose of autopsy was to investigate for infectious foci. There was no evidence of infection; however, thrombosis of the IVC and peripheral embolism in the lung were noted as the most significant findings. Since serological examinations, including an analysis for anti-phospholipid autoantibodies, were not done, the cause of thrombosis remains obscure. Disseminated intravascular coagulation (DIC) was not evident.

Fig. 1. (a) Dispersed thrombi in the lung. (hematoxylin and eosin stain, original magnification: 400x) (b) The thrombus in the IVC with a partial organization. (Elastica van Gieson stain, original magnification: 40x)
(DIC) should be considered as a differential diagnosis; however, neither symptoms nor laboratory data suggestive of DIC were evident.

Collective evidence suggests that peripheral pulmonary embolism related to a thrombus in the IVC might have triggered a fatal adrenal crisis in the patient. Since venous thrombosis is apt to be missed, careful examinations and prompt treatments are needed in case we meet with uncertain complaint in a patient with chronic adrenocortical insufficiency.

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References