Ultrasound image of massive inferior vena cava thrombosis causing asymptomatic subclinical disseminated intravascular coagulation

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A 30-year-old woman was admitted to our hospital in October 1996 for investigation of a mild thrombocytopenia (platelets: 50×10^9/L) which had been present in previous check-ups. The woman had no past history of congenital coagulopathy or other important illnesses; she had been taking oral contraceptives for 15 years and she smoked fifteen cigarettes a day.

Clinical examination was negative and laboratory values were as follows: Hb 12 g/dL, WBC 16.9×10^9/L, peripheral blood smear showed a mild schistocytosis, with 86% neutrophils, 11% lymphocytes and 3% monocytes; platelets 56×10^9/L, PT INR was 1.56, fibrinogen 130 mg/dL, fibrin degradation products (FDP) 2.40 mg/mL, D dimer immunoassay: 5.2 µg/mL.

Renal and hepatic functions were normal, as were protein C, S, antithrombin III, aPTT; ANA, AMA, ASMA, lupus anticoagulants, anticardiolipin antibodies, antiplatelet antibodies, anti-DNA were negative. Bone marrow aspirate showed megakaryocyte hyperplasia. Ultrasound (US) examination of the abdomen was performed at admission, as part of the routine procedure in patients with an unknown diagnosis. The US examination was performed by one of us and massive thrombosis of the inferior vena cava was disclosed (Figure 1). An abdominal computerized axial tomography (CT) study confirmed the US image findings and the patient was referred to the surgical unit where she was treated with vena cava filter and fibrinolytic treatment with sodium heparin and urokinase. After 24 hours the patient underwent thrombectomy since medical treatment did not lead to satisfactory results. The patient was then discharged with a normal platelet count, aPTT, PT INR, fibrinogen and D dimer, antithrombin III and protein C and S.

After a 12-month follow-up, the patient's laboratory tests are normal and US examination shows a normal inferior vena cava (Figure 2).

Smoking and oral contraceptives can be associated with an increased incidence of venous thromboembolism,[1-3] of the deep veins of the lower limbs; massive thrombosis of the inferior vena cava is, however, a rare phenomenon.

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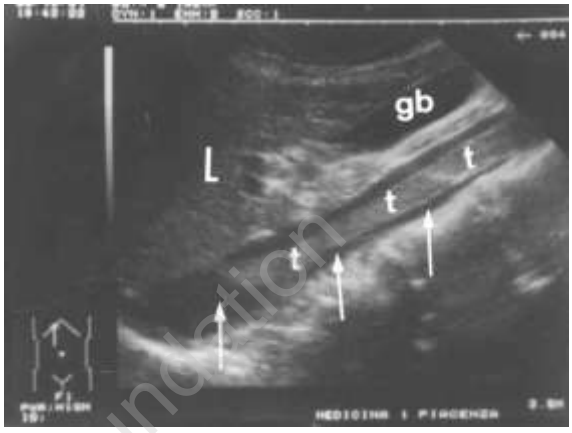

Figure 1. Longitudinal real-time US scan shows inferior vena cava, with a massive echogenic thrombus (t) within its lumen (arrows), (L: liver; gb: gallbladder).

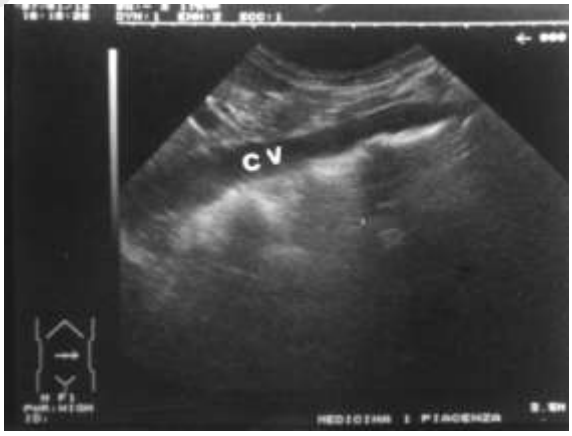

Figure 2. Longitudinal real-time US scan shows inferior vena cava (CV), after surgical treatment, with complete resolution of the thrombosis.

Our patient developed this condition, which caused a subclinical and asymptomatic disseminated intravascular coagulation (DIC), without having any other symptoms secondary to outflow obstruction such as edema or pain of the lower extremities.

An important point for us to emphasize is the strategic role that US examination had in our patient, disclosing a massive thrombosis of the inferior vena

cava which caused subclinical DIC and was potentially lifethreatening since pulmonary thromboembolism could have been a lethal complication of this thrombosis. The US diagnosis was made only four hours after the patient was admitted to hospital. As previously reported,[4-6] because of its simplicity, safety and accuracy, ultrasound is an important and useful imaging method in the management of patients with hematologic diseases.[7]

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LC was responsible for data handling, analysis, interpretation and writing of the paper. GC did the abdominal ultrasound. DV contributed to the clinical management of this patient.

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