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Commentary

Disseminated Intravascular Coagulation and the Neuroradiologist

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The preceding article by Boyko et al. [1] is a timely reminder of the frequency with which clinicians see disseminated intravascular coagulation (DIC) in association with head trauma. DIC itself is a hematologic abnormality that results from a pathologic activation of the blood-clotting enzymes. The process may be initiated by a variety of causes, including trauma, infection, obstetric accidents, stroke, and shock. Nevertheless, the end result is the same: intravascular clotting with simultaneous consumption of clotting factors (including fibrinogen) and diffuse intravascular fibrinolysis. The last component contributes to impaired hemostasis and spontaneous hemorrhage. DIC occurs in 30–56% of patients who have head trauma [2–4], and its presence is a significant risk factor for death [3].

The unusual feature of the case reported by Boyko et al., however, is the isodense nature of an acute subdural hematoma seen on head CT only with contrast enhancement. Such an isodense, or liquid, hematoma would require the almost total absence of clot. In our experience, this state of affairs is uncommon in DIC, but could indicate active or recurrent hemorrhage [4]. More probably, the patient described had an unusually severe consumption of his fibrinogen (the level was <10 mg/dl) or underlying hypofibrinogenemia from liver disease, or both. Nonetheless, the authors' use of contrast enhancement was important in this case for the evaluation of an otherwise unexplained midline shift. Alternatively, subdural hematoma from DIC might have been suspected if the patient had had purpura, easy bruisability, and bleeding from vessel puncture sites. (History is not given in this regard.) In most cases of head trauma, of course, it remains unwise to use contrast medium because of the risks of extravasation of a hyperosmolar and chemotoxic material into neural tissues. If a contrast agent is used at all, it should be one of the newer, less hyperosmolar nonionic agents, and it should be used sparingly.

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This article is a commentary on the preceding article by Boyko et al.

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