Traumatic Subarachnoid Hemorrhage With Immune Thrombocytopenia

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subarachnoid hemorrhage, immune thrombocytopenia, trauma, nervous system, cerebrovascular disorders, imaging, techniques

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Figure 1. Computed tomography of the head showing diffuse, thick, bilateral subarachnoid hemorrhage.

Immune thrombocytopenia (ITP) involves severe thrombocytopenia without clear cause and treatment options including intravenous immunoglobulin, prolonged corticosteroid therapy, and immunosuppressants such as rituximab and splenectomy. A platelet count of $<30 \times 10^9/L$ or less than 2-fold increase in platelet count from the baseline defines no clinical response to treatment in ITP.¹ The majority of neurological bleeding events associated with ITP occur with platelet counts $<20 \times 10^9/L$.²

We report a case of diffuse subarachnoid hemorrhage (SAH) in the setting of trauma and ITP. A 43-year-old woman who previously had no clinical response to treatment for ITP was brought to the hospital with headache following a motor vehicle collision. She had a Glasgow Coma Scale (GCS) of 15 and headache with a platelet count of $14 \times 10^9/L$. Computed tomography (CT) of the head (Figure 1)

Figure 2. Computed tomography angiography coronal reconstruction revealing the absence of intracerebral flow distal to the middle cerebral arteries, with the exception of a single prominent artery on the left.

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Figure 3. Conventional cerebral angiography with the selection of the left common carotid revealing the absence of intracranial flow with prominence of extracranial vasculature, reflecting hypoperfusion of the cerebral tissue due to either profound edema or, less likely, diffuse profound vasospasm.

revealed supratentorial diffuse, thick, bilateral SAH. She subsequently deteriorated in her mental status and was found

to have GCS 8. The CT angiogram (Figure 2) revealed a paucity of intracranial flow—likely due to diffuse edema or, less likely, cerebral vasospasm. She was given mannitol and hypertonic saline. She received rapid platelet transfusions and care for ITP under the direction of hematology. She underwent a conventional cerebral angiogram (Figure 3), which confirmed poor intracranial blood flow. She had brisk further clinical deterioration and was pronounced brain dead.

This case illustrates the propensity for life-threatening intracranial bleeding in patients who have treatment-refractory ITP.

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