Short Communication

An Unhappy Patient following Successful Sonothrombolysis in Vertebrobasilar Thrombosis: Dilemma with Final Diagnosis

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ABSTRACT

Acute vertebrobasilar thrombosis is often associated with high mortality and prolonged disability. Therapeutic route and the time window for systemic thrombolysis in acute settings remain uncertain. We describe a case of severe acute ischemic stroke due to vertebrobasilar thrombosis who achieved rapid arterial recanalization and remarkable clinical recovery during ultrasound enhanced intravenous thrombolysis, initiated at 4.5 hours after the symptom-onset. We discuss some important issues, related to the final diagnosis, that arise due to the complete clinical recovery, rapid arterial recanalization and absence of any acute infarction on subsequent neuroimaging.

Introduction

Acute ischemic stroke (IS) due to vertebrobasilar (VB) thrombosis is associated with high rates of mortality and prolonged disability. Therapeutic approach, especially the route and the therapeutic window for thrombolysis in acute settings continue to be debatable. We describe a case of severe acute IS due to VB occlusion in which intravenous thrombolysis coupled with continuous transcranial Doppler (TCD) monitoring, initiated at 4.5 hours after the symptom-onset resulted in complete arterial recanalization and rapid clinical recovery. We discuss some important issues, mainly related to the final diagnosis, arising due to the complete clinical recovery, rapid arterial recanalization, and absence of any acute infarction on subsequent neuroimaging.

Case Report

A 57-year-old woman was brought to our tertiary center with history of sudden deterioration in her level of consciousness about 3.5 hours ago. She had complained of giddiness during the first hour and her family members noted her speech to be slurred. There was no history of ingestion of any drug, fall, or fits. She had been apparently well prior to the ictus and did not suffer from any significant illness in past.

Upon arrival to the emergency room, she was stuporous with Glasgow coma scale score of 6 points (no eye opening, incomprehensible sounds, and abnormal flexion of right extremities to painful stimulus). She was afebrile, had blood pressure of 146/85 mmHg with a regular pulse (82 beats/minute) and pulse oximetry demonstrated 98% saturation on breathing room air. Random blood sugar level was normal (6.2 mmol/L). Neurological examination was remarkable for her markedly reduced level of consciousness and impaired eye movements on oculocephalic maneuver with sluggishly reacting pupils. National Institute of Health Stroke Scale Score (NIHSS) was 30 points.

Blood test (including urea, creatinine, electrolytes, and liver enzymes) results were within normal limits. An emergent computerized tomography (CT) of the brain, performed at 245 minutes from the symptom-onset, was unremarkable (Fig 1A). However, CT angiography demonstrated absence of contrast opacification in both intracranial vertebral arteries as well as proximal-mid basilar artery (BA) (Fig 1B). With the diagnosis of acute VB thrombosis, decision was made for intravenous thrombolysis, after discussion with the family members and obtaining an informed consent.

Intravenous bolus of tissue plasminogen activator (IV-tPA) was administered at 270 minutes from the symptom-onset. During the pre-IV-tPA bolus TCD ultrasonography through the transtemporal acoustic window (Fig 1C), no flow signals could