Bilateral Middle Cerebral Artery Occlusion In Rapid Succession During Thrombolysis

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Keywords

stroke, cerebrovascular disorders, coma, thrombolysis

Case Presentation

A 76-year-old female developed acute left hemiplegia, dysarthria, right gaze preference, and cerebral ptosis. Computed tomography (CT) scan demonstrated an Alberta Stroke Program Early CT Score (ASPECTS) of 10 and a hyperdense right middle cerebral artery (MCA) (Figure 1A and B). Shortly after the bolus of Tissue Plasminogen Activator (tPA) with the infusion running, she abruptly

became comatose. A repeat CT scan showed the resolution of her gaze preference and a new hyperdense left MCA sign (Figure 1C and D). Cerebral angiogram confirmed complete occlusion of the proximal MCA bilaterally (Figure 2). Despite attempts at clot retrieval, flow was partially restored. Transesophageal echocardiogram demonstrated left atrial enlargement without thrombus.

The patient remained comatose and, given her prior wishes, was transitioned to palliative care.

Figure 1. Top row: computed tomography (CT) scan on initial presentation demonstrating a right gaze preference (A) and hyperdense right MCA (B). Bottom row: CT scan after decompensation with resolution of the gaze preference (C) and a new hyperdense left MCA (D).

Discussion

The stepwise presentation in our patient, first hemiplegia with dysarthria due to a right MCA occlusion, followed by a subsequent left MCA occlusion just 2 hours later produced a dramatic clinical scenario with an initially alert patient becoming comatose within seconds. Compounding this case is the abrupt decline while tPA was infusing. A “shower” progressing during a tPA infusion has not been reported before, to our knowledge. It is conceivable a large intracardiac thrombus may have dissolved with the tPA bolus and then embolized to the opposite MCA. Failure to recanalize the occlusions may also suggest organized thrombus.

Consideration should be made for additional embolic events causing a bihemispheric syndrome or brainstem syndrome in the event that other causes for decompensation are not identified. Acute bilateral MCA occlusion and bilateral carotid artery occlusions are extremely rare.¹⁻³

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Figure 2. Initial injections during conventional angiography demonstrating right MCA (A) and left MCA (B) occlusions.

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