Mystery Case: An unexpected complication of IV thrombolysis for acute ischemic stroke

A 46-year-old man with psoriasis and morbid obesity developed acute aphasia and right hemiplegia. As a result of his weakness, he had fallen and struck his right eye on a desk. His presenting examination demonstrated right periorbital ecchymosis without accompanying ptosis, expressive aphasia, left gaze deviation with corresponding hemianopsia, and dense right hemiplegia, summat- ing an NIH Stroke Scale score of 13.

Questions for consideration:
1. What is the finding(s) on these noncontrast CT images?
2. Should this patient be treated with IV tissue plasminogen activator (tPA)?

The patient was noted to have a hyperdense abnormality within the proximal left middle cerebral artery on initial noncontrast imaging concerning for acute thrombosis (figure, A). He received IV tPA within 2 hours from symptom onset, and noticed significant neurologic improvement within 20 minutes of initiation of therapy.

Approximately 45 minutes after initiation of IV recombinant tPA, the patient developed increasing monocular blindness and complete closure of the right eye from rapidly progressive periorbital edema and ecchymosis. Re-examination of cranial imaging at presentation and following IV thrombolysis confirmed an enlarging retro-orbital hematoma (figure, B and C). An
emergent lateral canthotomy was performed to decompress the optic nerve and within 3 days of orbital decompression and ischemic stroke treatment, he had near complete visual and neurologic recovery. Follow-up cranial and orbital imaging performed 24 hours after canthotomy demonstrated resolution of the retro-orbital hematoma (figure, D).

The small retro-orbital hematoma present on the initial imaging had been overlooked during the screening and decision-making process to administer thrombolytic therapy. Although the patient recovered without significant cerebral or visual impairment as a result of immediate intervention, it is unclear whether IV recombinant tPA should be withheld in this context. IV thrombolysis for ischemic stroke has been performed after vitrectomy without complication,1 but the presence of intraocular hemorrhage has led to withholding treatment in other cases.2

IV tPA has consistently been shown to be safe and efficacious following ischemic stroke.3 However, thrombolytic treatment should proceed with caution even in the setting of minor trauma, and this case highlights the importance of careful inspection and vigilance for unanticipated complications.

AUTHOR CONTRIBUTIONS
Dr. Sheth and Dr. Yee were involved in the care of the patient, study design, data analysis, and preparation of the manuscript.

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REFERENCES
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