Mystery Case: Terson syndrome on CT head

A 36-year-old woman presented with acute severe headache and generalized tonic-clonic seizures. CT head scan revealed a tentorial acute subdural hemorrhage (ASDH) and posterior globe hyperdensities suggestive of intraocular blood with a right posterior communicating artery aneurysm on cerebral angiography (figure 1). Ophthalmologic assessment confirmed Terson syndrome (figure 2).

Terson’s original definition of intravitreal hemorrhage (IVH) complicating subarachnoid hemorrhage has broadened to include ASDH with retinal and preretinal hemorrhages as well as IVH. Plain CT head can demonstrate Terson syndrome, which is easily missed and warrants ophthalmologic input. Significant persisting visual impairment may require vitrectomy with or without laser membranotomy.

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No funding was received for this study.

DISCLOSURE
The authors report no disclosures relevant to the manuscript. Go to Neurology.org for full disclosures.

REFERENCES

MYSTERY CASE RESPONSES
The Mystery Case series was initiated by the Neurology® Resident & Fellow Section to develop the clinical reasoning skills of trainees. Residency programs, medical student preceptors, and individuals were invited to use this Mystery Case as an educational tool. Responses were solicited through a group e-mail sent to the American Academy of Neurology Consortium of Neurology Residents and Fellows and through social media.

Of 18 respondents, 55% correctly identified acute tentorial subdural hemorrhage on noncontrast CT head demonstrates acute tentorial subdural hemorrhage (A, arrowheads) and crescentic hyperdensities consistent with intraocular blood (B, arrows). Cerebral angiogram before and after coil embolization of right posterior communicating artery aneurysm is shown (C, arrow).
CT head scan, which also revealed bilateral posterior globe hyperdensities suggestive of intraocular blood. Thirty-eight percent said that there was an aneurysm seen on cerebral angiography, but only one respondent correctly identified it as a right posterior communicating artery aneurysm preembolization and postembolization. Wide-field laser ophthalmoscopy (Optomap; Optos, Dunfermline, UK) in figure 2 shows a large premacular hemorrhage OD (A, black asterisk). A smaller preretinal hemorrhage with a circular outline is present OS (B, white asterisk); the inner limiting membrane (ILM) is visible as a glistening superior border (B, between the 2 white arrows). In vivo optical coherence tomography scans or pathology specimens obtained following laser membranotomy can definitively identify whether the preretinal hemorrhages are sub-ILM or subhyaloid. Intravitreal extension accounts for the indistinct lower section of both fundus images (worse OD). Flame-shaped or arced, confluent retinal hemorrhages arising from the retinal nerve fiber layer are more superficial (B, example of this next to white arrowhead), whereas a dot and blot pattern indicates hemorrhage within deeper retinal layers (A, black arrowhead).

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This case illustrates the importance of considering intraocular hemorrhage in patients with acute rises in intracranial pressure and that in some cases the diagnosis can be aided by signs present on head CT.

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