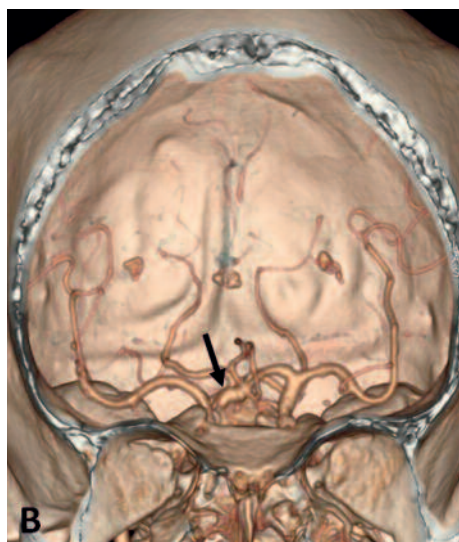
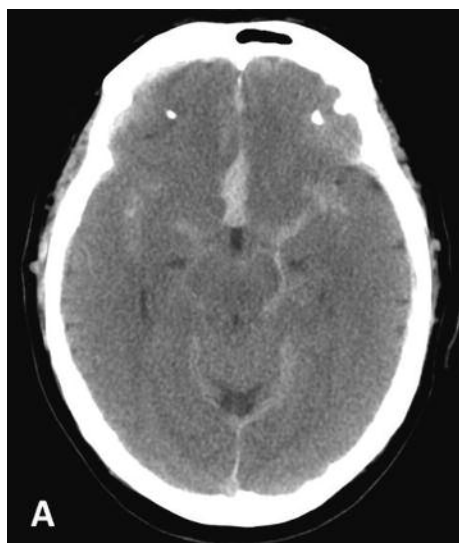


IMAGES IN CLINICAL RADIOLOGY



Terson's syndrome

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A 55-year-old-woman suddenly woke up with the worst headache she ever experienced. The clinical picture deteriorated fast and by the time she was admitted to the emergency department, she developed anisocoria and was in a coma (Glasgow Coma Scale, 3/15). A non enhanced computed tomography of the brain was performed and revealed a subarachnoid hemorrhage (Fig. A) caused by a ruptured aneurysm of the anterior communicating artery (Fig. B, black arrow). The aneurysm was successfully treated by endovascular occlusion with coils.

On the axial non enhanced CT-scan on admission a radiopaque linear density was noted in the left eye located in close proximity to the retina (Fig. C, white arrow). Ultrasound investigation of the left eye confirmed a vitreal hemorrhage but no retinal detachment. Clinically the patient had loss of visual acuity of the left eye. The diagnosis of Terson's syndrome was made.

Comment

Terson's syndrome is a vitreal or retinal hemorrhage as result of an acute increased intracranial pressure occurring consequently to subarachnoid hemorrhage. It can be seen in 10% to 20% of patients with spontaneous or traumatic subarachnoid hemorrhage and generally begins as bleeding between the internal limiting membrane and the retina. The pathophysiology of this syndrome is still debated. Disturbed circulation in the retinal vessels consequent to increased intracranial pressure may lead to retinal venous hypertension and eventually to hemorrhage. Early diagnosis can lead to a more accurate ophthalmologic follow up as this pathology can result in blindness. In the acute setting this syndrome can easily be overlooked as other pathology stands more on the foreground. The presence of a vitreous hemorrhage can also be seen as an adverse prognostic factor in terms of clinical outcome which can be related to rebleeding or the (re)appearance of coma. Although an ophthalmologic examination is the golden standard to diagnose this syndrome, careful CT evaluation by the radiologist can sometimes identify the ocular abnormalities in an early stage.

Imaging findings on computed tomography can be very subtle and include nodularity, thickening or crescent-shaped increased density of the retinal surface relative to the vitreous body often along the temporal retinal side and adjacent to the optic nerve as described. These findings can be identified within the first few days after intracranial hemorrhage. Pitfalls in diagnosis can be volume averaging at the rectus muscle insertions or tangential sectioning of superior and inferior aspects of the eye. A crescentic increased density can be mimicked in this way. Differential diagnosis includes melanoma, metastasis and hemangioma but in the clinical setting of a subarachnoid hemorrhage a Terson's syndrome is the most likely diagnosis. Patients with a subarachnoid hemorrhage are prone to a vitreal or retinal hemorrhage. Radiologists should be aware of the potential diagnosis of Terson's syndrome since early diagnosis may prevent long-term vision loss.

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