

SHORT COMMUNICATION

Case report

Unilateral Purtscher-like retinopathy after weight-lifting

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PURPOSE. *To report a case of Purtscher-like retinopathy after weightlifting.*

METHODS. *A 17-year-old man presented with a sudden visual loss in his left eye after weightlifting two weeks ago. Fundus examination of the left eye showed cotton-wool spots and scattered retinal hemorrhages in the posterior pole. Fluorescein angiography and indocyanine green angiography with a scanning laser ophthalmoscope were performed.*

RESULTS. *Angiography showed hypofluorescent areas adjacent to the optic disc and in the posterior pole and partial filling insufficiency in the inferior and inferotemporal branch retinal veins. Complete venous filling was noted in late phases of angiography.*

CONCLUSIONS. *The pathogenesis of weightlifting suggests the Purtscher-like changes as a result of Valsalva maneuver in our case. To our knowledge, this is the first reported case of Purtscher-like retinopathy associated with weightlifting. (Eur J Ophthalmol 2003; 13: 395-7)*

KEY WORDS. *Purtscher retinopathy, Weightlifting, Valsalva maneuver*

Accepted: October 25, 2002

Purtscher retinopathy is characterized by sudden, usually bilateral visual loss in severely traumatized patients and involves multiple areas of superficial retinal whitening and retinal hemorrhages primarily in the posterior pole (1). Otmar Purtscher first described the condition in 1910, as a distinctive retinal syndrome of ischemic retinal whitening in a peripapillary pattern after head trauma.

Purtscher retinopathy is described after compressive injuries to the trunk, long-bone fractures, and rapid deceleration injuries (1). Purtscher-like retinopathy is observed in atraumatic disorders such as pancreatitis, collagen vascular disease, chronic renal failure, and thrombotic thrombocytopenia purpura (2). Visual outcome in these diseases is variable, and there is no proven treatment.

We report a patient with blurred vision in the left eye immediately after weight-lifting.

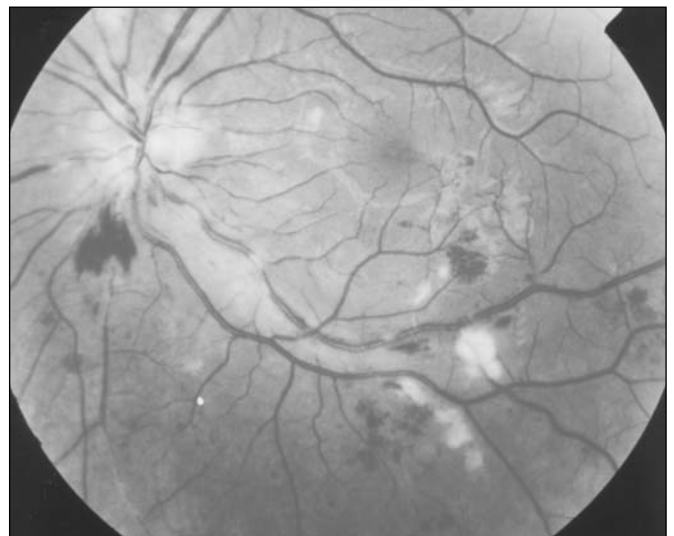


Fig. 1 - Left eye. Color fundus picture shows cotton-wool spots and scattered retinal hemorrhages adjacent to the optic disc and in the posterior pole.

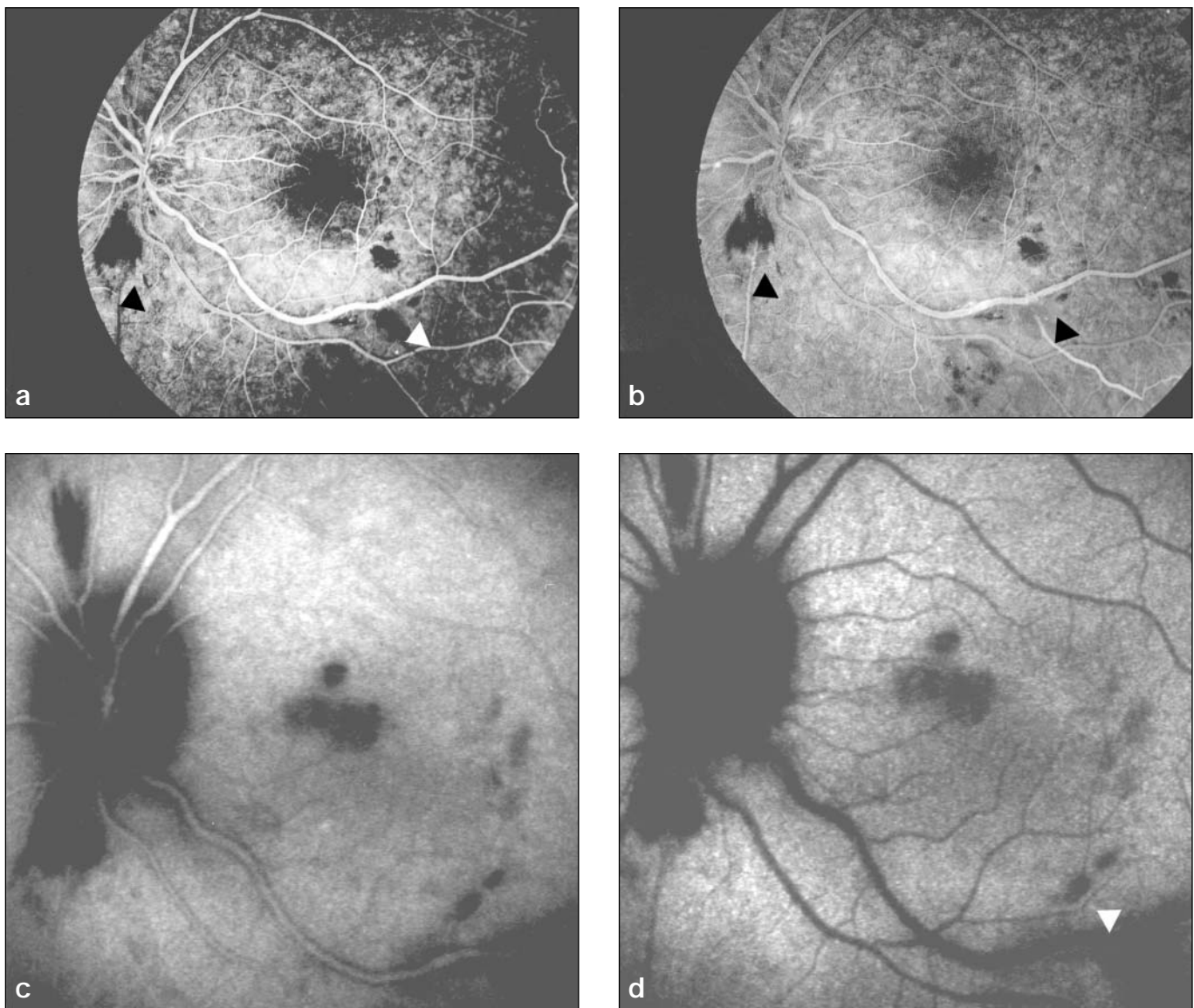


Fig. 2 - a) Mid phase fluorescein angiogram shows scattered hypofluorescent areas adjacent to the optic disc and in the posterior pole and partial filling insufficiency in the inferior and inferotemporal branch retinal veins (indicated by the arrows). **b)** Late phase fluorescein angiogram indicates complete venous filling (indicated by the arrows). **c)** Mid-phase indocyanine green angiogram shows scattered hypocyanescent areas adjacent to the optic disc and in the posterior pole. **d)** Late phase indocyanine green angiogram shows dye leakage from the inferotemporal retinal vein (indicated by the arrow).

Case reports

An alert, healthy 17-year-old male was admitted with sudden visual loss in his left eye that had occurred after weight-lifting 2 weeks earlier. Best-corrected visual acuity was 20/20 in the right eye and 20/200 in the left. Ocular motility was full and no pupillary defects were observed. The anterior segment examination was unremarkable bilaterally. The right fundus was

normal. Ophthalmoscopy of the left fundus revealed cotton-wool spots and superficial retinal hemorrhages in the macular and peripapillary areas (Fig. 1).

Fluorescein angiography with the Heidelberg scanning laser ophthalmoscope demonstrated scattered hypofluorescent areas in the posterior pole, partial occlusion (partial filling insufficiency) in the inferior and inferotemporal branch retinal veins in the mid-phase and complete filling in the late phase (Figs. 2

a and b). Indocyanine green angiography with the scanning laser ophthalmoscope showed hypocyanescent areas, as in fluorescein angiography (Figs. 2c and d).

Three months after the first visit, his visual acuity had recovered completely, and the fundus was free of cotton-wool spots and hemorrhages.

DISCUSSION

The pathogenesis of Purtscher and Purtscher-like retinopathy is not clear. Multiple theories have been proposed (3), involving reflux hydrostatic injury, vasospasm, and microembolism of fat, air, fibrin, and amniotic fluid.

In Behrens-Baumann and Scheurer's (4) study, 11 patients with Purtscher retinopathy presented with different manifestations. The main features were yellow-white "Purtscher-flecken," which had polygonal edges and lay in the inner nuclear layer; typical white cotton-wool spots in the nerve-fiber layer; and spot-like or flame-shaped hemorrhages in the different retinal layers. These ocular findings may be either unilateral or bilateral and asymmetric.

Unilateral Purtscher retinopathy has been described in the settings of facial trauma, periorbital corticosteroid injection, retrobulbar anesthesia, involuntary Valsalva maneuver, and granulocyte aggregates in retinal arterioles, as in hemolytic uremic syndrome (HUS). Siegler et al (5) first reported retinal involvement in HUS. Lauer et al (2) also reported a case of Purtscher-like retinopathy in a patient with HUS and

Blodi et al (6) described a case of unilateral Purtscher-like retinopathy after uncomplicated retrobulbar anesthesia. Burton (7) reported four patients with unilateral Purtscher retinopathy similar to our case and fluorescein angiography indicated impaired arteriolar flow, capillary nonperfusion, venous staining, retinal edema, and optic disc edema.

To our knowledge, Purtscher-like retinopathy associated with weight-lifting has never been reported. The Purtscher-like changes very likely resulted from an involuntary Valsalva maneuver. Thus, whenever a healthy young patient who does weight-lifting complains of sudden visual loss, Purtscher-like retinopathy should be kept in mind in the differential diagnosis.

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