Bilateral retinal detachment in a case of nonaccidental trauma

Nonaccidental trauma is also known as abusive head trauma, inflicted head injury, or inflicted childhood neurotrauma. Characteristic clinical features include retinal hemorrhages, subdural hematoma, and/or occult fractures. Nonaccidental trauma, which bears no implication for the mechanism of injury, is preferred to the term ''shaken baby syndrome.''

Retinal findings such as hemorrhages, chorioretinal atrophy, perimacular folds, traumatic retinoschisis, macular holes, and epiretinal membranes have been described in cases of nonaccidental trauma.[1]

We report a rare case of bilateral rhegmatogenous retinal detachment and retinal dialysis in a patient with a history of nonaccidental trauma treated with scleral buckling surgery.

A 5-month-old male was brought to the emergency department unresponsive and with hypotonia. Radiographs of the chest revealed no fractures. Magnetic resonance imaging of the head showed an acute left cerebral hemisphere subdural hematoma and a chronic subdural hematoma of the posterior fossa. Ophthalmic examination revealed multifocal diffuse intraretinal hemorrhages, mild inferior vitreous hemorrhage, and bilateral retinal detachment in temporal quadrants (more than 90° in extent). The funduscopy also showed more than 3 clock hours of bilateral retinal dialysis in superior and inferior temporal quadrants (Fig. 1). A diagnosis of nonaccidental trauma was made based on medical history, clinical examination, and complementary studies.

The entire posterior circumference of the dialyses were treated with transscleral cryopexy and buckled with a silicone sponge cylinder placed on temporal quadrants. After 1-year follow-up, the primary reattachment remained stable and visual acuity using Teller acuity test was 20/260 in both eyes.

In pediatric eyes; 40% of rhegmatogenous retinal detachments are secondary to ocular trauma, whereas retinal dialyses are present in up to 85% of eyes with traumatic detachment.[2] Bilateral retinal detachment and dialysis have been rarely described as associated to nonaccidental trauma. Although this is accurate based on literature search, one might suspect that such cases, because of the profound injury required to induce dialysis, have much higher mortality and are therefore not likely to be reported or even identified.

In general, primary pars plana vitrectomy has gained widespread popularity in the treatment of rhegmatogenous retinal detachment during the past few years.

Buckling surgeries are preferred to vitreoretinal surgery in children with retinal detachment and dialysis. Vitrectomy is more complex and has a greater complication rate. Moreover, the infant cortical vitreous is usually firmly adherent to the retina and difficult to separate from it mechanically and safely. In very young children, compliance with prone positioning is also difficult to achieve. The rate of reattachment in scleral buckling surgery may be as high as 100%. The most important advantage is that it preserves the lens and the faculty of accommodation.[3,4]

In conclusion, we describe a case of nonaccidental trauma that had bilateral retinal detachment and dialysis. Although retinal hemorrhage is the most frequent ocular sign of nonaccidental trauma, other less common but more serious manifestations such as retinal detachment and dialysis may be present. Scleral buckling

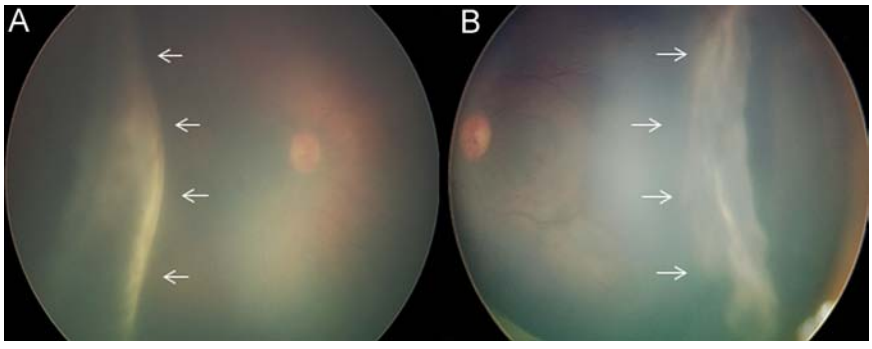

Fig. 1—Retinography of the right and left eyes. (A and B) Bilateral retinal detachment with dialysis (*white arrows*) in temporal quadrants.

surgery may achieve high rates of reattachment in these cases.

Noel Padrón Pérez, [*] **Jesús Díaz-Cascajosa,** [†] **Joan Prat-Bartomeu,** [†] **Nieves Martín-Begué,** [†] **Jaume Català-Mora** [†]

[*]Hospital Universitari de Bellvitge, Feixa Llarga s/n. L'Hospitalet de Llobregat;[†]Hospital Sant Joan de Déu, Barcelona, Spain.

Correspondence to:
Noel Padrón Pérez, MD: noelpdrn@gmail.com

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Occlusive idiopathic juxtafoveolar retinal telangiectasis type 4

Idiopathic juxtafoveolar retinal telangiectasis (IJRT) is a rare retinal vasculopathy of adulthood. It is a unilateral or bilateral disease associated with dilated retinal capillaries located only in the macular area that may cause central loss of visual acuity. They were described by Gass[1] in 1982, who then divided them into 4 groups. The third and the fourth are occlusive retinal telangiectasis. This article presents a type 4 IJRT.

In April 2011, a 58-year-old male presented to our clinic department for a bilateral progressive painless loss of vision. He had no previous ocular or systemic personal or familial history. Slit-lamp examination was normal. The best corrected visual acuity was 20/40 OD and 20/30 OS. Intraocular pressure was 15 mm Hg OD and 16 mm Hg OS. Fundus examination revealed a bilateral perifoveal capillary sheathing with thin macular pucker and sectorial bilateral papillary pallor (Fig. 1A).

Fluorescein angiography (FA) highlighted a bilateral severe macular ischemia related to a perifoveal occlusive capillaropathy associated with aneurysmal dilatation of the perifoveal capillary mesh (Fig. 1B). Moreover, a bilateral hypoperfusion of the optic disc located in the temporal area was visible on this examination, with diffuse leakage at the late arteriovenous phase in the posterior pole area (Fig. 1C). The peripheral retina was healthy with no vascular occlusion or leakage.

Macular and peripapillary optical coherence tomography analysis showed a bilateral macular atrophy (Fig. 2), no cystic changes despite leakage in FA, and a sectorial loss of retinal nerve fibers. There was no history of radiotherapy, sickle cell disease, or other systemic diseases. Biological assays (inflammation, coagulation proteins, immunologic, and hematologic), cardiovascular, and neurologic imaging and examination were normal except for relatively hyperreactive tendon reflexes.

In revised Gass and Blodi[2] classification, only 3 types are described. Type 1 (most frequent in Asia)[3] is unilateral juxtafoveolar telangiectasis with exudative and edematous lesions, type 2 (most frequent in Western countries)[3] is a bilateral and nonexudative disease with minimal leakage in the late phase of FA, and type 3 is a bilateral disease with capillary occlusion and microaneurysms at the edge of the capillaries.[4]

Type 2 is most frequent in white individuals and represents 5 to 23 cases per 100,000 individuals.[5] Type 3, which is rarest, represents according to the series 5% to 7.4% of all IJRT cases[1,3]; only 7 of the 140 patients in Gass and Oyakawa's[1] classification, none of the 36 patients in the Yannuzzi classification,[6] and 2 of the 27 patients of Maruko et al.'s series[3] were classified as type 3.

Macular telangiectasis type 4 is an even rarer condition; only a few cases reported in the literature correspond to a bilateral perifoveal capillaropathy with angiography leakage without any clinical exudation, associated with optic nerve atrophy and hyperreactive tendon reflexes.[1] To our knowledge, this is the second reported case of simultaneous presentation of type 3 IJRT and papillary pallor constituting type 4 IJRT.[1] This report highlights the importance of FA and optical coherence tomography in the correct diagnosis of such cases.

It is also important to assess the patient for cerebral vasculopathy with type 3 IJRT (especially type 3B), both clinically and with magnetic resonance imaging of the brain. In this case, imaging was normal, whereas clinical examination showed isolated hyperactive tendon reflexes. This case did demonstrate the association between IJRT and occlusive vascular disease of the optic nerve.