Evacuation of subretinal hemorrhage *

A.N. DellaPorta
Department of Ophthalmology, Stanford University Medical Center, Room-157, Stanford, California 94304, USA

Received 4 March 1993; accepted 18 October 1993

Key words: subretinal hemorrhage, transbulbar endodiathermy

Abstract

Submacular hemorrhage may cause secondary retinal degeneration. Evacuation of a traumatic submacular hemorrhage in a young man (Case II) was carried out successfully using transbulbar endodiathermy. Final visual acuity was 20/20. A 74-year-old man (Case IV) suffered a big subretinal hemorrhage in his remaining good eye. That same day strong Argon laser coagulations were applied to the retina over the dark, brown hemorrhage with perforation of the retina and visible escape of blood into the vitreous. Four weeks after the treatment the subretinal hemorrhage showed patchy absorption and the visual acuity was 20/60. The visual acuity remained 20/60 and J3, 27 months after the treatment, and useful vision continued for another 15 months.

Clinical experience has shown that subretinal hemorrhage may have a deleterious effect on visual acuity. This depends on the amount of blood, its cause and the age of the patient [2]. Any experienced surgeon dreads subretinal hemorrhage migrating to the macula during retinal surgery. The idea of evacuating subretinal hemorrhage before the onset of secondary retinal degeneration was initiated by an observation of R. Wolter et al. in 1965 [18]. They reported a case of hemorrhagic disciform macular degeneration in a sixty year old man. The eye was enucleated because of suspicion of malignant melanoma nine weeks after the onset of the visual disturbance, when the hemorrhage must have occurred. The patient’s visual acuity deteriorated during six weeks of observation from 20/80 to 20/200. Histologic examination showed a large hemorrhagic exudate in the posterior pole of the eye elevating the retina. The latter, nine weeks after the hemorrhage occurred, was histologically intact. I have observed similar cases clinically. If refracted carefully, the visual acuity in these eyes is surprisingly good at the onset of a big hemorrhage, but deteriorates gradually after several months until it finally becomes very poor. It was rational to attempt to evacuate the subretinal hemorrhage in these eyes so as to avoid secondary retinal degeneration. The problem was how to achieve this. The solution became evident after the following observation.

Case I

A 20 year old woman suffered a subretinal hemorrhage above the disc after the eye was hit by a tennis ball in January 1977. I feared that the blood would migrate to the macula and destroy the central vision. In spite of bedrest and restriction of physical activity, two weeks after the injury the blood spilled spontaneously into the vitreous cavity (Fig. 1). The visual acuity deteriorated from 20/40, J3 to 20/80 with poor fundus visualization with the indirect binocular ophthalmoscope. The hemorrhage absorbed very gradually so that only eight months later the visual acuity was 20/25, J1 with correction. A remnant of the hemorrhage, a small connective tissue tuft protruding into the vitreous was seen at the upper edge of the disc (Fig. 2). This was unchanged in November 1988, twelve years after the injury. VA: 20/20. This case indicated that it was desirable to evacuate subretinal hemorrhages surgically into the vitreous.

* Supported in part by an unrestricted grant from Research to Prevent Blindness Inc.
Fig. 1. (case I) Blood escaped into the vitreous from under the retina 2 weeks after a tennis ball injury. V A 20/80.

Fig. 2. (case I) The hemorrhage absorbed within the next 8 months. A connective tissue tuft remained on the disc at the 12 o'clock position and was still visible 12 years after the injury. V A 20/20.

Fig. 3. (case II) Extensive hemorrhage covering the posterior pole of the eye after blunt injury in a 29 year old man. V A 3/200. See Fig. 5.

Fig. 4A. (case II) Transbulbar endodiathermy needle impaled into the posterior pole of the eye below the macula. The blank 2.5 mm long, active point of the needle – visible below the black lacquer – was perforating retina, choroid and sclera. Photograph taken during surgery immediately after diathermy coagulation. See also Fig. 4B.

Case II

A 29 year old healthy man sustained a blunt injury to his left lower lid on March 18, 1977 from a flying pencil-shaped metal pin that was one inch long. The resulting hyphema absorbed after hospitalization and binocular bandaging. The patient was referred to me on April 4, 1977, sixteen days later. His right eye was normal. His left eye had a clear cornea and a deep anterior chamber equal to that of the right eye; the pupil was nonreactive, 6 mm in diameter and irregular. The angle was wide open without recess; there were two small iridodialyses superonasally. The lens was clear, and the vitreous and optic disc were normal. A large, dense, subretinal hemorrhage occupied the posterior pole including the macula and the optic