CASE REPORT

Traumatic Retinal Detachment

T.D. Williams*

History

At age 19, while playing tennis, the patient was struck in the right temple by a tennis ball. She contacted several eye care practitioners during the month following the accident, but no retinal problems were detected at any of these visits. Her first visit was sought primarily because of the recent eye injury: she had no symptoms at that time. A week later, the patient noted some flashing lights and arranged another consultation. No significant retinal problems were found at that time.

Two months later, she became aware of vision losses in the right eye. A superior temporal retinal detachment was detected at that time, and was successfully treated. A scleral buckle was put in place as part of the retinal detachment surgery. This is seen in Fig. 1.

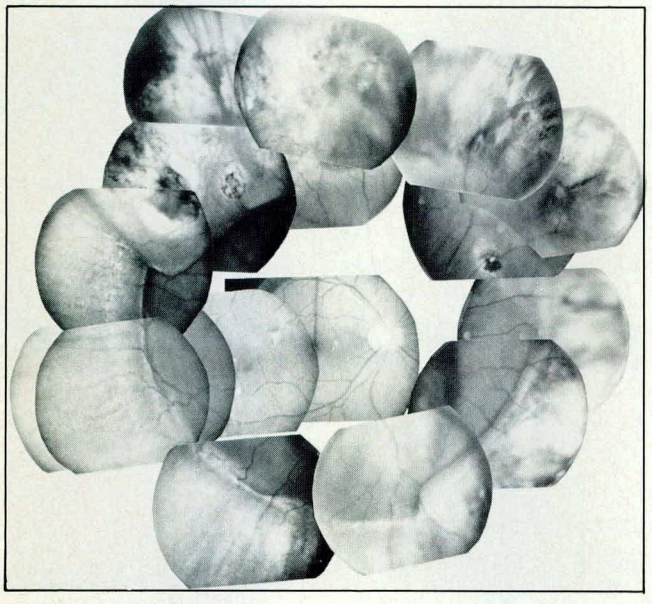

Fig. 1

Her visual fields are shown in Fig. 2. She was 5 D myopic in the right eye following surgery. Both eyes had been essentially emmetropic prior to the surgery.

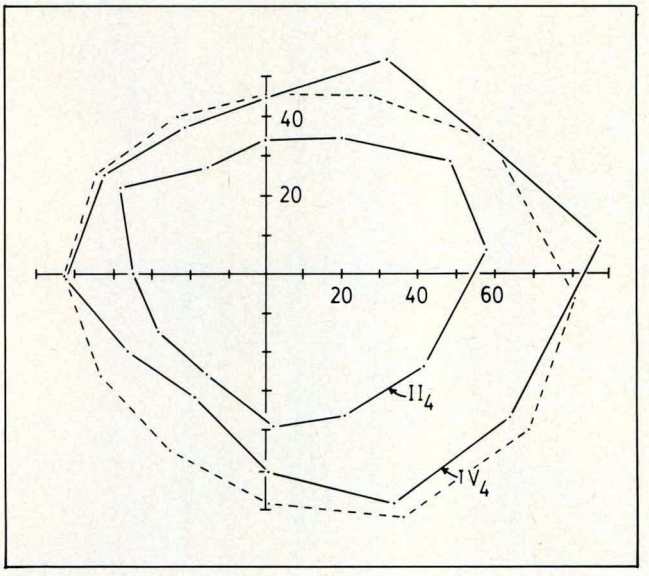

Fig. 2

Comments

In the scleral buckling procedure, a silicone rubber band is permanently placed around the eyeball (close to the equator), converting its roughly spherical shape to an hourglass shape. The indentation of the retina due to the rubber band is readily seen in Fig. 1. Scleral buckling usually results in an increase in axial length, which explains the myopia found in this case. One of the major aims of scleral buckling is to release vitreous tension on the retina; otherwise, this tension could lead to further detachments. In this case, the surgeon elected to produce a higher buckle by placing two pieces of silicone rubber underneath the band: one of these is seen starting at 10:00 and the other is seen ending at 5:00 along the buckle.

The scarring seen around the periphery indicates areas where the surgeon used either heat (diathermy) or cold (cryopexy) to induce an inflammation which caused the detached retina to adhere to the outer layers of the eye. Cryopexy was used in this case.

While the shapes of the patient's visual fields are reasonably normal, the fields are considerably constricted when compared to normal fields for her age group. The broken lines in Fig. 2 show a normal

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I-4 isopter for a 25 year old age group. The area of the patient's II-4 isopter (which should be larger than a normal I-4 isopter) is only 47% of the area of the normal I-4 isopter shown in Fig. 2. The cause for this field reduction is not clear, although it could be related to the severe changes in receptor direction caused by the scleral buckle.

Regarding the two-month delay in the detection of the patient's retinal problem, it should in fairness be pointed out that retinal detachments due to blunt injury frequently follow an insidious course[1]. The blow causes a peripheral hole which allows a slow entry of fluid into the subretinal space. A large, billowing retinal detachment is uncommon in such cases. In fact, such retinal holes may cause visual disturbances more suggestive of central serous retinopathy than retinal detachment. Thus many retinal detachments due to blunt injury are not detected until the macula becomes involved. Field testing could certainly give a much earlier warning of the need for retinal detachment surgery in such cases.

References:

1. Cox, M.S., Schepens, C.L., and Freeman, H.M., Retinal detachment due to ocular contusion, *Arch Ophthalmol* 1966; 76:678-685.

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of Canada. This is because there is a shortage of Canadian optometrists with post O.D. training; a number of those with such qualifications prefer the rewards of practice to those of academia. The number of University of Waterloo School of Optometry graduates entering graduate or residency programmes remains small. A new graduate can command much higher remuneration than a new assistant professor with four or five years more training.

It is our opinion that most manpower studies tend to generate more optimistic pictures than actually exist. Trends that have already occurred in the United States and the United Kingdom are beginning here, with O.D.'s working in administrative or clinical positions in community clinics, hospitals or as full time consultants/researchers in industry including those producing contact lenses and pharmaceuticals.

The aggregate optometric student body in Canada is more than 50% female. The long term effects, with regard to manpower needs, of an optometric work force which is increasingly female has not been addressed satisfactorily. A number of our students are considering residency programmes in the United States, others write the American National Board Examinations. Since only a few Canadian optometrists find their way to other countries we feel that this number is not significant at this time. We note that there are only one or two full time public service optometrists (compared with numerous physicians and dentists) and that there are no military optometrists (compared with over 600 in the United States). Should there be changes in policies, which would encourage optometrists into such positions, the overall effect on the manpower needs might well be considerable.

Much energy has been expended over many years in attempts to develop a second optometry school in English Canada. We would welcome and support such a development. Although initially this would strain the limited optometric educator resources of Canada, the long term effects of reducing the shortage of practitioners and increasing the competition for well qualified educators would enhance the attractions of a university career. Based on our experiences at the School we wish to offer the following suggestions with regard to any new school in Canada. It must be located in a prestigious university which has full academic resources and graduate facilities. Preferably it should also be located at an institution with one or more other *primary* health care programmes. The latter eliminates the need to educate the university's administration as to the special needs of a clinical programme, the relevance of clinical duties and the need for differential salary scales. The university should be located within a large enough patient drawing area for the clinics to operate at an optimum level. Factors which have aided in recruiting faculty at Waterloo include the impression that Southern Ontario offers a good quality of life, the close proximity of Toronto with its many attractions including easy air travel to anywhere in the world, and the international reputation enjoyed by the University of Waterloo as a whole. We often hear it stated that the manpower needs of optometry schools can be relieved by having certain courses taught by professors from other departments. Even within a university well experienced with optometric education frequently such courses are unsatisfactory.

Continued support of COETF is vital since this fund provides a prime source of direct and indirect funding for Canadian optometrists seeking post professional education. The funds generated by WATFUND are used principally to modify, develop and re-equip our clinical facilities. In addition to support received from the optometric profession we are also indebted to funding received from Federal and Provincial government agencies, other agencies, the University of Waterloo, the corporate sector and private individuals. The profession continues to do an excellent job in recruiting outstanding young men and women for the School. We would urge you to pay particular attention to those who show potential for a career in optometric education.