RECURRENT CHOROIDAL DETACHMENT*

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CHOROIDAL detachment following intra-ocular operation is a complication often encountered, but associated with other conditions or alone it is rare. It has been reported after orbital cellulitis, intra-ocular foreign body, tenonitis, scleritis, certain systemic diseases, and has also apparently occurred spontaneously.

This report concerns a man who, at the age of 63, developed a choroidal detachment of the right eye after an operation for maxillary sinusitis on the same side; 10 months later the choroidal detachment had disappeared, and the appearance of the eye remained normal for nearly 5 years, when the detachment recurred, only to disappear again after 8 months.

Case Report

A man aged 63 developed a severe cold in the head in December, 1947; its duration was prolonged and it was accompanied by profuse nasal discharge and nasal obstruction. There was no pain.

On February 6, 1948, a headache developed with pain in the right eye, and there was pyrexia for 3 days.

On February 10, the right antrum was drained under local anaesthesia, and the pus obtained gave a pure culture of haemolytic streptococci. On February 17, an x-ray revealed pan-sinusitis on the right side with a fluid level in the right antrum and much swelling of the right nasal mucosa.

On February 27, the right antrum was washed out again and muco-pus found. All the nasal mucosae were unhealthy, and there was a half-inch polypus in the right middle meatus. On February 28, a further x-ray showed that there was still a fluid level in the right antrum with impairment of the right frontal sinus. The posterior ethmoids and sphenoids were clear.

On March 2, right intranasal antrostomy was performed with removal of the nasal polypus. The middle turbinate was dislocated medially to improve frontal drainage, and part of the right inferior turbinate was removed. The lining of the antrum was found to be thickened but not polypoid. No tumour was palpated with the curette, and left antral puncture was negative.

Convalescence was normal except for a bad infection of the hair follicles of both nasal vestibules. It was noted that all the antral punctures were accompanied by severe pain in the right eye.

After another severe cold in February, 1949, an x-ray showed thickening of the right antral mucosa, and slight thickening of the left. The anterior and middle ethmoids showed infection. Thereafter a right antral puncture was done, but only a few shreds of mucus came away. There was no further history of sinusitis.

On February 23, 1948, the patient had consulted one of us, and had stated that 2 days previously, that was about 14 days after the first symptoms of sinusitis, he had noticed

*Received for publication March 29, 1955.

impairment of the right field of vision. On examination the following condition was found:

Right Eye.—There was slight tenderness of the globe to touch above. Central vision with -0.5 D sph. was 6/6. The anterior chamber was shallower than in the left eye, and the pupil was a little larger, but its reactions were normal. There was a large globular detachment of the choroid on each side, smooth and rounded, with the retinal vessels running evenly over the surface. On each side the detachments extended nearly to the disc and posterior pole, leaving a deep cleft between them, which included the macula. The field of vision charted with a $\frac{1}{2}^\circ$ white object showed extensive loss of field on the temporal side and a considerably smaller loss on the nasal side (Fig. 1). The tension was 16 mm. Hg (Schiötz).

FIG. 1.—Visual fields on February 23, 1948.

Left Eye.—This eye was normal in appearance. Vision with ± 0.75 D sph. was 6/6.

Diagnosis.—Detachment of the choroid in the right eye.

The patient was also examined by Mr. H. M. Traquair who corroborated the findings and confirmed the diagnosis as follows:

These findings point to detachment of the choroid. This is related to antral disease, but I would not like to say how. As there are no vitreous opacities, I do not think it is a septic infection — rather an oedema beyond any actual sepsis.

Treatment.—Except for the instillation of atropine drops no treatment was instituted.

Follow-up.—The condition of the eye remained unchanged for the following 7 months. Then, at examination on September 25, the impression was recorded that the chink between the detachments was becoming wider. The cleft continued to widen until, on December 19, there was no visible sign of the detachment on either side, and the field of vision had almost regained its normal limits.

Central vision during the whole period of the detachment had remained at 6/6 with suitable correction, which varied from time to time. In April, 1948, the eye was em-

metropic. In December, 1948, the refraction was -0.75 D sph., -0.5 D cyl., axis 105° . The patient, a surgeon, had been able to carry on his work.

Recurrence.—No further ocular symptoms occurred until September, 1953, when the patient again noticed a field defect in the right eye. About 6 weeks previously he had sustained a small abrasion of the right cornea, and 4 weeks later had noticed flashes of light before the right eye.

On September 11, examination of the right eye revealed two areas of choroidal detachment, one in the superior temporal quadrant and the other in the inferior nasal quadrant. These remained localized and on October 19, were found to have decreased in size, so that both were almost flat. However, 4 weeks later, the symptoms recurred and both detachments regained their former size. During this time the anterior chamber of the eye was shallower and the tension lower than in the left eye. Central visual acuity remained good, and examination of the nasal sinuses showed them to be normal.

Conservative treatment only was given.

Early in May, 1954, the detachments were noticed to be receding; some 5 weeks later they were completely flat, and have remained so since that time.

Examination of the right fundus now shows a water mark indicating the previous extent of the detachments, and there is some mottling over these areas. There is also some continued loss of visual field (Fig. 2), but as this does not come within 45° of fixation no serious disability has resulted.

FIG. 2.—Visual fields on June 23, 1954.

Discussion

Choroidal detachment was first described by von Graefe (1858) and Liebreich (1859).

Meller (1911) classified the various types of the disorder as follows:

- (1) Post-operative early.
- (2) Post-operative late.
- (3) Spontaneous. (a) originating from the ciliary body, (b) originating from the posterior part of the choroid.

Fuchs (1911) proposed a classification into four types:

- (1) Post-operative due to oedema.
- (2) Post-operative due to haemorrhage.
- (3) Tractive, a terminal condition in uveal disease.
- (4) Inflammatory due to transudation.

As the case which is the subject of the present report appears to belong to Meller's Class 3, we have endeavoured to collect from the literature as many cases as possible of spontaneous choroidal detachment.

Story (1891) found spontaneous choroidal detachment in the right eye of a 27-year-old woman.

Mules (1893) reported a 12-year-old boy in whom one eye was enucleated after a diagnosis of tumour and at the histological examination choroidal detachment only was found.

Wagenmann (1897) reported unilateral choroidal detachment after nodular scleritis in a 43-year-old woman, and (1906) unilateral choroidal detachment associated with tenonitis. Both cases recovered completely.

Ewetzky (1898) reported a case of a man of 42 with renal disease; spontaneous choroidal detachment was found on section after enucleation.

Simon (1905) reported an 18-year-old girl with albuminuria.

Lauber and Adamük (1909) reported a case with albuminuria.

Fleischer (1921) reported the first bilateral case in a man of 35 with cardiac disease.

Verhoeff and Waite (1925) found bilateral choroidal detachment in a man of 49 who suffered from intractable chronic diarrhoea until his death at the age of 66; his blood pressure was reported as systolic 180, diastolic 68.

Krautbauer (1927) described a case of choroidal detachment in an 18-year-old girl which subsided after removal of a wood splinter from beneath the bulbar conjunctiva.

Würdemann and Verhoeff (1927) reported the case of a man of 40 whose eye was enucleated for suspected tumour.

Muirhead (1934) saw choroidal detachment in one eye of a 34-year-old man, which subsided after incision of an abscess below the bulbar conjunctiva.

Hirasawa (1935) saw choroidal detachment in an eye affected by purulent tenonitis, which recovered after incision of the abscess.

Ziporkes (1937) reported choroidal detachment associated with tumour of the lacrimal gland.

Purtscher (1938) described the case of a 67-year-old man affected by serous tenonitis first in the left eye and then in the right. In both eyes choroidal detachment developed, and a small retinal detachment also appeared in the right eye, but soon after the inflammation subsided the detachment in each eye went back with recovery of full vision.

Vouters (1948) reported a man aged 67 with cardiac and renal disease in whom a temporary rise of tension occurred in the affected eye, but a complete cure was effected after a month's conservative treatment.

Vukovich (1949) recorded choroidal detachment after tenonitis, followed by spontaneous recovery in a 75-year-old man.

Gittler (1949) reported a bilateral case in a woman of 52. Histological examina-

tion after enucleation of the first eye for choroidal tumour revealed only choroidal detachment with signs of deep-seated inflammation of the sclera; 2 months later choroidal detachment appeared in the second eye, but after treatment of the general health the detachment disappeared in a few weeks with recovery of vision to 6/12. Vitreous opacities were present, and 4 years later uveitis led to loss of sight. Gittler also states that Harada (1926) reported a series of cases of bilateral choroidal detachment associated with headache, general malaise, and occasional vomiting. After a few weeks the choroid went back in all cases with recovery of good vision.

Dollfus (1950) found choroidal detachment secondary to orbital cellulitis which followed x-ray therapy for epithelioma.

Paufique, Hugonnier, and Barut (1950) reported a case in which the detachment subsided after the removal of an intra-ocular foreign body.

Rohrschneider (1951) reported a bilateral case in a man of 46. The first eye was enucleated after a mis-diagnosis of intra-ocular tumour, which was disproved by histological examination; 3 years later choroidal detachment appeared in the other eye, but it disappeared 9 months later after scleral trephining and diathermy.

Boyd Law (1951) reported two cases, both of which spontaneously regained full vision; the second case subsequently developed retinal detachment with a hole.

Giardini (1952) attributed his case to diffuse episcleritis.

The causation of these recorded cases varies considerably. No cause was found or suggested in the five cases of Mules, Boyd Law, Rohrschneider, Story, and Würdemann and Verhoeff. Renal or cardiac disease was present in the five cases reported by Ewetzky, Simon, Lauber and Adamük, Fleischer, and Vouters. Other organic disease accompanied the cases of Verhoeff and Waite, and of Harada. The largest group consists of seven cases attributed to episcleritis, scleritis, or tenonitis reported by Wagenmann (two cases), Hirasawa, Purtscher, Vukovich, Gittler, and Giardini. The remaining four cases were due to a variety of causes; subconjunctival foreign body, subconjunctival abscess, tumour of the lacrimal gland, and orbital cellulitis, recorded by Krautbauer, Muirhead, Ziporkes, and Dollfus respectively.

In the present case the causation apparently differs from that in any of the cases previously recorded. The antral disease must be looked on as the direct or indirect cause of the choroidal detachment in 1948. The patient stated that antral puncture was always accompanied by severe pain behind the eye. There may have been some unusually direct anatomical relationship between the antrum and the orbit which allowed inflammatory oedema to spread first to the orbit, and thence between the sclera and choroid. It is more difficult to suggest an explanation of the recurrence of the detachment in 1953, when the antral inflammation had subsided.

Summary

A case is reported of spontaneous detachment of the choroid following ipsilateral antral inflammation due to haemolytic streptococcus, followed by

complete recovery after 8 months except for some slight loss of visual field at the extreme periphery; 5 years later the detachment recurred, but again disappeared spontaneously. During the whole period of the detachment central vision was maintained at 6/6.

Our thanks are due to Mr. M. J. Gibson and Mr. G. I. Henderson for the detailed history of the antral infection, to Dr. T. Sprunt for x-ray reports, and to Prof. W. J. Tulloch for bacteriological reports.

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