I.—RETINA


The abnormality, which is illustrated in the coloured plates facing p. 302, was present in both eyes of an apparently perfectly healthy male, aged 28 years, and was not associated with night blindness or defects in the visual fields. Central vision with each eye was 6/6, after correction of a low degree of myopic astigmatism. The pigmentation appeared to be situated behind the retina proper, at the level of the retinal pigment epithelium.

A. C. HUDSON.


Larsson in this paper describes his technique for treating retinal detachment by means of electro-endothermy. A large indifferent electrode is placed on the leg and thigh, a gauze pad soaked in saline is interposed between the skin and the electrode and secured by a gauze bandage. The active electrode is a metal ball, 0.66 mms. in diameter, and the current used 1—1.05 amperes as registered by the ammeter when the electrodes are in contact.

The site of the retinal detachment is exposed by dissecting up a conjunctival flap. The active electrode is applied to the sclera for 5 seconds at points a few millimetres apart. The sclera at the points of contact becomes opaque and sometimes dark. The sclera is then trephined at a point corresponding with the most dependant portion of the retinal detachment.

The patient is confined to bed, with the head placed in such a position that the detached area of retina lies inferiorly, and kept so for 2 weeks with both eyes bandaged. In a successful case re-attachment is evident in 5-8 days.

The apparatus recommended is a Siemen’s Thermoflux K.

H. B. STALLARD.


Larsson surveys the surgical method introduced by Gonin for detachment of the retina. He agrees that closure of the rupture or hole in the retina is of the utmost importance, but believes that
this interruption in the retina is probably secondary. The author does not perform Gonin's operation for the following reasons:—

(i) He cannot unreservedly accept the theoretical basis of the operation.

(ii) It is undeniably exceedingly difficult to locate the rupture, not to say impossible.

(iii) The object of the author's endeavours is to obtain extensive fixation of the retina to underlying tissue, and possibly choroidal atrophy, thus reducing the accumulation of sub-retinal fluid as much as possible.

A table is given of the comparative results of Gonin and other operators.

Larsson employs trans-scleral electro-endothermic current, and performs subsequent trephining of the sclera. He has operated on 30 cases, both good and bad cases as regards the duration of the detachment, and has achieved 40 per cent. (possibly 43 per cent.) successes with complete re-attachment of the retina.

H. B. Stallard.


(4) In this paper Sourdille describes his method of treating detachment of the retina by multiple scleral puncture. He contests Gonin's acceptance of Leber's theory of the genesis of detachments from tears associated with abnormality of the vitreous, and considers that one must look for the cause in a lesion of the apparatus of union of the two retinal layers. The principle of treatment is to let out the sub-retinal fluid and to provoke an adhesive choroido-retinitis, but Sourdille differs diametrically from Gonin in that he considers it essential to puncture the retina during the operation, and thinks that sub-retinal fluid can pass to be absorbed by the vitreous through such a puncture.

The technique of the operation is briefly as follows:—

After a rest of two days in bed, during which a careful plan of the retina is made and during which 2 grm. calcium chloride a day are administered to minimise the risk of haemorrhage, the eye is anaesthetised and the conjunctival sac washed out with 1 in 10,000 mercuric oxycyanide. A retraction stitch is inserted at the limbus. The conjunctiva is picked up in rat-toothed forceps and a special von Graefe knife, 2 to 3 mm. wide, thrust obliquely through conjunctiva and sclera to a depth of 10-12 mm., usually at a distance of 14-17 mm. from the limbus. A large number of punctures is made near the retinal tear. A solution of cyanide of
mercury is then given as a sub-conjunctival injection, and atropine and morphine ointment inserted into the conjunctival sac. The head is kept still for eight days and the patient allowed up on the 15th day. There is often much pain after the operation, and vitreous and sub-retinal haemorrhages may complicate it. About half the immediately cured cases relapse. The results (71 cures out of 169 cases, 40 of whom were operated on more than once) approximate fairly closely to those obtained by Gonin's method. Sourdille also considers prophylactic mercurial treatment of peripheral choroiditis in the other eye to be of value.

IDA C. MANN.


(5) Mayes's paper is in the nature of a preliminary communication concerning work which may have an important bearing on the pathology of retinal detachment. In the first place, the author refers to a previous paper (Arch. of Ophthal., Vol. VII, p. 499, April, 1932) concerning a mechanical method of artificially detaching the retina. The result of using this method was that although a hole was produced in the retina, spontaneous re-attachment occurred after 6 weeks. The author therefore felt that some other factor must also be at work, possibly in the vitreous itself, so he tried the effect of injecting 3 minims of a 1 in 4 dilution of saturated trypsin solution in normal saline. The result was to bring about a prolonged detachment of the retina which nevertheless was not permanent. Investigation of the vitreous in eyes thus treated showed an enormous increase in sugar content, an increase in total nitrogen and an increase in surface tension, while there was a decrease in amino-nitrogen and in hydrogen ion concentration toward the acid side.

F. A. W-N.

(6) Terry, T. L.—(Boston).—Histologic changes in an eye eight years after sclerocautery puncture for separation of the retina. Arch. of Ophthal., August, 1932.

(6) Terry's case was one of traumatic detachment of the retina in which three cautery punctures had been done at intervals of a few days without producing permanent re-attachment of the retina. Eight years later, the eye was excised for glaucoma. The sections showed that the retina was completely detached except at the disc, ora serrata, and the sites of the cautery punctures. In the latter positions, the retina had become reduced to a thin layer of neuroglia, fused with a mass of scar tissue which had replaced the choroid and sclera. In only one puncture had vitreous presented at the time of
operation, and sections through this, showed partly hyaline scar tissue projecting inwards into the vitreous, a condition which was absent in the other two cauterised areas.

F. A. W-N.


(7) The aim of this investigation by Friedenwald and Chan was to discover what aspects of the local lesion might be considered primary and what aspects secondary. Pathologically there is a disturbance of the retinal pigment epithelium with a scattering of its granules in the retina, and in association with this are atrophy and destruction of the neural elements with glial proliferation and reduction in calibre of the vessels. The sequence of signs and symptoms:—night blindness, then obvious pigmentary disturbances and finally optic atrophy—suggests that the disease is primarily due to the pigmentary disturbance. In order to test this hypothesis, the authors made a suspension of melanin granules from pig's or cow's eyes, and injected 0.2 c.c. of it into the vitreous of one eye of each of 12 albino rabbits, the other eye receiving a control injection of 0.5 per cent. cresol in normal saline (the medium used for suspension of the melanin granules). The transport of pigment by phagocytic cells from the vitreous was exceedingly slow, but within one or two months, deposits of pigment could be seen in the lower peripheral retina, and sometimes near the disc. In the latter case, they assumed the familiar “bone corpuscle” pattern. Histologically there were numerous phagocytes loaded with pigment, and in the early cases many of Müller's fibres were found, packed with granules. Later, these fibres underwent proliferation, and there was considerable destruction of retinal tissue, particularly in those portions which were covered by a deposit of pigment. This is ascribed by the authors to the passage of phagocytes; “a structure so highly organised as the retina may, therefore, be supposed to suffer disorganisation when an army of heavily laden phagocytes tramp through.” The occurrence of retinitis pigmentosa sine pigmento, would at first sight appear to be an obvious argument against this theory, but “sine pigmento” is probably only a relative term, and it is more than likely that if these cases were examined histologically, small clumps of pigment would be found which were invisible with the ophthalmoscope. In spite of this, however, the authors say that their experiments are not conclusive in deciding whether, in the natural disease, both elements in the neuro-epithelium are primarily involved, or whether the disintegration in the rods and cones is secondary to the scattering of pigment from the pigment epithelium or vice versa.

F. A. W-N.
(8) Evans, John N. (Brooklyn).—Retinal perivascular delineation. _Arch. of Ophthal._, December, 1931.

(8) Evans, after a short historical survey, describes the experiments he has made to try and delineate the retinal perivascular spaces. Living eyes were used, and whenever possible, in adult albino rabbits. In the first series of experiments, a suspension of minute particles was injected into the vitreous at varying depths. Precautions were taken to ensure uniformity in size of the particles and the substances used were Indian ink, carmine granules and a suspension of ocular pigment. Forty-eight hours after injection, the mass in the vitreous developed definite radiating streamers, and at the end of two weeks or so, the pigment masses were seen lying against the retina, mainly below. During the ensuing weeks, the pigment masses seemed to cluster more and more over the nerve head. Microscopically, the particles were found to have been taken up by the histiocytes (large mononuclear tissue cells) without any relation to supposed or actual lymphatic spaces. The greater number of those cells present in the retina were in the nerve fibre layer, but the most conspicuous feature of the whole picture was the number of pigment bearing cells in the optic nerve, where again there was no definite relation to any particular tissue or channels. These experiments were therefore a failure from the point of view of delineating perivascular channels, so dyes were used instead, the best being an isotonic solution of Prussian blue. When this was injected into the vitreous, blue could be found later about the bipolar cells and their processes, and about the vessels of the retina and optic nerve. In the author's opinion the presence of the particles in these positions does not warrant the assumption that they lie in a formed space.

F. A. W-N.

(9) Adler, Francis Heed (Philadelphia). The metabolism of the retina. _Arch. of Ophthal._, December, 1931.

(9) Adler has noted in a previous communication (_Trans. Amer. Ophthal. Soc._, Vol. XXVIII, p. 307, 1930) that the sugar content of the normal vitreous was always considerably lower than that of the aqueous or blood serum of the same animal, although the sugar content of the vitreous rose when that of the blood was increased. A study of glycolytic activity showed that the retina could split sugar almost twice as quickly as any of the other ocular tissues, a fact which would account for the low sugar content of the vitreous. Further proofs of this are adduced in the present paper. In the first place the concentration of sugar in the posterior layers of the vitreous is considerably less than in the anterior layers, and secondly, when the retina has been put out of action by section of the optic
nerve three months previously, the sugar content of the aqueous rises above the normal, and that of the vitreous, very much above the normal. Experiments to measure the glycolytic activities of the retina showed the same thing, the atrophic ones using much less sugar per hour than did the normal retinae.

F. A. W-N.

II.—MISCELLANEOUS


(1) An admirable critical review of the literature on this subject is contributed to the Edinburgh Medical Journal of October, 1932, by David M. Greig, conservator of the museum of the Royal College of Surgeons, Edinburgh. The old name of bloody tears is obviously an error, for, as Dr. Greig points out, there is no bleeding from the lacrimal glands, and the blood comes from the conjunctiva or caruncle. The condition, while not unknown in the male sex, is much more common in the female, and in olden times was thought to have some connexion with abnormal menstruation. Hippocrates noted that in such a condition an epistaxis could occur. The earliest reference in English literature is that of Clopton Havers in the Philosophical Transactions in 1695. The patient died of a "sluce of blood." Mackenzie, in 1854, seems to have voiced the doubt as to the bleeding coming from the lacrimal gland, and suggested the conjunctiva as a source. Dr. Greig's article ends as follows: "It seems not unnatural that in relation to psychic stimulations, puberal re-adjustments and menstrual irregularities should be thought to indicate the apparent cause, but it is less apparent from the case quoted above, that they are far less obviously the exciting agents than is the so-called hysterical state. . . . It is a central psychic excitation, not a peripheral mechanical one. It is significant that so many of the women who exhibited the phenomenon of recurrent ocular discharge of blood were potential epileptics, and though only the ocular disturbance is reviewed in this paper, it is recognised to be only a local manifestation of a vaso-motor lesion, the counterpart of local recurrent haemorrhages elsewhere. . . .

Perhaps the delicacy of the subconjunctival circulation, its amenability to vasomotor disturbances, and the vascularity about the caruncle, may predispose that area to recurrent bleedings. . . ."

R. R. J.

(2) Clay's paper opens with a short description of the fundus changes found in this condition and describes it as being "apparently acute," "and characterised by the formation of haemorrhages exudates and striae." The streaks are usually associated with the presence of central choroiditis and in many cases with a skin condition called pseudo-xanthoma elasticum. This occurs usually in early life and consists in the development of yellowish punctate or linear discoulourations in the skin of the neck, axillary folds, cubital fossae, popliteal spaces, and sometimes the abdomen and chest. Histologically, there is an increase in the amount of elastic tissue accompanied by degenerative changes in it. Of the seven cases of angioid streaks reported by the author, five showed pseudo-xanthoma elasticum of the skin, one senile elastosis, and three, an evident vascular anomaly. The author is of opinion that the association of these diseases is not a chance one, and he postulates a similar change in the sclera (i.e., an increase in its fibro-elastic tissue). Short posterior ciliary veins are sometimes present, and if so, they become thrombosed by the pressure of the elastic tissue, resulting in the presence of haemorrhages, exudates and streaks, corresponding to the vessels involved. Angioid streaks, according to this theory are therefore in the choroid and not in the retina.

F. A. W -N.


(3) The extremely interesting case here recorded by Eager and Fisher is hardly suitable for abstract in an ophthalmological journal. In detail it deals with cerebration, not with vision. Without attempting to abstract the article, one may show, in the author's words, the distinction to be drawn between mirror-writing and pseudo-mirror writing. "The writing (in this case) is not true mirror-writing; it is backward writing, with the letters correctly orientated, and written with the right hand in dextrad fashion, from left to right of the paper. This pseudo-mirror writing . . . is unintelligible when reflected in a mirror, save for an isolated word here and there. Secondly, it is associated with upside down reading and drawing, and backward spelling. . . ."

For the details of the case one must refer to the original with its reproduction of the remarkable caligraphy and drawing, to say nothing of the astonishing arithmetical efforts of this patient.

Ernest Thomson.